

# Endoscopy

Supplement

S1/2021

This journal is indexed  
in MEDLINE, Current  
Contents (CM + LS),  
Science Citation Index,  
and in EMBASE/Excerpta  
Medica and SCOPUS

Official Organ of the  
European Society  
of Gastrointestinal  
Endoscopy (ESGE) and  
Affiliated Societies



ESGE Days 2021

*Abstract issue*



Thieme

The logo for Thieme, featuring a stylized tree with a circular canopy and a trunk, enclosed in a circle. To the right of the logo, the word 'Thieme' is written in a dark blue, serif font.

## ESGE Days 2021



**Datum/Venue:**  
25 – 27. March 2021

**Chairman:**  
Mario Dinis- Ribeiro (Portugal)  
ESGE President and ESGE Days 2021 Scientific Committee Chairman

## Welcome message

Dear Colleagues,

Firstly, I would like to thank the ESGE Scientific Committee that has helped to deliver an amazing programme for ESGE Days 2021.

On their behalf, I would like to also honour all researchers - both within and outside Europe - who have submitted their abstracts. We truly appreciate your contribution to our annual congress and the advancement of endoscopy research.

We received a total of 783 abstracts of very high quality, from 53 different countries, leading us to accept over 230 of them to present orally. This high volume and high standard confirm that ESGE Days 2021 is the perfect forum at which to present your best research.

With the Covid-19 pandemic still putting a halt to all in-person events, ESGE Days 2021 is taking place in a virtual form. It is an imperative part of our commitment to our members that, despite all the challenges we face due to the pandemic, our community stays ahead of the continual surge of advances in gastrointestinal endoscopy so we can make the best decisions for the care of our patients. We want to ensure that our annual meeting remains one of the premier educational events for health professionals and scientists who practice, or conduct research, in the field of digestive diseases.

I hope that you find this online supplement of *Endoscopy*, containing all the abstracts accepted for ESGE Days 2021, informative and educational. To all of you who have submitted their research to the meeting, we are excited to learn from you this year, and your participation will help expand the data exchange that is critical to improving patient care worldwide.

Thank you for contributing to making ESGE Days 2021 one of the top European digestive diseases meetings that it has become today!

Best wishes,

Mário Dinis-Ribeiro  
ESGE President and ESGE Days 2021 Scientific Committee Chairman



## S1 Welcome message

## S5 ESGE Days 2021 Oral presentations

**Thursday, 25 March 2021**

- S5 Plenary with best abstracts
- S7 Take a deep dive into small bowel endoscopy
- S8 AI in the esophagus: A clinical challenge
- S10 Novel concepts in endoscopic repair of GI defects
- S12 Infection Risk and Endoscopy Training in the Era of COVID-19
- S14 ESD in the esophagus: Europe is here!
- S15 Biliary cannulation: When the going gets tough
- S17 Colorectal Cancer (CRC) Screening (WEO-ESGE joint session)
- S18 Therapeutic EUS: What are the new frontiers?
- S19 Endoscopy for metabolic syndrome
- S21 Colorectal Cancer (CRC) Screening (WEO-ESGE joint session)
- S22 Risk factor assessment for gastric cancer
- S24 Advanced Cholangioscopy techniques: Are we ready for prime time?
- S25 EUS-guided biliary drainage: From theory to practice
- S26 ERCP: What to do when things go wrong
- S28 New perspectives in EUS pancreatic diagnosis
- S30 Barrett's and beyond

**Friday, 26 March 2021**

- S33 Endoscopic therapy for early (pT1) colorectal cancer
- S35 The Impact of COVID-19 on Digestive Cancer Screening and Surveillance
- S38 Challenges in management of ampullary duodenal neoplasms
- S39 Transduodenal EUS biliary approach: The best way?
- S42 Endoscopic management of leaks and fistula
- S43 Optimising EMR for large colorectal polyps
- S45 EUS gastroenterostomy: A new gold standard for managing gastric outlet obstruction?
- S48 Optimising outcomes of ERCP
- S50 AI in the colon: Better detection and characterisation of polyps?
- S52 Challenges in gastric ESD
- S53 Colonic lesions: Improve your detection!
- S35 Tackling the tricky biliary stricture
- S57 AI in the colon: Innovations and new developments
- S59 How to master colorectal ESD?
- S61 PERI-Endoscopic management of anticoagulation and sedation
- S62 Precancerous gastric changes: Optimising recognition

**Saturday, 27 March 2021**

- S64 New therapeutic frontiers
- S66 EUS for drainage of infected collections
- S68 Pancreatic endotherapy: Off the beaten track
- S70 Can we still improve EUS diagnostic accuracy?
- S73 Pushing the boundaries of endoscopic imaging: Can we still do better?
- S76 Resect and discard for diminutive polyps: Where do we stand?
- S78 Difficult bile stones in year 2021
- S80 Upper GI endoscopy: Complications, bleeding, and more
- S82 Quality and Training in Endoscopy
- S84 How to minimise bleeding after EMR/ESD
- S86 New exciting technologies in upper GI endoscopy
- S88 Colonic polyp characterisation guides your therapy
- S90 Technical toolbox for endoscopic colorectal resection
- S92 All about Zenker's
- S93 EUS-guided gastroenterostomy: From theory to practice
- S95 Colonoscopy for screening or surveillance

## S97 ESGE Days 2021 Digital poster exhibition

## S271 Authors' Index

The abstract issue status is as at February 24, 2021.



# Endoscopy

Official Organ of the European Society of Gastrointestinal Endoscopy (ESGE)  
and affiliated societies

## Editor-in-Chief

Peter D. Siersema, The Netherlands

## Co-Editors-in-Chief

Mário Dinis-Ribeiro, Portugal  
Heiko Pohl, USA

## Associate Editor

Thierry Ponchon, France

## Co-Editors

Nicholas Burgess, Australia  
Wai Yan Philip Chiu, Hong Kong  
Klaus Mönkemüller, Germany  
Maria Pellise, Spain  
Marcin Polkowski, Poland  
Mathieu Pioche, France  
Sachin Wani, USA

## Social Media Editors

Ian Gralnek, Israel  
Ioannis Papanikolaou, Greece

## Managing Editor

Hilary Hamilton-Gibbs, Germany

## Chief Copy Editor

Teresa Brady, UK

## Editorial Assistants

Françoise Heidenreich, Germany  
Elisabeth Honner, Germany

## Statistical Advisors

Kurt Ulm, Germany  
Stefan Wagenpfeil, Germany  
Jonas Ranstam, Sweden  
Jennifer Cooper, United States  
Milada Cvcancarova Smastuen, Norway

## Advisory Board

Joseph E. Geenen, USA  
Glen Lehman, USA  
Nib Soehendra, Germany  
Hiroaki Suzuki, Japan  
Guido N. J. Tytgat, The Netherlands

## Former Editors

Meinhard Classen †, Germany  
Ludwig Demling †, Germany  
Thomas Rösch, Germany

## Editorial Board

Lars Aabakken, Norway  
Seiichiro Abe, Japan  
Joseph Anderson, USA  
Miguel Areia, Portugal  
Marianna Arvanitakis, Belgium  
Amol Bapaye, India  
Todd Baron, USA  
Marc Barthet, France  
Jacques Bergman, The Netherlands  
Nick Burgess, Australia  
Jeong-Sik Byeon, Korea  
Anthoni Castells, Spain  
Emmanuel Coron, France  
Guido Costamagna, Italy  
Pierre Deprez, Belgium  
Jacques Devière, Belgium  
Xavier Dray, France  
Jean Marc Dumonceau, Argentina  
James East, UK  
Pietro Fusaroli, Italy  
Begoña González-Suárez, Spain  
Ian Gralnek, Israel  
Cesare Hassan, Italy  
David Hewett, UK

Øyvind Holme, Norway  
Jeanin van Hooft, The Netherlands  
Hajime Isomoto, Japan  
Charles Kahi, USA  
Michal Kaminski, Poland  
Peter Klare, Germany  
Arjun Koch, Netherlands  
Alberto Larghi, Italy  
James Lau, HK, China  
Alexander Meining, Germany  
Helmut Messmann, Germany  
Alan Moss, Australia  
Eduardo de Moura, Brazil  
Bertrand Napoleon, France  
Horst Neuhaus, Germany  
Helmut Neumann, Germany  
Ichiro Oda, Japan  
Adolfo Parra-Blanco, UK  
Oliver Pech, Germany  
Julio Pereira-Lima, Brazil  
Manuel Perez-Miranda, Spain  
Massimiliano di Pietro, UK  
Krish Ragunath, UK  
Miguel Angel Ramirez Luna, Mexico  
Jaroslaw Regula, Poland  
Daniel von Renteln, Canada  
Rungsum Rerknimitr, Thailand  
Douglas Robertson, USA  
Carla Rolanda, Portugal  
Yutaka Saito, Japan  
Dong-Wan Seo, Korea  
Rajvinder Singh, Australia  
Yoji Takeuchi, Japan  
Ilaria Tarantino, Italy  
Pier Alberto Testoni, Italy  
Geoffroy Vanbiervliet, France  
Michael Vieth, Germany  
Ping-Hong Zhou, China



# Endoscopy

Official Organ of the European Society of Gastrointestinal Endoscopy (ESGE)  
and affiliated societies

## Editorial Office

Endoscopy Editorial Office  
Hamilton Services GmbH  
Landwehr Str. 9  
80336 Munich  
Germany  
Tel. +49-89-90779360  
Fax +49-89-907793620  
endoscopy.editorialoffice@thieme.de

## ESGE

European Society of Gastrointestinal  
Endoscopy (ESGE)



### Governing Board:

Mário Dinis-Ribeiro, President (Portugal)  
Thierry Ponchon, Past President (France)  
Helmut Messmann, President Elect  
(Germany)  
Ian M. Gralnek, Secretary General (Israel)  
Cesare Hassan, Treasurer (Italy)

### Councillors:

Raf Bisschops (Belgium)  
Jeanin van Hooft (The Netherlands)  
Michael Kaminski (Poland)  
Peter D. Siersema (The Netherlands)  
Konstantinos Triantafyllou (Greece)  
Maria Pellisé Urquiza (Spain)  
George Webster (United Kingdom)

### Committees:

Education Committee Chair:  
Marianna Arvanitakis (Belgium)  
ESGE Young Endoscopists Committee Chair:  
Andrei Mihai Voiosu (Romania)  
Research Committee Chair:  
Pradeep Bhandari (United Kingdom)  
Quality Improvement Committee  
Chair: Raf Bisschops (Belgium)  
Public Advocacy Committee Chair:  
Thierry Ponchon (France)  
Guidelines Committee Chair:  
Jeanin van Hooft (The Netherlands)

### Secretariat

European Society of Gastrointestinal  
Endoscopy (ESGE)  
Hamilton Services GmbH  
Landwehr Str. 9  
80336 Munich  
Germany  
Tel. +49-89-907793611  
Fax +49-89-907793620  
secretariat@esge.com

## Publishers

Georg Thieme Verlag KG  
Ruedigerstraße 14  
D-70469 Stuttgart  
P.O. Box 301120  
70451 Stuttgart  
Germany

Thieme Medical Publishers, Inc.  
333 Seventh Avenue  
USA, New York, NY 10001

For subscription information  
please contact: endoscopy@thieme.de

**Impact Factor: 7.341**

## ESGE Days 2021 Oral presentations

Thursday, 25 March 2021

10:00 – 10:45

Plenary with best abstracts

Room 1

**OP1 THROMBOEMBOLIC EVENTS AND ENDOSCOPY-RELATED BLEEDING IN PATIENTS ON DIRECT ORAL ANTICOAGULANTS OR VITAMIN K ANTAGONISTS: A MULTICENTRIC PROSPECTIVE OBSERVATIONAL STUDY**

**Authors** Rodríguez de Santiago E<sup>1</sup>, Sánchez Aldehuelo R<sup>1</sup>, Riu Pons F<sup>2</sup>, Rodríguez Escaja C<sup>3</sup>, Fernández Esparrach G<sup>4</sup>, Cañete Ruiz Á<sup>5</sup>, Ferre Aracil C<sup>6</sup>, Pérez Corte D<sup>7</sup>, Ríos León R<sup>8</sup>, Marcos Prieto HM<sup>9</sup>, Delgado Guillena PG<sup>10</sup>, García Rodríguez A<sup>11</sup>, Warner Argente C<sup>12</sup>, Muriel A<sup>13</sup>, De La Fuente Briongos E<sup>1</sup>, García García de Paredes A<sup>1</sup>, Parejo Carbonell S<sup>1</sup>, Téllez L<sup>1</sup>, Senosiain Lalastra C<sup>1</sup>, Burgos Santamaría D<sup>1</sup>, Aicart Ramos M<sup>1</sup>, Mateos Muñoz B<sup>1</sup>, Peñas García B<sup>1</sup>, Pagano G<sup>2</sup>, Casals Urquiza G<sup>2</sup>, Urpi Ferreruela M<sup>2</sup>, de Jorge Turrión MA<sup>3</sup>, Barreiro Alonso E<sup>3</sup>, Fraile López M<sup>3</sup>, Gómez Outomuro A<sup>3</sup>, Altamirano MI<sup>4</sup>, Núñez Esteban M<sup>4</sup>, Ruiz Andreu M<sup>4</sup>, Arribas Anta J<sup>5</sup>, de Frutos D<sup>6</sup>, Herreros de Tejada A<sup>6</sup>, Arias Rivera ML<sup>8</sup>, Roldán Fernández M<sup>9</sup>, Marcos Martín ÁF<sup>9</sup>, Zamora J<sup>13</sup>, Brujats A<sup>14</sup>, Tavío E<sup>1</sup>, Pérez Riveras P<sup>1</sup>, Vázquez Sequeiros E<sup>1</sup>, Albillós A<sup>1</sup> SEED-AEG ENDOHEM Study Group

**Institute** 1 Department of Gastroenterology and Hepatology, Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS), CIBEREHD, Universidad de Alcalá, Madrid, Spain; 2 Hospital del Mar, Department of Gastroenterology, Endoscopy Unit, Barcelona, Spain; 3 Hospital Universitario Central de Asturias, Servicio de Aparato Digestivo, Oviedo, Spain; 4 University of Barcelona, Endoscopy Unit, Gastroenterology Department, ICMDiM, Hospital Clinic, Barcelona, Spain; 5 12 de Octubre University Hospital, Endoscopy Unit, Gastroenterology Department, Madrid, Spain; 6 Hospital Universitario Puerta de Hierro, Gastroenterology Department, Research Institute Segovia Arana, Madrid, Spain; 7 Hospital de Avilés, Department of Gastroenterology, Avilés, Spain; 8 Hospital General de Villalba, Servicio de Aparato Digestivo, Madrid, Spain; 9 Hospital Universitario de Salamanca, Instituto de Investigación Biomédica de Salamanca (IBSAL), Servicio de Aparato Digestivo, Salamanca, Spain; 10 Hospital General de Granollers, Department of Gastroenterology, Barcelona, Spain; 11 Hospital de Viladecans, Department of Digestive Diseases, Barcelona, Spain; 12 Department of Gastroenterology, Hospital de la Santa Creu i Sant Pau, Universitat Autònoma de Barcelona, Barcelona, Spain; 13 Clinical Biostatistics Unit, Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS), CIBERESP, Madrid, Spain; 14 Hospital de la Santa Creu i Sant Pau, Universitat Autònoma de Barcelona, Department of Gastroenterology, Barcelona, Spain

DOI 10.1055/s-0041-1724261

**Citation:** Rodríguez de Santiago E, Sánchez Aldehuelo R, Riu Pons F et al. OP1 THROMBOEMBOLIC EVENTS AND ENDOSCOPY-RELATED BLEEDING IN PATIENTS ON DIRECT ORAL ANTICOAGULANTS OR VITAMIN K ANTAGONISTS: A MULTICENTRIC PROSPECTIVE OBSERVATIONAL STUDY. *Endoscopy* 2021; 53: S5.

**Aims** 1. To compare the risks of endoscopy-related gastrointestinal bleeding and thromboembolic events in patients on direct oral anticoagulants (DOACs) or vitamin K antagonists (VKAs) in elective endoscopy.

2. To examine the impact of the timing of anticoagulant resumption on the risk of delayed bleeding in high-risk therapeutic procedures.

**Methods** We conducted a multicenter, prospective, observational study from January 2018 to March 2020 of patients on oral anticoagulants undergoing elective endoscopic procedures. Our primary outcomes were 90-day thromboembolic events and 30-day endoscopy-related gastrointestinal bleeding. The inverse probability of treatment weighting propensity score method was used for baseline covariate adjustment.

**Results** A total of 1,602 patients on oral anticoagulants (1,004 on VKAs and 598 on DOACs) underwent 1,874 elective endoscopic procedures. The 2 groups had similar risks of endoscopy-related gastrointestinal bleeding (VKAs vs DOACs, 6.2% vs 6.7%; adjusted odds ratio [OR], 1.05; 95% CI, 0.67–1.65) and thromboembolic events (VKAs vs DOACs, 1.3% vs 1.5%; adjusted OR, 0.90; 95% CI, 0.34–2.38). Mortality was higher from thromboembolic events than from bleeding events (9.1% vs 0%,  $P = .03$ ). In high bleeding risk procedures ( $n = 747$ ), delayed anticoagulant resumption ( $> 48$  hours or 24–48 hours vs  $< 24$  hours) did not reduce the risk of postprocedural bleeding (10.3%, 9%, and 5.8%, respectively; adjusted  $P = .43$ ). Hot and cold snare polypectomy were the most frequent high-risk interventions (41.8% and 39.8%, respectively).

**Conclusions** In a prospective study of patients on DOACs or VKAs undergoing elective endoscopy, endoscopy-related bleeding and thromboembolic events showed similar risk. Our study suggests that early anticoagulant resumption is safe in most patients, but more data are needed for advanced high-risk therapeutic procedures.

**OP2 NO ADVANTAGE OF LUMEN-APPPOSING METAL STENTS OVER DOUBLE-PIGTAIL PLASTIC STENTS FOR ENDOSCOPIC TREATMENT OF INFECTED NECROTIZING PANCREATITIS**

**Authors** Boxhoorn L<sup>1,2</sup>, Verdonk RC<sup>3</sup>, Besselink MC<sup>4</sup>, Boermeester MA<sup>4</sup>, Bollen TL<sup>5</sup>, Bouwense SA<sup>6</sup>, Cappendijk VC<sup>7</sup>, Curvers WL<sup>8</sup>, Dejong CH<sup>6</sup>, van Dijk SM<sup>4,2</sup>, van Dullemen HM<sup>9</sup>, van Eijck CH<sup>10</sup>, van Geenen EJ<sup>11</sup>, Hadithi M<sup>12</sup>, Hazen WL<sup>13</sup>, Honkoop P<sup>14</sup>, van Hooft JE<sup>15</sup>, Jacobs MA<sup>1</sup>, Kouw E<sup>16</sup>, Kuiken SD<sup>17</sup>, Ledebor M<sup>18</sup>, Nieuwenhuijs VB<sup>19</sup>, Perk LE<sup>20</sup>, Poley JW<sup>21</sup>, Quispel R<sup>22</sup>, de Ridder R<sup>23</sup>, van Santvoort HC<sup>24,25</sup>, Stommel MW<sup>26</sup>, Timmerhuis HC<sup>24,2</sup>, Wittteman BJ<sup>27</sup>, Umans DS<sup>1,2</sup>, Venneman NG<sup>28</sup>, Vleggaar FP<sup>29</sup>, van Wanrooij RL<sup>1</sup>, Sperna Weiland CJ<sup>11,2</sup>, Bruno MJ<sup>21</sup>, Fockens P<sup>1</sup>, Voermans RP<sup>1</sup> Dutch Pancreatitis Study Group

**Institute** 1 Amsterdam UMC, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 St. Antonius Hospital, Research and Development, Nieuwegein, Netherlands; 3 St. Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 4 Amsterdam UMC, Surgery, Amsterdam, Netherlands; 5 St. Antonius Hospital, Radiology, Nieuwegein, Netherlands; 6 Maastricht University Medical Center+, Surgery, Maastricht, Netherlands; 7 Jeroen Bosch Hospital, Radiology, Den Bosch, Netherlands; 8 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 9 University Medical Center Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 10 Erasmus University Medical Center, Surgery, Rotterdam, Netherlands; 11 Radboudumc, Gastroenterology and Hepatology, Nijmegen, Netherlands; 12 Maasstad Hospital, Gastroenterology and Hepatology, Rotterdam, Netherlands; 13 Elisabeth-TweeSteden Hospital, Gastroenterology and Hepatology, Tilburg, Netherlands; 14 Albert Schweitzer Hospital, Gastroenterology and Hepatology, Dordrecht, Netherlands; 15 Leiden University Medical Center, Gastroenterology and Hepatology, Leiden, Netherlands; 16 Gelre Hospital, Gastroenterology and Hepatology, Apeldoorn, Netherlands; 17 OLVG, Gastroenterology and Hepatology, Amsterdam, Netherlands; 18 Deventer Hospital, Gastroenterology and Hepatology, Deventer, Netherlands; 19 Isala Clinics, Surgery, Zwolle, Netherlands; 20 Haaglanden Medical Center, Gastroenterology and Hepatology, The Hague, Netherlands; 21 Erasmus University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands; 22 Reinier de Graaf Gasthuis, Gastroenterology and Hepatology, Delft, Netherlands; 23 Maastricht University Medical Center+, Gastroenterology and Hepatology, Maastricht, Netherlands; 24 St. Antonius Hospital, Surgery, Nieuwegein, Netherlands; 25 University Medical Center Utrecht, Surgery, Utrecht, Netherlands; 26 Radboudumc, Surgery, Nijmegen, Netherlands; 27 Hospital Gelderse Vallei, Gastroenterology and Hepatology,

Ede, Netherlands; 28 Medisch Spectrum Twente, Gastroenterology and Hepatology, Enschede, Netherlands; 29 University Medical Center Utrecht, Gastroenterology and Hepatology, Utrecht, Netherlands

DOI 10.1055/s-0041-1724262

**Citation:** Boxhoorn L, Verdonk RC, Besselink MG et al. OP2 NO ADVANTAGE OF LUMEN-APPPOSING METAL STENTS OVER DOUBLE-PIGTAIL PLASTIC STENTS FOR ENDOSCOPIC TREATMENT OF INFECTED NECROTIZING PANCREATITIS. *Endoscopy* 2021; 53: S5.

**Aims** The endoscopic step-approach is preferred over a surgical step-up approach in eligible patients with infected necrotizing pancreatitis. Lumen-apposing metal stents (LAMS) might optimize endoscopic drainage and reduce the need for endoscopic necrosectomy. Nevertheless, some safety concerns, particularly bleeding, remain. We conducted a multicenter prospective study to investigate the clinical outcome of LAMS in patients with infected necrotizing pancreatitis.

**Methods** Patients with infected necrotizing pancreatitis, eligible for endoscopic drainage with LAMS, were prospectively enrolled and compared to 51 patients assigned to the endoscopic step-up approach with double-pigtail plastic stents (DPS) in the multicenter TENSION trial. Primary endpoint was the need for endoscopic necrosectomy. Secondary endpoints included mortality, major complications, total number of interventions, length of intensive care and hospital stay during 6 months of follow-up.

**Results** A total of 53 patients were prospectively enrolled in 17 hospitals. The primary end point did not differ between the LAMS-group and DPS-group (64% vs. 57%; RR 1.13, 95%CI 0.83-1.54, P=0.55). After correction for age, gender, SIRS, CRP, and use of antibiotics, the odds of endoscopic necrosectomy was 1.14 (95%CI 0.44-2.90, P=0.78).

No differences were observed in mortality (11% vs. 18%; RR 0.64, 95%CI 0.25-1.67, P= 0.41) or major complications. Bleeding occurred in 9% in the LAMS vs. 22% in the DPS-group (RR 0.44, 95%CI 0.16-1.17, P=0.11). Length of intensive care stay was equal (median 0 days vs. 0 days, P=0.49), and hospital stay did not differ (median 34 days vs. median 35, P=0.23). The median number of drainage procedures was 1 in the LAMS-group vs. 1 in the DPS-group (P=0.44), and median number of necrosectomies was 1 vs. 1 (P=0.37).

**Conclusions** In patients with infected necrotizing pancreatitis, the use of LAMS for endoscopic drainage was not superior to DPS with regards to need for endoscopic necrosectomy. No increased risk of major complications, in particular bleeding, was found.

### OP3 LACTATED RINGER'S SOLUTION IN COMBINATION WITH RECTAL INDOMETHACIN FOR PREVENTION OF POST-ERCP PANCREATITIS: A PROSPECTIVE RANDOMIZED, DOUBLE-BLINDED, CONTROLLED TRIAL

**Authors** Amalou K<sup>1</sup>, Belghanem F<sup>1</sup>, Bousselob A<sup>1</sup>, Ararem I<sup>2</sup>, KEZOULA D<sup>3</sup>, MEDKOUR MT<sup>3</sup>

**Institute** 1 Algiers University of Medicine, Gastroenterology Military Central Hospital, Algiers, Algeria; 2 Algiers University of Medicine, Epidemiology Military Central Hospital, Algiers, Algeria; 3 Algiers University of Medicine, Gastroenterology, Military Central Hospital, Algiers, Algeria

DOI 10.1055/s-0041-1724263

**Citation:** Amalou K, Belghanem F, Bousselob A et al. OP3 LACTATED RINGER'S SOLUTION IN COMBINATION WITH RECTAL INDOMETHACIN FOR PREVENTION OF POST-ERCP PANCREATITIS: A PROSPECTIVE RANDOMIZED, DOUBLE-BLINDED, CONTROLLED TRIAL. *Endoscopy* 2021; 53: S6.

**Aims** Prospective data have shown the benefit of rectal indomethacin (IND) for preventing post-ERCP pancreatitis (PEP). Recents pilot studies demonstrated a lower incidence of PEP after an 8-hour lactated Ringer's solution (LR) infusion. The aim of this study was to evaluate the efficacy of IND with or without bolus LR in patients at high-risk for PEP.

**Methods** In this randomized, double-blinded controlled trial, we assigned patients to LR, IND, or LR + IND. Each liter of fluid infusion was completed

within 30 minutes. Patients were determined high-risk based established criterion and excluded if they had pancreatitis, contraindications to IND, or signs of volume overload. Our primary outcome was PEP, defined by standardized criterion. Our secondary outcomes were severe acute pancreatitis, localized adverse events, death, length of stay, and readmission.

**Results** Our sample consisted of 210 patients (70 per group) who completed follow-up at 24 hours and at 30 days post-ERCP. All patients had at least 1 high-risk criterion for PEP, and 59% had >1. PEP occurred in 5 patients (7%) in the LR + IND versus 12 (17%) in the LR group (P = 0.04), and 6 (8%) in the IND group (P = 0.06). Readmission rates were lower in the LR + IND group (2 [2%]) versus the LR group (7 [10%]; P = 0.03). No differences were found between the other study groups. There was 1 case of severe pancreatitis (LR+IND), 2 in LR group and 1 in IND group.

**Conclusions** In patients at high risk for PEP, LR + IND reduced the incidence of PEP and readmission rates compared with LR or IND alone.

### OP4 EFFICACY OF REAL-TIME COMPUTER-AIDED DETECTION OF COLORECTAL NEOPLASIA IN A NON-EXPERT SETTING: A RANDOMIZED CONTROLLED TRIAL

**Authors** Repici A<sup>1</sup>, Spadaccini M<sup>1</sup>, Antonelli G<sup>2</sup>, Maselli R<sup>1</sup>, Galtieri PA<sup>1</sup>, Pellegatta G<sup>1</sup>, Capogreco A<sup>1</sup>, Milluzzo SM<sup>3</sup>, Lollo G<sup>4</sup>, Ferrara EC<sup>1</sup>, Fugazza A<sup>1</sup>, Carrara S<sup>1</sup>, Anderloni A<sup>1</sup>, Amato A<sup>5</sup>, De Gottardi A<sup>4</sup>, Spada C<sup>3</sup>, Radaelli F<sup>5</sup>, Hassan C<sup>2</sup>

**Institute** 1 Humanitas Research Hospital, Rozzano, Italy; 2 Nuovo Regina Margherita, Roma, Italy; 3 Fondazione Poliambulanza, Brescia, Italy; 4 Ente Ospedaliero Cantonale, Lugano, Switzerland; 5 Ospedale Valduce, Como, Italy  
DOI 10.1055/s-0041-1724264

**Citation:** Repici A, Spadaccini M, Antonelli G et al. OP4 EFFICACY OF REAL-TIME COMPUTER-AIDED DETECTION OF COLORECTAL NEOPLASIA IN A NON-EXPERT SETTING: A RANDOMIZED CONTROLLED TRIAL. *Endoscopy* 2021; 53: S6.

**Aims** One-fourth of colorectal neoplasias are missed during screening colonoscopies; these can develop into colorectal cancer (CRC). Several deep learning based real-time computer-aided detection (CADE) systems proved their efficacy in improving the performance of expert endoscopists in neoplasia detection. We performed a multicenter, randomized trial to assess the efficacy of a CADE system in detection of colorectal neoplasias in a non-expert setting to challenge the CADE impact in a real-life scenario.

**Methods** We analyzed data of consecutive 40- to 80-years-old subjects undergoing screening colonoscopies for CRC, post-polypectomy surveillance, or workup due to positive results from a fecal immunochemical test or signs or symptoms of CRC, at 5 European centers from July through September 2020. Patients were randomly assigned (1:1) to groups who underwent high-definition colonoscopies with the CADE system or without (controls). As CADE, we used a convolutional neural network with convolutional and max pooling layers (GI-Genius, Medtronic) that was integrated in the endoscopy system (i.e. real-time output on the same endoscopy monitor). A minimum withdrawal time of 6 minutes was required. The primary outcome was adenoma detection rate (ADR, the percentage of patients with at least 1 histologically proven adenoma or carcinoma). Secondary outcomes were adenomas detected per colonoscopy, and withdrawal time.

**Results** The final analysis included 660 patients (age: 62.3±10.0 years old; gender M/F: 330/330). ADR was statistically significantly higher in the CADE-group (176/330, 53.3%) than in the control group (146/330, 44.2%; OR: 1.44; 95% CI:1.06 to 1.96), as well as APC (1.26; 95% CI:1.14-1.38 vs 1.04; 95% CI:0.93-1.15; incident rate ratios, IRR:1.21; 95% CI:1.05-1.40). No statistically significant difference in withdrawal time (CADE: 8.1±1.61 minutes vs control: 7.9 ±1.53; p=0.06) was observed.

**Conclusions** In a multicenter, randomized trial, we found that including CADE in real-time colonoscopy significantly increases ADR and adenomas detected per colonoscopy in a non-expert setting.



## OP5 (DON'T) LET THE MID-GUT BLEED - IMPACT OF ENTEROSCOPY

**Authors** Scaramella L<sup>1,2</sup>, Topa M<sup>1</sup>, Tontini GE<sup>1,2</sup>, Rimondi A<sup>1,2</sup>, Rondonotti E<sup>3</sup>, Penagini R<sup>1,2</sup>, Vecchi M<sup>1,2</sup>, Elli L<sup>1,2</sup>

**Institute** 1 Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Gastroenterology and Endoscopy Unit, Milan, Italy; 2 University of Milan, Department of Pathophysiology and Transplantation, Milan, Italy; 3 Ospedale Valduce, Gastroenterology Unit, Como, Italy

**DOI** 10.1055/s-0041-1724265

**Citation:** Scaramella L, Topa M, Tontini GE et al. OP5 (DON'T) LET THE MID-GUT BLEED - IMPACT OF ENTEROSCOPY. *Endoscopy* 2021; 53: S7.

**Aims** Suspected small bowel bleeding (SSBB) is the main indication for enteroscopy. SSBB studies are characterized by a reduced sample size, rarely including data from both enteroscopic techniques. We assessed in a large cohort of SSBB patients the impact of videocapsule (VCE) and double balloon enteroscopy (DBE).

**Methods** We retrospectively evaluated consecutive patients with SSBB who underwent VCE and/or DBE from March 2001 to July 2020. Demographic and clinical parameters, concomitant anticoagulant therapies, technical characteristics and adverse events were collected. We assessed effectiveness of anteroscopy in terms of diagnostic yield (DY), concordance between the two investigations, hemoglobin values before and after DBE, and safety of the procedures.

**Results** 751 patients underwent enteroscopy for SSBB (807 VCEs, 407 DBEs). The DY was significantly higher in DBE than VCE (68.8% vs 57.7%), being the highest (75%) in DBE performed for overt active bleeding. For both procedures, the DY was significantly higher in elderly patients.

Agreement was generally suboptimal ( $k=0.059$ ), improving in case of a 1-5 days ( $k=0.323$ ) and a 1-7 days ( $k=0.222$ ) interval between the two procedures. The post-procedural mean hemoglobin values were significantly higher than the pre-enteroscopy ones ( $p<0.0001$ ).

No capsular retentions have been recorded. In case of DBE, 8 (1%) mild adverse events occurred (6 in DBE performed for SSBB). In patients treated with Direct Oral Anticoagulants (DOACs) (23; 19 VCEs, 12 DBEs) there were no differences in DY, safety and clinical impact.

**Conclusions** This study describes the broadest European monocentric cohort. VCE and DBE play a pivotal role in the diagnostic-therapeutic approach of SSBB. Concordance between VCE and DBE demonstrated the importance of performing these procedures as soon as possible. The clinical impact is high in elderly patients and in patients treated with DOACs, maintained also during follow-up.

## OP6 FEASIBILITY AND DIAGNOSTIC YIELD OF SMALL BOWEL CAPSULE ENDOSCOPY IN PATIENTS WITH SURGICALLY ALTERED GASTRIC ANATOMY

**Authors** Dray X<sup>1</sup>, Riccioni ME<sup>2</sup>, Wurm Johansson G<sup>3</sup>, Keuchel M<sup>4</sup>, Perrod G<sup>5</sup>, Martin A<sup>6</sup>, Tortora A<sup>2</sup>, Nemeth A<sup>3</sup>, Baltes P<sup>7</sup>, Pérez-Cuadrado-Robles E<sup>8,5</sup>, Chetcuti Zammit S<sup>9</sup>, Lee PS<sup>10</sup>, Cadoni S<sup>11</sup>, Fernández-Urien Sainz I<sup>12</sup>, McNamara D<sup>13</sup>, Margalit-Yehuda R<sup>14</sup>, Beaumont H<sup>15</sup>, Mussetto A<sup>16</sup>, Spada C<sup>17,18</sup>, Elli L<sup>19</sup>, Bruno M<sup>20</sup>, Rondonotti E<sup>21</sup>, Robertson A<sup>22</sup>, Cortegoso Valdivia P<sup>23</sup>, Leenhardt R<sup>1,24</sup>, O.b.o. the European Capsule Endoscopy Working Group Koulaouzidis A<sup>22,25</sup>

**Institute** 1 Sorbonne University, Hôpital Saint Antoine, APHP, Center for Digestive Endoscopy, Paris, France; 2 Fondazione Policlinico A.Gemelli-IRCCS, Roma, Italy; 3 Skåne University Hospital, Lund University, Malmö, Sweden; 4 Asklepios Klinik Altona, Hamburg, Germany; 5 Georges-Pompidou European Hospital, AP-HP Centre - Université de Paris, Paris, France; 6 Université Paris-Est Créteil, Henri Mondor Hospital, Créteil, France; 7 Agaplesion Bethesda Krankenhaus Bergedorf, Hamburg, Germany; 8 Morales Meseguer Hospital, Murcia, Spain; 9 Royal Hallamshire

Hospital, Sheffield Teaching Hospitals, Sheffield, United Kingdom; 10 South Tyneside District Hospital, South Tyneside and Sunderland NHS Foundation Trust, South Shields, United Kingdom; 11 CTO Hospital, Iglesias, Italy; 12 Complejo Hospitalario de Navarra, Pamplona, Spain; 13 TAGG Research Centre, School of Medicine, Trinity College, Dublin, Ireland; 14 Sheba Medical Center, Ramat Gan and Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel; 15 Amsterdam Universitair Medische Centres, Amsterdam, Netherlands; 16 Santa Maria delle Croci Hospital, Ravenna, Italy; 17 Università Cattolica del Sacro Cuore, Roma, Italy; 18 Fondazione Poliambulanza, Brescia, Italy; 19 Mater Dei Hospital, Msida, Malta; 20 Azienda Ospedaliera Città della Salute e della Scienza, Turino, Italy; 21 Ospedale Valduce, Como, Italy; 22 Royal Infirmary of Edinburgh, Edinburgh, United Kingdom; 23 University Hospital of Parma, University of Parma, Parma, Italy; 24 European Capsule Endoscopy Working Group, tbd, France; 25 Department of Social Medicine and Public Health, Faculty of Health Sciences, Pomeranian Medical University, Szczecin, Poland

**DOI** 10.1055/s-0041-1724266

**Citation:** Dray X, Riccioni ME, Wurm Johansson G et al. OP6 FEASIBILITY AND DIAGNOSTIC YIELD OF SMALL BOWEL CAPSULE ENDOSCOPY IN PATIENTS WITH SURGICALLY ALTERED GASTRIC ANATOMY. *Endoscopy* 2021; 53: S7.

**Aims** Little is known about small bowel (SB) capsule endoscopy (CE) in patients with a history of gastric surgery. This study aims to evaluate the feasibility and the diagnostic yield (DY) of orally ingested SB-CE in patients with altered gastric anatomy.

**Methods** 24 European centers retrospectively identified patients who had SB-CE after total or partial gastrectomy. The primary outcome was the diagnostic yield (DY) of SB-CE (intermediate P1 to highly P2 relevant findings). Secondary outcomes were gastric and SB transit times, completion, cleanliness, and adverse events rates.

**Results** 248 procedures from 243 patients (mean age 62 years) with a history of subtotal gastrectomy (47.7%), total gastrectomy (7.4%), Whipple procedure (12.8%), sleeve gastrectomy (7.2%), or gastric bypass surgery (24.7%); obscure gastrointestinal bleeding was the most frequent (85.1%) indication. SB completion rate was 84.3%. One capsule retention in the SB was noted (adverse event rate 0.4%). Median SB transit time was 286 min (interquartile range [235;387]). Cleanliness was rated adequate in 92.1% of procedures.

After exclusion of lesions found at the upper anastomotic site, the DY was 44.5%, with vascular lesions in 47.3% of positive cases, followed by inflammatory/ulcerated lesions (21.6%), polyps/masses (4.8%), and blood (3.1%). Patients with a history of bariatric surgery had significantly lower DY of P1 or P2 lesions (28.2%) compared to those with non-bariatric gastric surgeries (51.2%) ( $p<0.001$ ). In the subgroup of patients with partial gastrectomy, those with Billroth II operation had a higher DY of P1 or P2 lesions (54.7%) compared to those with Billroth I surgery (40.6%) ( $p=0.17$ ).

**Conclusions** SB-CE seems feasible and safe in selected patients with a history of major gastric surgery, and it comes with a high DY.

## OP7 RHEMITT SCORE: PREDICTING THE RISK OF REBLEEDING FOR PATIENTS WITH MID-GASTROINTESTINAL BLEEDING SUBMITTED TO SMALL BOWEL CAPSULE ENDOSCOPY: A PROSPECTIVE VALIDATION

**Authors** de Sousa Magalhães R<sup>1,2,3</sup>, Sousa-Pinto B<sup>4,5</sup>, Cúrdia Gonçalves T<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Moreira MJ<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital Senhora da Oliveira – Guimarães, Gastroenterology, Guimarães, Portugal; 2 University of Minho, Life and Health Sciences Research Institute (ICVS), School of Medicine, Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Guimarães/Braga, Portugal; 4 University of Porto, MEDCIDS – Community Medicine, Information and Health Decision Sciences, Faculty of Medicine, Porto, Portugal; 5 University of Porto, CINTESIS – Center for Health Technology and Services Research, Porto, Portugal

**DOI** 10.1055/s-0041-1724267

**Citation:** de Sousa Magalhães R, Sousa-Pinto B, Cúrdia Gonçalves T et al. OP7

RHEMITT SCORE: PREDICTING THE RISK OF REBLEEDING FOR PATIENTS WITH MID-GASTROINTESTINAL BLEEDING SUBMITTED TO SMALL BOWEL CAPSULE ENDOSCOPY: A PROSPECTIVE VALIDATION. *Endoscopy* 2021; 53: S7.

**Aims** Mid gastrointestinal rebleeding rates are high, but difficult to predict. We created the first score to accurately predict the individual risk of small bowel rebleeding after capsule endoscopy (SBCE) – the RHEMITT score (Renal disease; Heart failure; Endoscopic findings; Major bleeding; Incomplete SBCE; Tobacco; Treatment by endoscopy), subdividing patients in 3 subgroups according to the risk of rebleeding: low risk (0-3 points); intermediate risk (4-10 points) and high risk (11-18 points).

Prospective internal validation of the RHEMITT score.

**Methods** Cohort of consecutive patients submitted to SBCE and followed prospectively, during at least 12 months, since 2017 until 2020. The follow up consisted in trimestral appointments and laboratorial tests during the first-year. Rebleeding was defined as overt bleeding event (melaena or haematochezia) or a haemoglobin decrease of at least 2 g/dL. The RHEMITT score was calculated for each patient and the rebleeding rates compared. The homogeneity of the population was assessed by a univariate analysis including the same variables assessed in the initial score's manuscript. The performance of the score was tested by calculating the area under curve (AUC) of the ROC curve towards the outcome rebleeding.

**Results** We included 162 patients, 102 (62.9%) female gender, with a mean age of 64 years old. The sensitivities and specificities of the score grades for predicting the occurrence of rebleeding were as following: for low risk patients, 0% [0-10%] and 28.8% [21.1-36.5%]; for intermediate risk patients, 23.3% [8.2-38.4%] and 72% [64.3-79.7%]; for high risk patients, 76.7% [61.6-91.8%] and 99.2% [97.7-100%], corresponding to an AUC of the ROC of 0.988 (95% CI=0.975-1.000;  $p < 0.001$ ).

**Conclusions** The RHEMITT score performed with excellent discriminative power in predicting rebleeding risk. The score is ready for daily practice, being a promising tool in identifying patients at a higher risk of rebleeding, that would benefit for a stricter surveillance.

## OP8V BALLOON DILATATION OF PROXIMAL SMALL BOWEL CROHN'S DISEASE STRICTURES DURING ANTEGRADE DOUBLE BALLOON ENTEROSCOPY

**Authors** O'Hara F<sup>1</sup>, Seminov S<sup>1</sup>, McNamara D<sup>1</sup>

**Institute** 1 Tallaght University Hospital, Gastroenterology Department, Dublin, Ireland

**DOI** 10.1055/s-0041-1724268

**Citation:** O'Hara F, Seminov S, McNamara D. OP8V BALLOON DILATATION OF PROXIMAL SMALL BOWEL CROHN'S DISEASE STRICTURES DURING ANTEGRADE DOUBLE BALLOON ENTEROSCOPY. *Endoscopy* 2021; 53: S8.

Endoscopic dilation +/- steroid injection is a recognised treatment for short, isolated, distal ileal and anastomotic Crohn's strictures. The evidence base and clinical predictors of response are not well established for proximal jejunal strictures.

We present a series of 3 patients with multifocal stricturing jejunal disease who underwent successful combined pneumatic dilatation and intra-lesional steroid injection of Crohn's jejunal strictures via device assisted enteroscopy.

Our Case series suggest proximal jejunal stricture dilation with intra-lesional steroid injection can be safe and effective in selected patients. Further studies are warranted to establish selection criteria and to identify predictors of response.

## OP9 SMALL BOWEL CAPSULE ENDOSCOPY, SYSTEMATIC REVIEW AND PAIRWISE META-ANALYSIS: THE KEY POINT IS THE TIMING

**Authors** Marmo C<sup>1</sup>, Tortora A<sup>1</sup>, Costamagna G<sup>1</sup>, Riccioni M<sup>1</sup>

**Institute** 1 Fondazione Policlinico Universitario Agostino Gemelli IRCCS - Università Cattolica del Sacro Cuore, Rome, Italy

**DOI** 10.1055/s-0041-1724269

**Citation:** Marmo C, Tortora A, Costamagna G et al. OP9 SMALL BOWEL

CAPSULE ENDOSCOPY, SYSTEMATIC REVIEW AND PAIRWISE META-ANALYSIS: THE KEY POINT IS THE TIMING. *Endoscopy* 2021; 53: S8.

**Aims** The aim of the current study is to evaluate the preparation type and the modality of administration to provide an adequate small bowel cleansing in patients undergoing small bowel capsule endoscopy.

**Methods** From inception to October 2020, we searched within Scopus, Cochrane database, MEDLINE/PubMed, ISI web of Science. All references from the reviewed articles were searched for any other articles that may have been missed. Full text Randomized Clinical Trials (RCT) comparing small bowel preparation prior to capsule endoscopy, for any indication, were included in the analysis. We compared the types of preparation using as reference the fasting preparation type.

Random effect model was used for pooling the summary effect, the principal covariates evaluated were type of preparation, modality of administration and type of study.

**Results** Starting from 202 studies initially evaluated, after the screening process, a total of 13 articles comparing different type of small bowel preparation for capsule endoscopy were included in the analysis. Overall, we evaluated 1513 patients in 13 studies and 15 treatment arms. Male were 755 (49.9%) and mean age 52,6 (C.I. 95% 49,5-55,7). Fasting VS overall purgative preparations pooled RD was -0.18 (95%CI -0,27 to -0,09,  $p$ :). Sub-grouping on the basis of administration modality (all day before, split and all same day): fasting VS all day before RD -0,16 (95% C.I. -0,279 to -0,041  $p$ =0,008); fasting VS split RD -0,14 (95% C.I. -0,46 to 0,17  $p$ =0,378) and fasting VS all same day RD -0,30 (95% C.I. -0,53 to -0,07  $p$ =0,009), fasting VS after capsule ingestion RD -0,41 (95% C.I. -0,62 to -0,20  $p$ =0,000).

**Conclusions** The administration of purgative solutions prior to small bowel capsule endoscopy ameliorated the small bowel cleansing. However, the most relevant gain was obtained when the preparation was assumed all the same day or, better, after the ingestion of capsule.

Modality of administration	RD	95% C.I.	p
fasting VS all day before	-0,16	-0,279 to -0,041	$p$ = 0,008
fasting VS split	-0,14	-0,46 to 0,17	$p$ = 0,378
fasting VS all same day	-0,30	-0,53 to -0,07	$p$ = 0,009
fasting VS after capsule ingestion	-0,41	-0,62 to -0,20	$p$ = 0,000

Thursday, 25 March 2021

AI in the esophagus: A clinical challenge

11:00 – 11:45

Room 6

## OP10 DEEP NEURAL NETWORK FOR THE LOCALISATION OF EARLY NEOPLASIA IN BARRETT'S OESOPHAGUS WITH TARGETED BIOPSIES

**Authors** Hussein M<sup>1,2</sup>, Puyal JG-B<sup>1,3</sup>, Lines D<sup>3</sup>, Sehgal V<sup>2</sup>, Toth D<sup>3</sup>,

Everson M<sup>1</sup>, Lipman G<sup>1</sup>, Ahmad O<sup>1</sup>, Kader R<sup>1</sup>, Esteban JM<sup>4</sup>, Bisschops R<sup>5</sup>,

Banks M<sup>2</sup>, Haefner M<sup>6</sup>, Mountney P<sup>3</sup>, Stoyanov D<sup>1</sup>, Lovat L<sup>1</sup>, Haidry R<sup>2</sup>

**Institute** 1 University College London, London, United Kingdom; 2 University

College London Hospital, London, United Kingdom; 3 Odin Vision, London,

United Kingdom; 4 Hospital Clinico San Carlos, Madrid, United Kingdom; 5 UZ

Leuven, Leuven, Belgium; 6 Bolzano Central Hospital, Bolzano, Italy

**DOI** 10.1055/s-0041-1724270

**Citation:** Hussein M, Puyal JG-B, Lines D et al. OP10 DEEP NEURAL NETWORK

FOR THE LOCALISATION OF EARLY NEOPLASIA IN BARRETT'S OESOPHAGUS WITH TARGETED BIOPSIES. *Endoscopy* 2021; 53: S8.

**Aims** To develop a deep neural network to diagnose and localise dysplasia in Barrett's oesophagus (BE).

**Methods** Videos were collected in high definition white light/optical chromoendoscopy with i-scan (Pentax Hoya, Japan) imaging modes in patients with dysplastic BE lesions (high grade dysplasia (HGD)/intramucosal adenocarcinoma) and non-dysplastic BE (NDBE). Videos were annotated for presence/absence of dysplasia. These were histologically confirmed. We trained a convolutional neural network with a Resnet101 architecture to classify images using annotated video frames. We trained a second network with a FCNResnet50 architecture with the same case split using expert delineations (published dysplasia detection rate of >90%) on high quality images to generate targeted biopsy predictions.

**Results** 124 patients with a video of BE assessment (68 HGD/Intramucosal cancer and 56 controls (54 NDBE, 2 normal oesophagus)) were included. Cases were divided into three independent training, validation and testing groups. The network was trained using 148,936 frames. This was tested on 6 high quality images per case (168 iscan-1 images from 28 dysplastic patients, 102 iscan-1 images from 17 NDBE patients).

The neural network classified BE dysplasia with a sensitivity of 90.5%, specificity of 80.4%, area under the ROC was 93.5%. Heat maps generated from the classifier algorithm overlapped with at least one expert ground truth delineation in 98% of the test set images where a true positive diagnosis of dysplasia was made. A maximum of two targeted biopsies were predicted by the second neural network for all 28 dysplastic patients. 91% of biopsies were correctly within the union of expert delineation in all images.

**Conclusions** Our neural networks can classify/localise dysplastic BE with targeted biopsies with high accuracy matching experts. The classifier was created using video annotations minimising selection bias. This can potentially minimise need for Seattle protocol biopsies, save costs and time maximising endoscopy capacity.

## OP11 ARTIFICIAL INTELLIGENCE (AI) VS ENDOSCOPISTS IN DETECTION OF BARRETT'S NEOPLASIA

**Authors** Abdelrahim M<sup>1</sup>, Saikou M<sup>2</sup>, Maeda N<sup>3</sup>, Hossain E<sup>1</sup>, al-Kandari A<sup>4</sup>, Para-Blanco A<sup>5</sup>, Yague AS<sup>6</sup>, Coron E<sup>7</sup>, Repici A<sup>8</sup>, Bhandari P<sup>1</sup>

**Institute** 1 Queen Alexandra Hospital, Portsmouth, United Kingdom; 2 Biometrics Research Laboratories, NEC, Kanagawa, Japan; 3 NEC Corporation, Tokyo, Japan; 4 Al Jahra Hospital, Kuwait, Kuwait; 5 Nottingham University Hospitals, Nottingham, United Kingdom; 6 Hospital Costa del Sol, Marbella, Spain; 7 Centre Hospitalier Universitaire & Faculté de Médecine de Nantes, Nantes, France; 8 Humanitas Clinical and Research Center, Milan, Italy  
DOI 10.1055/s-0041-1724271

**Citation:** Abdelrahim M, Saikou M, Maeda N et al. OP11 ARTIFICIAL INTELLIGENCE (AI) VS ENDOSCOPISTS IN DETECTION OF BARRETT'S NEOPLASIA. *Endoscopy* 2021; 53: S9.

**Aims** We aimed to develop and validate an AI algorithm based on deep neural networks for detection of Barrett's neoplasia, and compare its performance to endoscopists.

**Methods** The AI algorithm, based on VGG16 architecture, was trained and validated on 65,545 images (96 videos) of neoplastic Barrett's and 101,534 images (65 videos) of non-neoplastic Barrett's. Ground truth was histological diagnosis and expert review. The algorithm was trained to detect and classify images and videos as neoplastic or non-neoplastic. For testing, sample size was calculated using extended McNemar's test at 90% power and 5% significance level, assuming 91% sensitivity of the AI system (based on validation dataset and pilot study) and endoscopists sensitivity of 68%. Primary end point was sensitivity of AI diagnosis of Barrett's neoplasia. We asked 6 endoscopists who regularly perform endoscopic surveillance and therapy of Barrett's neoplasia to review same videos and classify them into neoplastic or non-neoplastic. We

collected and compared metrics on processing speed, sensitivity, specificity, NPV and accuracy.

**Results** We included 75 (32 neoplastic and 43 non-neoplastic) Barrett's videos. In the neoplastic videos, 27 (84.3%) were flat IIa/b lesions. The AI system diagnosed Barrett's neoplasia with sensitivity, specificity, NPV and accuracy of 96.88%, 90.70%, 97.50% and 93.33% respectively. The average sensitivity, specificity, NPV and accuracy of endoscopists were 72.95%, 83.89%, 78.29% and 78.47% respectively. AI system's sensitivity, specificity, NPV and accuracy were significantly better than endoscopists (P<0.0001). Processing speed of the AI system was 5ms/image. Table (1) summarizes the results.

**Conclusions** Our data demonstrates the feasibility of AI-based neoplasia detection during Barrett's assessment. AI was better than endoscopists in detection of Barrett's neoplasia on recorded videos. The NPV of AI (97.5%) is very close to the 98% target set by PIVI. This needs to be validated during real time endoscopic assessment.

► **Tab. (1):** Performance of deep learning algorithm in detection of Barrett's neoplasia compared to endoscopists (n = 75).

	Sensitivity	Specificity	NPV	Accuracy
AI	96.88%	90.70%	97.50%	93.33%
Endoscopists (n = 6)	72.95%	83.89%	78.29%	78.47%
P value	P<0.0001	P<0.0001	P<0.0001	P<0.0001

## OP12 A SYSTEMATIC REVIEW AND META-ANALYSIS ON ENDOSCOPISTS' ACCURACY FOR DETECTING UPPER GASTROINTESTINAL NEOPLASIA IN ARTIFICIAL INTELLIGENCE STUDIES: WHAT IS THE GOLD-STANDARD?

**Authors** Frazzoni L<sup>1</sup>, Arribas J<sup>2</sup>, Antonelli G<sup>3,4</sup>, Hassan C<sup>3</sup>, Fuccio L<sup>1</sup>, Dinis-Ribeiro M<sup>2</sup>

**Institute** 1 University of Bologna, Department of Medical and Surgical Sciences, Bologna, Italy; 2 University of Porto, CIDES/CINTESIS, Faculty of Medicine, Porto, Portugal; 3 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 4 Sapienza University of Rome, Department of Translational and Precision Medicine, Rome, Italy  
DOI 10.1055/s-0041-1724272

**Citation:** Frazzoni L, Arribas J, Antonelli G et al. OP12 A SYSTEMATIC REVIEW AND META-ANALYSIS ON ENDOSCOPISTS' ACCURACY FOR DETECTING UPPER GASTROINTESTINAL NEOPLASIA IN ARTIFICIAL INTELLIGENCE STUDIES: WHAT IS THE GOLD-STANDARD?. *Endoscopy* 2021; 53: S9.

**Aims** Estimates on miss rates for upper gastrointestinal neoplasia (UGIN), i.e. approximately 10% mainly relies on registry data or old studies. Significant technological breakthroughs and quality parameters have been issued thereafter. We aimed at assessing endoscopists' accuracy for detecting UGIN within artificial intelligence (AI) studies.

**Methods** Broad literature search among databases (PubMed/MEDLINE, EMBASE, Scopus) up to July 2020 was performed to identify full articles evaluating endoscopists' diagnostic accuracy for UGIN compared to AI systems, based on "ex-vivo" images with confirmed histology. Main outcomes were endoscopists' pooled sensitivity, specificity, positive (PPV) and negative (NPV) predictive values for UGIN. We computed pooled proportion rates, summary



receiving operating characteristic (SROC) curves with area under the curves (AUCs), and subgroup analyses.

**Results** 8 studies published from 2016 to 2020, encompassing 148 endoscopists and 5,439 images were included for quantitative synthesis; 3 studies assessed oesophageal squamous cell neoplasia (ESCN), 5 BERN and 2 GAC. Endoscopists' diagnostic accuracy was significantly higher for GAC detection (AUC 0.95, CI 0.93-0.98) than ESCN detection (AUC 0.90, CI 0.88-0.92) than BERN detection (AUC 0.86, CI 0.84-0.88). Overall, the false negative rate was 18% with sensitivity 82% (CI 80-84%) and NPV 85% (CI 83-87%) for UGIN detection, at the pooled 44% (CI 42-45%) prevalence of UGIN. Sensitivity was significantly higher for Asian vs. European endoscopists (87%, CI 84-89% vs. 75%, CI 72-78%), and for experienced vs. inexperienced endoscopists (85%, CI 83-87% vs. 71%, CI 67-75%). Study quality was high with some risk of selection and spectrum bias. Endoscopists' performance might have been hampered by the use of still images. No significant publication bias was found.

**Conclusions** We confirm that endoscopists' accuracy for detecting UGIN is suboptimal. Technological aids, such as AI, might be warranted for inexperienced and European endoscopists.

### OP13 COMPUTER AIDED DIAGNOSIS FOR THE CHARACTERISATION OF DYSPLASIA IN BARRETT'S OESOPHAGUS WITH MAGNIFICATION ENDOSCOPY

**Authors** Hussein M<sup>1,2</sup>, Lines D<sup>3</sup>, Puyal JGB<sup>1,4</sup>, Bowman N<sup>1</sup>, Sehgal V<sup>2</sup>, Toth D<sup>3</sup>, Everson M<sup>1</sup>, Ahmad O<sup>1</sup>, Kader R<sup>1</sup>, Esteban JM<sup>5</sup>, Bisschops R<sup>6</sup>, Banks M<sup>2</sup>, Haefner M<sup>7</sup>, Mountney P<sup>3</sup>, Stoyanov D<sup>1</sup>, Lovat L<sup>1</sup>, Haidry R<sup>2</sup>

**Institute** 1 University College London, London, United Kingdom; 2 University College London Hospital, London, United Kingdom; 3 Odin Vision, London, United Kingdom; 4 Odin Vision, London, United Kingdom; 5 Hospital Clinico San Carlos, Madrid, United Kingdom; 6 UZ Leuven, Leuven, Belgium; 7 Bolzano Central Hospital, Bolzano, Italy  
DOI 10.1055/s-0041-1724273

**Citation:** Hussein M, Lines D, Puyal JGB et al. OP13 COMPUTER AIDED DIAGNOSIS FOR THE CHARACTERISATION OF DYSPLASIA IN BARRETT'S OESOPHAGUS WITH MAGNIFICATION ENDOSCOPY. *Endoscopy* 2021; 53: S10.

**Aims** There have been significant advances in magnification endoscopic imaging of Barrett's oesophagus (BE). Magnification endoscopy of mucosal and vascular patterns arising in BE can help predict non-dysplastic from dysplastic mucosa. This can inform sampling and guide endoscopic eradication therapy. We aimed to develop a computer aided detection system that can support the diagnosis of BE dysplasia on magnification endoscopy.

**Methods** Videos were collected in high definition magnification white light and virtual chromoendoscopy with i-scan (Pentax Hoya, Japan) imaging modes in patients with dysplastic lesions in BE (high grade dysplasia (HGD)/intra-mucosal adenocarcinoma) and patients with non-dysplastic BE (NDBE). Endoscopic resection margins/targeted biopsy site histology served as the ground truth for dysplasia in videos. Videos were annotated for definite visual presence of dysplasia. We trained a convolutional neural network with a Resnet101 architecture to classify video frames into dysplastic or non-dysplastic using randomly selected frames from annotated videos.

**Results** 58 patients each with high quality video frames of magnification areas of BE (34 dysplasia, 24 NDBE) were included. Performance was evaluated using a 15-fold cross validation methodology. 76,496 (47,438 dysplasia, 29,058 NDBE) magnification video frames were analysed by the neural network. All dysplastic and non-dysplastic frames were included.

We used an exponentially weighted moving average of consecutive frames to make a diagnosis of dysplasia. The network achieved a per frame sensitivity of 82%, specificity of 82%, and Area under the ROC of 90%. The mean assessment speed per frame was 0.0135 seconds (SD, ± 0.006).

**Conclusions** The neural network can characterise BE dysplasia with high accuracy and speed on magnification endoscopic images. Whole video frames were used to train and test the data moving it towards real time automated

diagnosis. This will potentially aid endoscopists to make key decisions regarding endoscopic sampling and resection in BE during the same endoscopic session.

### OP14 ENDOSCOPIC DIAGNOSIS OF EOSINOPHILIC ESOPHAGITIS USING A DEEP LEARNING ALGORITHM

**Authors** Römmele C<sup>1</sup>, Mendel R<sup>2</sup>, Rauber D<sup>2</sup>, Rückert T<sup>2</sup>, Byrne MF<sup>3</sup>, Palm C<sup>2</sup>, Messmann H<sup>1</sup>, Ebigbo A<sup>1</sup>

**Institute** 1 Universitätsklinikum Augsburg, Augsburg, Germany; 2 Ostbayerische Technische Hochschule (OTH) Regensburg, Regensburg, Germany; 3 University of British Columbia, Vancouver, Canada  
DOI 10.1055/s-0041-1724274

**Citation:** Römmele C, Mendel R, Rauber D et al. OP14 ENDOSCOPIC DIAGNOSIS OF EOSINOPHILIC ESOPHAGITIS USING A DEEP LEARNING ALGORITHM. *Endoscopy* 2021; 53: S10.

**Aims** Eosinophilic esophagitis (EoE) is easily missed during endoscopy, either because physicians are not familiar with its endoscopic features or the morphologic changes are too subtle. In this preliminary paper, we present the first attempt to detect EoE in endoscopic white light (WL) images using a deep learning network (*EoE-AI*).

**Methods** 401 WL images of eosinophilic esophagitis and 871 WL images of normal esophageal mucosa were evaluated. All images were assessed for the Endoscopic Reference score (EREFs) (edema, rings, exudates, furrows, strictures). Images with strictures were excluded. EoE was defined as the presence of at least 15 eosinophils per high power field on biopsy. A convolutional neural network based on the ResNet architecture with several five-fold cross-validation runs was used. Adding auxiliary EREFs-classification branches to the neural network allowed the inclusion of the scores as optimization criteria during training. *EoE-AI* was evaluated for sensitivity, specificity, and F1-score. In addition, two human endoscopists evaluated the images.

**Results** *EoE-AI* showed a mean sensitivity, specificity, and F1 of 0.759, 0.976, and 0.834 respectively, averaged over the five distinct cross-validation runs. With the EREFs-augmented architecture, a mean sensitivity, specificity, and F1-score of 0.848, 0.945, and 0.861 could be demonstrated respectively. In comparison, the two human endoscopists had an average sensitivity, specificity, and F1-score of 0.718, 0.958, and 0.793.

**Conclusions** To the best of our knowledge, this is the first application of deep learning to endoscopic images of EoE which were also assessed after augmentation with the EREFs-score. The next step is the evaluation of *EoE-AI* using an external dataset. We then plan to assess the *EoE-AI* tool on endoscopic videos, and also in real-time. This preliminary work is encouraging regarding the ability for AI to enhance physician detection of EoE, and potentially to do a true "optical biopsy" but more work is needed.

Thursday, 25 March 2021

12:00 – 12:45

Novel concepts in endoscopic repair of GI defects

Room 5

### OP15V SUCCESSFUL ENDOSCOPIC CLOSURE OF A RESIDUAL FISTULA AFTER ESOPHAGEAL ATRESIA REPAIR IN A 5-YEAR CHILD USING ESD OF THE SURROUNDING MUCOSA

**Authors** Pioche M<sup>1</sup>, Heissat S<sup>2</sup>, Lavaud G<sup>2</sup>

**Institute** 1 Hospices Civils de Lyon, Gastro et Endoscopie Pavillon L, Lyon, France; 2 Hospices Civils de Lyon, Gastro et Endoscopie, Pédiatrie, HFME, Lyon, France  
DOI 10.1055/s-0041-1724275

**Citation:** Pioche M, Heissat S, Lavaud G. OP15V SUCCESSFUL ENDOSCOPIC CLOSURE OF A RESIDUAL FISTULA AFTER ESOPHAGEAL ATRESIA REPAIR IN A 5-

YEAR CHILD USING ESD OF THE SURROUNDING MUCOSA. *Endoscopy* 2021; 53: S10.

We present the case of a patient of 5 years old, with history of type III atresia neonatal surgery, with chronic respiratory congestion and poor weight gain due to a large tracheoesophageal defect.

We performed endoscopic closure after prior endoscopic submucosal dissection of the surrounding mucosa as previously reported. ESD was assisted by clip-and-line traction and then we closed fistula using 4 clips anchored in submucosa.

The postoperative consequences were favorable. Opacification carried out 3 months later showed a tiny residual fistula. The patient underwent a second successful ESD of the surrounding mucosa with new closure of the resected area.

## OP16V ENDOSCOPIC SUBMUCOSAL FISTULA DIVERSION (SFED) AFTER SLEEVE GASTRECTOMY: ABOUT ONE CASE

**Authors** [Gonzalez JM<sup>1</sup>](#), [Barthet M<sup>1</sup>](#)

**Institute** 1 Aix-Marseille Univ, APHM, Hôpital Nord, Gastroenterology, Marseille, France

**DOI** [10.1055/s-0041-1724276](#)

**Citation:** Gonzalez JM, Barthet M. OP16V ENDOSCOPIC SUBMUCOSAL FISTULA DIVERSION (SFED) AFTER SLEEVE GASTRECTOMY: ABOUT ONE CASE. *Endoscopy* 2021; 53: S11.

We propose submucosal fistula endoscopic derivation (SFED) in the treatment of refractory fistula. She had two LSG in 2015 and 2019, complicated by fistula treated by endoscopic drainage. A long fistulous gastrocutaneous path was persisting, with a permanent purulent flow. The procedure was: creation of two 4 cm sub-mucosal tunnels in each part of the fistula's orifice; guidewire placement within both tunnels; covered SEMS placement into tunnels.

There were no complications. The flow stopped with a healing of the skin at 3 months. At 6 months, the endoscopy showed spontaneous migration with a closure of the primary orifice.

## OP17V REGENERATION OF EPITHELIALIZED DIGESTIVE CONTINUITY AFTER ENDOSCOPIC STENTING FOR CIRCUMFERENTIAL OESOGASTRIC JUNCTION NECROSIS FOLLOWING ROUX-EN-Y GASTRIC BYPASS

**Authors** [Ouazzani S<sup>1</sup>](#), [Lorenzo D<sup>1</sup>](#), [Fernandez M<sup>1</sup>](#), [Arvanitaki M<sup>1</sup>](#), [Blero D<sup>1</sup>](#), [El Moussaoui I<sup>2</sup>](#), [Closset J<sup>2</sup>](#), [Deviere J<sup>1</sup>](#), [Lemmers A<sup>1</sup>](#)

**Institute** 1 Université Libre de Bruxelles, Erasme Hospital, Department of Gastroenterology, Hepatopancreatology and digestive Oncology, Brussels, Belgium; 2 Université Libre de Bruxelles, Erasme Hospital, Department of Digestive Surgery, Brussels, Belgium

**DOI** [10.1055/s-0041-1724277](#)

**Citation:** Ouazzani S, Lorenzo D, Fernandez M et al. OP17V REGENERATION OF EPITHELIALIZED DIGESTIVE CONTINUITY AFTER ENDOSCOPIC STENTING FOR CIRCUMFERENTIAL OESOGASTRIC JUNCTION NECROSIS FOLLOWING ROUX-EN-Y GASTRIC BYPASS. *Endoscopy* 2021; 53: S11.

A patient who underwent a Roux-en-Y gastric by-pass after vertical gastropasty for morbid obesity, presented with sepsis associated to complete oesogastric junction disunion with loss of luminal continuity. After surgical concertation, an endoscopic treatment with metallic stent was attempted to restore luminal continuity. After two cycles of endoscopic stenting during a total of 7 months, a neo-epithelialized digestive continuity, connecting the oesophagus to the remnant stomach, was observed, with no more leakage and excellent clinical evolution. After three successful dilation sessions of two stent-related strictures, the patient is fine and eats normally, without any dysphagia or sepsis.

## OP18 ENDOSCOPIC CLIPS VERSUS ENDOSCOPIC SUTURE FOR MUCOSAL CLOSURE AFTER PER-ORAL ENDOSCOPIC PYLOROMYOTOMY: A PROSPECTIVE SINGLE-CENTER STUDY

**Authors** [Hustak R<sup>1</sup>](#), [Vackova Z<sup>1</sup>](#), [Krajcivova J<sup>1</sup>](#), [Spicak J<sup>1</sup>](#), [Martinek J<sup>1</sup>](#)

**Institute** 1 Institute for Clinical and Experimental Medicine, Hepatogastroenterology, Prague, Czech Republic

**DOI** [10.1055/s-0041-1724278](#)

**Citation:** Hustak R, Vackova Z, Krajcivova J et al. OP18 ENDOSCOPIC CLIPS VERSUS ENDOSCOPIC SUTURE FOR MUCOSAL CLOSURE AFTER PER-ORAL ENDOSCOPIC PYLOROMYOTOMY: A PROSPECTIVE SINGLE-CENTER STUDY. *Endoscopy* 2021; 53: S11.

**Aims** G-POEM is an emerging method for treatment of gastroparesis (GP). Safe mucosal closure is necessary to avoid adverse events. The aim of this prospective study was to compare the effectivity of two closure methods: clips and endoscopic suturing (ES) in patients undergoing G-POEM.

**Methods** For a prospective study (NCT:03679104) were enrolled consecutive patients eligible for RCT (NCT 03356067) and who met exclusion criteria for RCT (Tab.1). The closure method was assigned at the discretion of an endoscopist prior to the procedure. The main outcome was the proportion of subjects with successful closure. Unsuccessful closure was defined as a need for a rescue method, or a need for an additional intervention or incomplete closure related adverse events. Secondary outcomes were easiness of closure (measured by a visual analogue scale; 0=impossible, 10=very easy, scored by endoscopist and nurse) and closure time.

**Results** A total of 40 patients [21 female; mean age 47.5;(20–74)] have been included; 20 received ES and 20 clips [mean number of clips 6;range(4–19)]. All patients with ES had successful closure. One patient with clips needed a rescue method (KING closure) and another needed additional clipping because of a leak on POD1. The remaining 18 patients (90%) had a successful closure with clips. Closure with clips was quicker (mean closure time, range 9.8(4–20) vs 14.1(5–21)min;p=0.002). Endoscopist assessed closure with ES easier compared to clips [mean VAS, range: 7.5(3–10)(ES) vs. 6.9(3–10)(clips); p=0.16], nurses assessed easiness of both closure methods as comparable (VAS 8(4–10)(ES) vs 8.3(5–10)(clips);p=0.34).

**Conclusions** Endoscopic suturing system may be more reliable than clipping for mucosal closure in patients undergoing G-POEM. Besides clips, centers performing G-POEM should have an alternative (rescue) closure method. (Supported by grant 17-28797A).

Table 1	Clips	Suturing system
No of patients (non RCT/RCT)	7/13	5/15
Gender (M/F)	8/12	11/9
Age (mean, SD)	51.1 (±13.2)	44 (±14.8)
Etiology of GP (dGP/iGP/pGP)	8/5/7	7/6/7

## OP19V BOERHAAVE SYNDROME TREATMENT WITH A FULLY-COVERED METALLIC STENT

**Authors** [Bordalo Ferreira F<sup>1</sup>](#), [Correia F<sup>1</sup>](#), [Ferreira Cardoso M<sup>1</sup>](#), [Oliveira AM<sup>1</sup>](#), [Carvalho Lourenço L<sup>1</sup>](#), [Martins A<sup>1</sup>](#)

**Institute** 1 Hospital Professor Doutor Fernando Fonseca, Gastroenterologia, Amadora, Portugal

**DOI** [10.1055/s-0041-1724279](#)

**Citation:** Bordalo Ferreira F, Correia F, Ferreira Cardoso M et al. OP19V

BOERHAAVE SYNDROME TREATMENT WITH A FULLY-COVERED METALLIC STENT. *Endoscopy* 2021; 53: S11.

A 32-year-old male presented with posterior thoracic pain shortly after choking with water.

His initial clinical observation was unremarkable.

Blood results showed leukocytosis  $21.2000/\text{mm}^3$  and normal C-reactive protein. Thoracic computed tomography (CT) revealed a small pneumomediastinum originating from a rupture of the mid-distal left esophageal wall, consistent with *Boerhaave* syndrome. Broad-spectrum antibiotics were started.

Upper endoscopy showed a 2-centimetre wall defect in the mid-distal esophagus. A self-expandable fully-covered metallic stent 23x125mm was placed and fixed proximally with metallic clips.

The patient had a favorable clinical evolution. A CT performed on day 5 showed no signs of mediastinal air or collections.

Thursday, 25 March 2021

12:00 – 12:45

Infection Risk and Endoscopy Training in the Era of COVID-19

Room 6

## OP20 COVID-19 IN ENDOSCOPY: HOW LIKELY IS TRANSMISSION OF INFECTION? RESULTS FROM AN INTERNATIONAL, MULTICENTER STUDY

**Authors** Papanikolaou I<sup>1</sup>, Chatzidakis A<sup>1</sup>, Miltiadou K<sup>1</sup>, Facciorusso A<sup>2</sup>, Crinò SF<sup>3</sup>, Gkolafakis P<sup>4</sup>, Deriban G<sup>5</sup>, Tadic M<sup>6</sup>, Hauser G<sup>7</sup>, Vezakis A<sup>8</sup>, Jovanovic I<sup>9</sup>, Muscatello N<sup>2</sup>, Meneghetti A<sup>3</sup>, Tziatzios G<sup>1</sup>, Stardelova K<sup>5</sup>, Lacković A<sup>7</sup>, Bourou MZ<sup>8</sup>, Djuranovic S<sup>9</sup>, Triantafyllou K<sup>1</sup>

**Institute** 1 2nd Department of Internal Medicine-Propaedeutic, National and Kapodistrian University of Athens, "Attikon" University General Hospital, Athens, Hepatogastroenterology Unit, Athens, Greece; 2 University of Foggia AOU, Foggia, Italy, Foggia, Italy; 3 University Hospital of Verona, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 4 Institut Jules Bordet-Université Libre de Bruxelles (ULB), Department of Medical Oncology, Brussels, Belgium; 5 Medical Faculty, University "Ss. Cyril and Methodius" Skopje, Republic of North Macedonia, University Clinic of Gastroenterohepatology, Skopje, North Macedonia, The Republic of; 6 Clinical Hospital Dubrava, Department of Gastroenterology, Zagreb, Croatia; 7 Clinical Hospital Center Rijeka, Faculty of Medicine, University of Rijeka, Rijeka, Croatia; 8 Aretaieio Hospital, School of Medicine, National and Kapodistrian University of Athens, 2nd Department of Surgery, Athens, Greece; 9 Clinical Center of Serbia, University of Belgrade Faculty of Medicine, Clinic for Gastroenterology and Hepatology, Beograd, Serbia

DOI 10.1055/s-0041-1724280

**Citation:** Papanikolaou I, Chatzidakis A, Miltiadou K et al. OP20 COVID-19 IN ENDOSCOPY: HOW LIKELY IS TRANSMISSION OF INFECTION? RESULTS FROM AN INTERNATIONAL, MULTICENTER STUDY. *Endoscopy* 2021; 53: S12.

**Aims** COVID-19 has significantly affected endoscopic practice, as GI-endoscopy is considered a risky procedure for transmission of infection towards personnel of endoscopy units (PEU) and patients. ESGE recommended reduction of non-emergency endoscopies, personal protection measures (PPM) and post-endoscopy calls to patients, to check their COVID-19 status. This study aimed to assess the impact of COVID-19 on endoscopy during the first European lockdown (March-May 2020).

**Methods** Demographic data, patients' COVID-19 status before and after endoscopy, clinical data for those developing COVID-19, implementation of PPM, number and type of overall endoscopies, as well as information for possible COVID-19 infection of patients and PEU were retrospectively recorded.

**Results** 1267 endoscopies (EGDs:46%, colonoscopies/rectosigmoidoscopies:35%, ERCPs:14%, EUS:4%) were performed in 1222 patients (mean

age:63.4 y.o., males:59%, inpatients:44%) in 9 centers (6 countries). Pre-endoscopic testing for COVID-19 was available for 326 (26.7%) patients; 87(7%) tested positive. 7-14 days after endoscopy, 1204 patients were contacted by telephone. Among 1135 pre-endoscopically COVID-19 negative patients 254 were tested post-endoscopy and 8 were found positive (0.6% of the total), with 6, 1 and 1 cases turning positive after EGD, colonoscopy and EUS, respectively. Of these, 4 were considered "obviously" irrelevant to endoscopy, but for the other 4 (3 post-EGD and 1 post-colonoscopy) the route of transmission remained obscure. Appropriate PPM were implemented and adhered to in all centers; moreover, a significant reduction in the number of endoscopies was noted in all centers after March 2020. Finally, data regarding 163 PEU was recorded; 5 (3%) tested positive during the study period. In 4 of them (2% of the total), the infection was considered to be associated to their work environment.

**Conclusions** COVID-19 transmission in endoscopic units is highly unlikely in a lockdown setting, provided endoscopies are reduced to emergency cases and appropriate PPM are implemented and followed.

## OP21 PROSPECTIVE EVALUATION OF THE FEASIBILITY OF STRUCTURED DISTANCE EUS TRAINING BY A VIRTUAL EUS COURSE WITH LIVE CASES

**Authors** Dhir V<sup>1</sup>, Shah R<sup>1</sup>, Udawat P<sup>1</sup>

**Institute** 1 IDL Care, SL Raheja Hospital, Department of Gastroenterology, Endoscopy and Hepatology, Mumbai, India

DOI 10.1055/s-0041-1724281

**Citation:** Dhir V, Shah R, Udawat P. OP21 PROSPECTIVE EVALUATION OF THE FEASIBILITY OF STRUCTURED DISTANCE EUS TRAINING BY A VIRTUAL EUS COURSE WITH LIVE CASES. *Endoscopy* 2021; 53: S12.

**Aims** To assess the feasibility of an virtual EUS training course with objective end points.

**Methods** 21 trainees were chosen from a group of applicants with certified expertise in endoscopy with regular access to linear echoendoscope. The training was imparted over virtual platform over 16 classes of 90 minute duration each, held over 3 months. The curriculum included endoscope handling, cleaning, disinfection and keyboard controls. This was followed by 12 classes on linear EUS anatomy of mediastinum, pancreatico-biliary region, rectum and EUS-guided FNA. Trainees were exposed to interventional EUS procedures done by international experts. Virtual screen included the endoscopists hand movements, and EUS image. Questions over technical issues were encouraged during the class. The assessment included a questionnaire and video assessment after each class and at the end. Study end points included a video assessment of satisfactory identification of 1. Sub-carinal space 2. Head of Pancreas 3. Common bile duct 4.body and tail of pancreas.

**Results** Out of 21, Pre-course, 4 trainees had done less than 50 cases, 14 trainees had exposure to EUS anatomy via short EUS training courses, and three trainees had no exposure other than videos and books. All 21 trainees attended all the classes or went through the video recording. All trainees returned the weekly questionnaire. 15 students sent a video for final assessment. At the end of the course, all students(100%) could maneuver the echoendoscope through the cricopharynx, esophagus, stomach and duodenum. The successful area identification rates were 12/15(80%) for sub-carinal space, 13/15(86.6%) head of pancreas, 10/15(66.6%) common bile duct, and 9/15(60%) tail of pancreas with no complication rates.

**Conclusions** Virtual EUS training course with live cases appears feasible with encouraging results. It allows the possibility of training large number of students across different countries. Further evaluation is needed especially of virtual assessment methods, and training benchmarks



## OP22 IMPACT OF COVID-19 OUTBREAK ON CLINICAL PRACTICE AND TRAINING OF YOUNG GASTROENTEROLOGISTS: A EUROPEAN SURVEY

**Authors** Marasco G<sup>1</sup>, Nardone OM<sup>2</sup>, Maida M<sup>3</sup>, Boskoski I<sup>4</sup>, Pastorelli L<sup>5</sup>, Scaldaferrri F<sup>6</sup> the Italian Association of Young Gastroenterologist and Endoscopist (AGGEI)

**Institute** 1 University of Bologna, Department of Medical and Surgical Sciences, Bologna, Italy; 2 University of Naples, Department of Clinical Medicine and Surgery, Naples, Italy; 3 S. Elia-Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 4 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Digestive Endoscopy Unit, Rome, Italy; 5 IRCCS Policlinico San Donato, Gastroenterology and Digestive Endoscopy Unit, Milan, Italy; 6 Fondazione Policlinico Universitario "A. Gemelli" IRCCS, Unità Operativa Complessa di Medicina Interna e Gastroenterologia, Dipartimento di Scienze Gastroenterologiche, Endocrino-Metaboliche e Nefro-Urologiche, Rome, Italy

**DOI** 10.1055/s-0041-1724282

**Citation:** Marasco G, Nardone OM, Maida M et al. OP22 IMPACT OF COVID-19 OUTBREAK ON CLINICAL PRACTICE AND TRAINING OF YOUNG GASTROENTEROLOGISTS: A EUROPEAN SURVEY. *Endoscopy* 2021; 53: S13.

**Aims** SARS-CoV-2 disease (COVID-19) is a major challenge for the healthcare system and physicians, imposing changes in daily clinical activity. We aimed to describe what European trainees and young gastroenterologists know about COVID-19 and identify training gaps to implement educational programs.

**Methods** A prospective web-based electronic survey was developed and distributed via e-mail to all members of the Italian Young Gastroenterologist and Endoscopist Association and to European representatives.

**Results** One hundred and ninety-seven subjects participated in the survey, of whom 14 (7.1%) were excluded. The majority were gastroenterologists in training (123, 67.7%) working in institutions with COVID-19 inpatients (159, 86.9%), aged ≤30 years (113, 61.8%). The activity of Gastroenterology Units was restricted to emergency visits and endoscopy, with reductions of activities of up to 90%. 84.5% of participants felt that the COVID-19 outbreak impacted on their training, due to unavailability of mentors (52.6%) and interruption of trainee's involvement (66.4%). Most participants referred absence of training on the use of personal protective equipment, oxygen ventilation systems and COVID-19 therapies.

**Conclusions** COVID-19 outbreak significantly impacted on gastroenterologists' clinical activity. The resources currently deployed are inadequate, and therefore educational interventions to address this gap are warranted in the next future.

## OP23 A CONTROL TELEPHONE CALL 14 DAYS AFTER ENDOSCOPY MAY NOT BE NECESSARY: ANECDOTAL DETECTION OF SARS-COV-2 INFECTION FOLLOWING AN ENDOSCOPIC PROCEDURE

**Authors** Bustamante-Balén M<sup>1</sup>, Gorriiz L<sup>1</sup>, Botella M<sup>1</sup>, Zuñiga Garcia VL<sup>1</sup>, Alonso N<sup>1</sup>, Argüello L<sup>1</sup>, Sanchez C<sup>1</sup>, García Campos M<sup>1</sup>, Pons-Beltrán V<sup>1</sup>

**Institute** 1 La Fe University Hospital, Gastrointestinal Endoscopy Unit, Valencia, Spain

**DOI** 10.1055/s-0041-1724283

**Citation:** Bustamante-Balén M, Gorriiz L, Botella M et al. OP23 A CONTROL TELEPHONE CALL 14 DAYS AFTER ENDOSCOPY MAY NOT BE NECESSARY: ANECDOTAL DETECTION OF SARS-COV-2 INFECTION FOLLOWING AN ENDOSCOPIC PROCEDURE. *Endoscopy* 2021; 53: S13.

**Aims** Some guidelines suggest to contact patients 14 days after the endoscopic procedure to evaluate their clinical situation, aiming to identify nosocomial SARS-CoV-2 infection. Our aim was to assess the clinical usefulness of this recommendation in an endoscopy unit during the first wave and the recovery phase of the COVID-19 pandemic.

**Methods** From March 2020 to July 2020 (first wave and recovery phase), every patient undergoing an endoscopic examination in our unit was contacted by phone 14 days after the procedure to check about the presence of COVID-19-related symptoms and to inquire about any new SARS-CoV-2 infection diagnosis using a predesigned questionnaire. Most of the patients had a preprocedure nasopharyngeal swab testing for SARS-CoV-2 (PCR), and all procedures were performed using a full PPE.

**Results** 424 inpatients (A) and 1187 outpatients (B) were included. Their main characteristics are summarized in ► **table 1**. Overall, 211 patients (13.1%) had symptoms that could be related to COVID-19. However, only two cases of SARS-CoV-2 positive PCR were detected (0.12%), one in each group. The +PCR in group A was during the first wave and the +PCR in group B was during the recovery phase. Positive group A patient was detected during her admission because complications of a multiple myeloma. Positive group B patient was detected because typical COVID-19 symptoms. No infection in healthcare workers related to these procedures was detected.

**Conclusions** 1) The rate of SARS-CoV-2 infection in patients undergoing an endoscopic examination is exceedingly low even during the acceleration phase; 2) The practical relevance of a control telephone call 14 days post-procedure is questionable.

► **Tab. 1** Patient's characteristics

	Inpatients (n = 424)	Outpatients (n = 1187)	P
First wave	150 (35.4%)	425 (35.8%)	NS
Upper GI examination	284 (67.0%)	549 (46.25%)	
Any possible COVID-19 symptom	67 (15.8%)	144 (12.1%)	NS
SARS-CoV-2 PCR positive	1 (0.2%)	1 (0.08%)	NS

## OP24 SAFETY OF GASTROINTESTINAL ENDOSCOPY DURING THE SECOND WAVE OF COVID-19 PANDEMIC: A SINGLE TERTIARY CENTRE PROSPECTIVE STUDY

**Authors** Aoko O<sup>1</sup>, Yousuf H<sup>1</sup>, Humphreys N<sup>1</sup>, O'Sullivan D<sup>1</sup>, Alenezi M<sup>1</sup>, Varley R<sup>1</sup>, Saeidi R<sup>1</sup>, Boland K<sup>1</sup>, Ryan J<sup>1</sup>, O'Toole A<sup>1</sup>, Harewood G<sup>1</sup>, Patchett S<sup>1</sup>, Cheriyan D<sup>1</sup>

**Institute** 1 Beaumont Hospital, Gastroenterology, Dublin, Ireland

**DOI** 10.1055/s-0041-1724284

**Citation:** Aoko O, Yousuf H, Humphreys N et al. OP24 SAFETY OF GASTROINTESTINAL ENDOSCOPY DURING THE SECOND WAVE OF COVID-19 PANDEMIC: A SINGLE TERTIARY CENTRE PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S13.

**Aims** To determine the incidence of COVID-19 transmission following outpatient gastrointestinal (GI) endoscopy during rising community incidence of COVID-19.

**Methods** This prospective study was conducted in a single tertiary referral centre in Dublin. Consecutive patients who attended the endoscopy unit for a procedure at time points in June, September, and October 2020 were included. Patients received a COVID-19 triage phone call 48 hours before their procedure. COVID-19 testing was not performed before outpatient endoscopy. Inpatients and any outpatient that failed telephone triage were excluded. Standard surgical masks, FFPs and PPE were used by endoscopy staff for all procedures.

Patients were contacted 14 days after the procedure to enquire if they had developed symptoms suggestive of COVID-19.

**Results** 522 patients who had GI endoscopy were enrolled, and 506(96.9%) were contacted for follow up. 163, 157, and 186 patients were included in June, September, and October respectively. The mean age was 55.6(range 16-92). Nationally there were 558, 7430, and 25476 new cases of COVID-19 in June, September, and October respectively.

In the two weeks post endoscopy, 7/506(1.3%) patients required testing for symptoms suggestive of COVID-19. All patients had negative results. No member of our endoscopy personnel contracted COVID-19 during the study period.

**Conclusions** This study highlights that the risk of COVID-19 transmission related to GI endoscopy is negligible despite dramatic escalation in community infection.

Thursday, 25 March 2021

14:00 – 14:45

ESD in the esophagus: Europe is here!

Room 5

### OP25 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR BARRETT'S RELATED NEOPLASIA IN THE NETHERLANDS: RESULTS OF A NATIONWIDE COHORT OF 130 CASES

**Authors** Verheij EPD<sup>1</sup>, van Munster SN<sup>1</sup>, Nieuwenhuis EA<sup>1</sup>, van Tilburg L<sup>2</sup>, Offerhaus J<sup>3</sup>, Meijer SL<sup>4</sup>, Brosens LAA<sup>3</sup>, Weusten BLAM<sup>5,6</sup>, Alkhalaf A<sup>7</sup>, Schenk BE<sup>7</sup>, Schoon EJ<sup>8</sup>, Curvers WL<sup>8</sup>, v/d Ven SEM<sup>2</sup>, Nagengast WB<sup>9</sup>, Houben MHMG<sup>10</sup>, Bergman JJGHM<sup>1</sup>, Koch AD<sup>2</sup>, Pouw RE<sup>1</sup>Dutch Barrett Expert Centers

**Institute** 1 Amsterdam University Medical Centers, Location VUmc, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Erasmus MC University Medical Center Rotterdam, Gastroenterology and Hepatology, Rotterdam, Netherlands; 3 University Medical Center Utrecht, Pathology, Utrecht, Netherlands; 4 Amsterdam University Medical Centers, Location AMC, Pathology, Amsterdam, Netherlands; 5 University Medical Center Utrecht, Gastroenterology and Hepatology, Utrecht, Netherlands; 6 Sint Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 7 Isala Clinics, Gastroenterology and Hepatology, Zwolle, Netherlands; 8 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 9 University Medical Center Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 10 Haga Teaching Hospital, Gastroenterology and Hepatology, Den Haag, Netherlands

DOI 10.1055/s-0041-1724285

**Citation:** Verheij EPD, van Munster SN, Nieuwenhuis EA et al. OP25 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR BARRETT'S RELATED NEOPLASIA IN THE NETHERLANDS: RESULTS OF A NATIONWIDE COHORT OF 130 CASES. *Endoscopy* 2021; 53: S14.

**Aims** The use of endoscopic submucosal dissection (ESD) is gradually expanding for treatment of neoplasia in Barrett's esophagus (BE). We aimed to report the outcomes of all ESDs for BE neoplasia performed in expert centers in the Netherlands.

**Methods** Endoscopic therapy for BE neoplasia in the Netherlands is centralized in 9 expert centers with specifically and jointly trained endoscopists and pathologists, and treatment/FU data collected in a joint database. ESD is restricted to 5 centers and is restricted for large and bulky lesions that cannot be removed with cap-based ER and/or with suspicion for submucosal invasion. We report efficacy and safety outcomes of all successfully completed ESD BE cases in the Netherlands since 2008. En-bloc resection was defined as complete resection of the delineated target lesion in a single piece, R0-resection as absence of cancer in the vertical/lateral margin.

**Results** 130 ESDs were performed and during median 121 minutes (IQR 90-180), 97% (126/130) were removed en-bloc. Lesion diameter was

median 30mm (IQR10-40) over 30% of the circumference (25-50). Pathology was T1a-EAC(48%) or T1b-EAC (52%; 19%sm1 and 33%≥sm2). The combined en-bloc and R0 resection rate was 87% [95%-CI 77-94] for T1a-EAC, and 49% [95%-CI 37-62] for T1b-EAC. Upon R1 resection, 29%(10/34) had residual cancer, in all cases detected at first FU endoscopy, while the remaining 71%(24/34) had no residual cancer in esophagectomy specimen (n=4) or during median endoscopic FU of 9 months(4-22) (n=20). Upon R0 resection, the local recurrence rate during median 17 months FU(IQR 8-30) was 0%[95%-CI 0-5]. Adverse events: 1% perforation [95%-CI 0-4], 3% post-procedural bleeding [95%-CI 1-7] and 13% strictures [95%CI 8-20], resolved with median 3(IQR1-12) dilatations.

**Conclusions** In expert hands, ESD is safe and allows removal of (submucosal) EAC. R1 resection does not necessarily imply residual cancer, and endoscopic restaging may help in identifying patients who do have residual cancer.

### OP26 ENDOSCOPIC SUBMUCOSAL DISSECTION AND BARRETT'S ESOPHAGUS - RESULTS OF THE GERMAN ESD REGISTRY

**Authors** Fleischmann C<sup>1</sup>, Probst A<sup>1</sup>, Ebigo A<sup>1</sup>, Faiss S<sup>2,3</sup>, Schumacher B<sup>4</sup>, Mende M<sup>2</sup>, Rempel V<sup>5</sup>, Rust C<sup>6</sup>, Messmann H<sup>1</sup>

**Institute** 1 Universitätsklinikum Augsburg, 3. Medizinische Klinik, Augsburg, Germany; 2 Sana Klinikum Lichtenberg, Berlin, Germany; 3 Asklepios Klinik Barmbek, Hamburg, Germany; 4 Elisabeth-Krankenhaus, Essen, Germany; 5 St. Anna Hospital, Herne, Germany; 6 Krankenhaus Barmherzige Brüder, München, Germany

DOI 10.1055/s-0041-1724286

**Citation:** Fleischmann C, Probst A, Ebigo A et al. OP26 ENDOSCOPIC SUBMUCOSAL DISSECTION AND BARRETT'S ESOPHAGUS - RESULTS OF THE GERMAN ESD REGISTRY. *Endoscopy* 2021; 53: S14.

**Aims** In Europe, endoscopic submucosal dissection (ESD) is not yet the standard treatment for premalignant or early malignant lesions in the gastrointestinal (GI)-tract. High quality data is limited to single center studies. The German ESD registry was set up to evaluate and assess the technical success, curative resection rate, economic aspects as well as long term outcomes of ESD procedures performed in Germany. In this study, we present results of ESD procedures in Barrett's esophagus (BE) from the German ESD registry.

**Methods** The German ESD registry study is a prospective, multicenter trial. Management and evaluation of collected data is done in a central data base at Universitätsklinikum Augsburg, Germany. Data is collected anonymously via electronic case report form (eCRF), and is still ongoing.

**Results** From the 1<sup>st</sup> of January 2017 to 1<sup>st</sup> January 2020, 20 hospitals included 300 ESDs in Barrett's esophagus. In 287 cases (95.7%) a standard ESD was performed, and in 13 cases a hybrid ESD (4.3%). Histopathological assessment showed 268 adenocarcinomas, 20 cases with high-grade dysplasia and 12 cases with low-grade dysplasia.

An overall en-bloc resection rate of 96% (288/300) was achieved. The R0 resection rate was 75% (226/300), a curative resection rate of 70% (210/300) was achieved. Complications occurred in 10 out of 300 cases (3.3%). Delayed bleeding was reported in 6 cases, blood transfusion was necessary in 1 case. Four perforations were documented (3x intraprocedural, 1x delayed).

**Conclusions** A total of 300 ESD procedures in Barrett's esophagus were registered so far with excellent en-bloc resection rate and low complication rates. With regards to R0-and curative resection rates, there is some room for improvement. Further data collection and data analysis will help to expand on the results shown here.

## OP27V CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY SQUAMOUS CELL CARCINOMA USING DOUBLE-TUNNEL AND CLIP-THREAD TECHNIQUE

**Authors** Bassioulas S<sup>1</sup>, Katzakis C<sup>1</sup>, Gkaraganis D<sup>1</sup>, Chantzicolaou L<sup>1</sup>

**Institute** 1 Metropolitan General Hospital, Advanced Therapeutic Endoscopy, Athens, Greece

**DOI** 10.1055/s-0041-1724287

**Citation:** Bassioulas S, Katzakis C, Gkaraganis D et al. OP27V CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY SQUAMOUS CELL CARCINOMA USING DOUBLE-TUNNEL AND CLIP-THREAD TECHNIQUE. *Endoscopy* 2021; 53: S15.

A 51 years old female diagnosed with a high-grade squamous cell dysplasia at the cervical esophagus was referred to our department for endoscopic resection.

The lesion's borders were clearly defined by Lugol chromoendoscopy as fully circumferential.

The resection was performed with the aid of two tunnels from the oral side. Lateral margins between the two tunnels were dissected after positioning of a clip-thread at the openings of the two tunnels.

The whole procedure was performed in 85 minutes without any complication. Final histology was m1 squamous cell carcinoma, V/Ly (-), HMO/VMO, R0, curative resection.

## OP28 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OR ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR EARLY ESOPHAGEAL CANCERS? RESULTS FROM THE GRAPHE PROSPECTIVE MULTICENTER STUDY

**Authors** Chapelle N<sup>1</sup>, Barret M<sup>2</sup>, Berger A<sup>3</sup>, Hakim S<sup>4</sup>, Chevaux JB<sup>5</sup>, Camus M<sup>6</sup>, Prouvost V<sup>1</sup>, Koch S<sup>7</sup>, Metivier-Cesbron E<sup>8</sup>, Pioche M<sup>9</sup>, Wangermes M<sup>10</sup>, Rahmi G<sup>11</sup>, Privat J<sup>12</sup>, Bossard C<sup>1</sup>, Mosnier JF<sup>1</sup>, Vanbiervliet G<sup>13</sup>

**Institute** 1 CHU de Nantes, Institut des Maladies de l'Appareil Digestif, Service de Gastroenterologie, Hépatologie, Assistance nutritionnelle et oncologie médicale, Nantes, France; 2 Hôpital Cochin, Paris, France; 3 CHU de Bordeaux, Bordeaux, France; 4 CHU Amiens, Amiens, France; 5 CHRU Nancy, Vandoeuvre-lès-Nancy, France; 6 Hôpital Saint Antoine, Paris, France; 7 CHU de Besançon, Besançon, France; 8 CHU d'Angers, Angers, France; 9 Hôpital Edouard Herriot, Lyon, France; 10 CHU de Poitiers, Poitiers, France; 11 Hôpital Européen Georges Pompidou, Paris, France; 12 CH Vichy, Vichy, France; 13 CHU de Nice, Nice, France

**DOI** 10.1055/s-0041-1724288

**Citation:** Chapelle N, Barret M, Berger A et al. OP28 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OR ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR EARLY ESOPHAGEAL CANCERS? RESULTS FROM THE GRAPHE PROSPECTIVE MULTICENTER STUDY. *Endoscopy* 2021; 53: S15.

**Aims** Esophageal cancer is associated with excellent prognosis when diagnosed and treated at an early stage. Therefore, widespread adoption of EMR and ESD is of pivotal importance but poorly assessed in routine practice. Our aim was to assess the efficacy of EMR and ESD in "real life" conditions.

**Methods** Patients referred for EMR or ESD of early esophageal lesions were included prospectively. Inclusion criteria were: 1) at least one macroscopic lesion with histologic confirmation of high-grade dysplasia (HGD) or carcinoma, 2) absence of previous esophageal cancer/treatment. Demographical, endoscopic, histological, and follow-up data were collected via a dedicated academic website.

**Results** Between February 2018 and September 2020, 74 patients from 16 centers were included. Pre-therapeutic endoscopic consisted in EUS (43%), standard (56%) or virtual (77%) chromoscopy. Lesions were developed on BE or squamous mucosa in 55% and 45% of cases, respectively. ESD was the

preferred option (81%) versus EMR (19%). Technical success rate was 96%. No immediate perforation was noted. Delayed adverse events occurred in 42% of patients (dysphagia 68%, delayed bleeding 13%, perforation 0%). R0 resection rate was 63%, but was significantly higher in BE (76%) as compared to SCC (48%) ( $p=0.02$ ). Resection was curative in only 46% of patients (BE 68% versus SCC 18%;  $p<0.001$ ), mostly because of deep submucosal invasion. Subsequent adjuvant therapy (surgery or radiochemotherapy) was performed 31% of patients.

**Conclusions** In France, ESD has become the preferred option for early esophageal lesions, with very few complications and high technical success rate. However, curative R0 occurs in 2/3 of BE patients but only in 1/5 SCC patients, mostly because of deep submucosal invasion. Whether such results are due to insufficient recognition of deep submucosal invasion signs or as an attempt to maintain "salvage" endoscopic resection as well as long-term survival outcomes remain to be determined.

## OP29V ENDOSCOPIC SUBMUCOSAL DISSECTION OF THE PRIMARY MALIGNANT MELANOMA OF THE OESOPHAGUS

**Authors** ND Pilonis<sup>1</sup>, Kaminski MF<sup>1</sup>

**Institute** 1 The Maria Skłodowska-Curie National Research Institute of Oncology, Department of Oncological Gastroenterology, Warsaw, Poland

**DOI** 10.1055/s-0041-1724289

**Citation:** Pilonis ND, Kaminski MF. OP29V ENDOSCOPIC SUBMUCOSAL DISSECTION OF THE PRIMARY MALIGNANT MELANOMA OF THE OESOPHAGUS. *Endoscopy* 2021; 53: S15.

Primary malignant melanoma of the esophagus is a rare malignant neoplasm of the esophagus accounting for 0.1–0.2% of esophageal malignancies. As the primary malignant melanoma originates from the mucosal layer of the esophagus, early diagnosis allows for curative endoscopic submucosal dissection (ESD), for cases in which melanoma is limited to the mucosal and submucosal layer. To date, only a limited number of reports have described the use of endoscopic treatment for primary malignant melanoma. The present video presents the case of a 79-year-old male patient diagnosed with early primary malignant melanoma who was successfully treated by ESD.

---

Thursday, 25 March 2021

14:00 – 14:45

Biliary cannulation: When the going gets tough

Room 6

---

## OP30 PREDICTORS OF PRECUT TECHNIQUES REQUIREMENT DURING ERCP CANNULATION

**Authors** Zaragoza N<sup>3</sup>, Albuquerque M<sup>1,2</sup>, Miguel I<sup>3</sup>, Figa M<sup>1</sup>, Pijoan E<sup>3</sup>, Miñana JM<sup>3</sup>, Vargas A<sup>1,2</sup>, Torres G<sup>3</sup>, Reñe JM<sup>3</sup>, González-Huix F<sup>1,3</sup> SEED Working Group on ERCP

**Institute** 1 Clínica Girona, Gastroenterology, Girona, Spain; 2 Hospital de Palamós, Gastroenterology, Girona, Spain; 3 Hospital Universitario Arnau de Vilanova, Gastroenterology, Lleida, Spain

**DOI** 10.1055/s-0041-1724290

**Citation:** Zaragoza N, Albuquerque M, Miguel I et al. OP30 PREDICTORS OF PRECUT TECHNIQUES REQUIREMENT DURING ERCP CANNULATION. *Endoscopy* 2021; 53: S15.

**Aims** To determine the predictive factors of precut access papillotomy techniques requirement during ERCP cannulation.

**Methods** Analysis of a multicenter prospective endoscopy database (2009–2017). Patients with naive papilla undergone first ERCP, performed by expert endoscopists, were included. There were analyzed ERCP indications, ampulla and duodenum anatomical features, cannulation techniques and duodenoscopy positioning to accomplish ERCP.

**Results** Of 1109 analyzed patients, age: 71.47 ± 0.48y; 51.8% women, 270 (24.3%) required precut techniques: Needle-Knife: 142 (52.5%), transpancreatic:



93 (34%) and 35 (13%), both them. Overall ERCP cannulation and complication rates: 95% and 6.7%, respectively. There were no differences in age, gender, general status and papillary orifice features between standard and precut ERCP cannulation group. Conversely, into precut group, ERCP indicated for malignant disease (35.9 vs. 21.2%,  $p=0.001$ ), bilirubin  $>3\text{mg}$  (27.5 vs. 22.2%,  $p=0.048$ ), non-peridiverticular papilla (25.9 vs 18.5%,  $p=0.02$ ), presence of  $>1$  transverse papillary fold (31.5 vs. 21.4%,  $p=0.001$ ) and the accomplishment of ERCP in a duodenoscope long position (44.9 vs. 21.5,  $p=0.001$ ) were more frequent. In a multivariate analysis, ERCP indicated for malignant disease (OR: 1.98; 95%CI: 1.43 -2.73), presence of  $>1$  transverse fold (OR: 1.53; 95%CI: 1.12 -2.08) and the accomplishment of ERCP in a duodenoscope long position (OR: 2.69; 95%CI: 1.85 -3.93) were predictors of precut techniques requirement during ERCP cannulation.

**Conclusions** ERCP indicated for malignant disease, the presence of  $>1$  transverse papillary fold and the accomplishment of ERCP in a duodenoscope long position are predictors of precut techniques requirement. In these cases, ERCP should be performed or at least supervised by expert endoscopists.

### OP31 EVALUATION OF THE PERFORMANCES OF A SINGLE-USE DUODENOSCOPE: A PROSPECTIVE MULTICENTRE FRENCH STUDY (THE EXALTES STUDY)

**Authors** [Napoleon B<sup>1</sup>](#), [Gonzalez JM<sup>2</sup>](#), [Grandval P<sup>2</sup>](#), [Lisotti A<sup>1,3</sup>](#), [Laquière AE<sup>4</sup>](#), [Boustière C<sup>4</sup>](#), [Barthet M<sup>2</sup>](#), [Donatelli G<sup>5</sup>](#), [Vanbiervliet G<sup>6</sup>](#)

**Institute** 1 Hôpital Privé Jean Mermoz, Lyon, France; 2 Aix Marseille Université, Marseille, France; 3 University of Bologna, Hospital of Imola, Imola, Italy; 4 Hôpital Saint Joseph, Marseille, France; 5 Hôpital Privé des Peupliers, Paris, France; 6 Hôpital L'Archet 2, Nice, France

**DOI** [10.1055/s-0041-1724291](https://doi.org/10.1055/s-0041-1724291)

**Citation:** Napoleon B, Gonzalez JM, Grandval P et al. OP31 EVALUATION OF THE PERFORMANCES OF A SINGLE-USE DUODENOSCOPE: A PROSPECTIVE MULTICENTRE FRENCH STUDY (THE EXALTES STUDY). *Endoscopy* 2021; 53: S16.

**Aims** A single-use duodenoscope (SUD) has been recently developed to overcome issues with ERCP-related cross-infections. The aim was to evaluate SUD safety and performance in a prospective multi-centre study.

**Methods** We conducted a prospective, multi-centre single-arm study enrolling all consecutive patients undergoing ERCP in six French centres. All ERCP were performed with the SUD and, in case of failure, operators switched to a reusable duodenoscope. Study outcomes were the successful completion of the procedure with SUD, safety, and operators' satisfaction (VAS scale 0-10 and 22 qualitative items). The study protocol was approved by the French authority and registered (ID-RCB: 2020-A00346-33). An external company anonymously collected the database and performed the statistical analysis.

**Results** Sixty patients (34 females, median age 65.5-year-old) were enrolled. Main indications were CBD stones (41.7%), malignant biliary obstruction (26.7%) and chronic pancreatitis (20.0%). Most ERCP were considered ASGE grade 2 (56.7%) or 3 (35.0%). Fifty-seven (95.0%) procedures have been successfully completed using the SUD. Failures were unrelated to SUD use (1 duodenal stricture, 1 ampullary infiltration, and 1 complete biliary stricture); reusable duodenoscopes did not allow to accomplish the procedures. These patients were treated with surgery, EUS-guided drainage, and intervention radiology, respectively. Median operators' satisfaction was 9 [7-9]. Qualitative assessments were considered clinically satisfactory in a median of 100% of items and comparable to a reusable duodenoscope in 97.9% of items. No SUD-related adverse event (AE) was observed. Three patients (5%) reported an AE (pain after biliary stenting, mild pancreatitis, and pancreatic carcinoma disease progression to death).

**Conclusions** The use of a SUD allows accomplishing ERCP with an optimal successful rate and safety. Our data show that SUD could be used for several ERCP indications and complexity. The clinical applications and systematic use of SUD should be assessed by dedicated trials.

### OP32 DIFFICULT BILIARY CANNULATION IN THE ERCP: REPEATED ERCP AFTER PRECUT, PERCUTANEOUS OR EUS GUIDED ALTERNATIVE PROCEDURE? ANALYSIS IN A TERTIARY CARE CENTER

**Authors** [Stathopoulos P<sup>1</sup>](#), [Lerner P<sup>1</sup>](#), [Astheimer P<sup>1</sup>](#), [Breitling L<sup>1</sup>](#), [Mahnken A<sup>2</sup>](#), [Denzer U<sup>1</sup>](#)

**Institute** 1 University Clinic Marburg, Clinic for Gastroenterology, Marburg, Germany; 2 University Clinic Marburg, Clinic for Radiology, Marburg, Germany  
**DOI** [10.1055/s-0041-1724292](https://doi.org/10.1055/s-0041-1724292)

**Citation:** Stathopoulos P, Lerner P, Astheimer P et al. OP32 DIFFICULT BILIARY CANNULATION IN THE ERCP: REPEATED ERCP AFTER PRECUT, PERCUTANEOUS OR EUS GUIDED ALTERNATIVE PROCEDURE? ANALYSIS IN A TERTIARY CARE CENTER. *Endoscopy* 2021; 53: S16.

**Aims: Introduction** ERCP is the standard procedure for biliary drainage. In case of difficult biliary access alternative procedures consist of precut intervention with repeated ERCP, percutaneous access or EUS guided intervention. We analyzed frequency and success rate of used procedures in the daily praxis.

**Methods** We analyzed all ERCP proc. from 1-2017 to 12-2019. Registered parameters were indication, first or repeated ERCP, performed intervention, house classification, anatomy, cannulation success, PEP rate.

**Results** 1610 ERCP procedures were undertaken (anatomy: 1564 normal; 46 postop.(Roux-y or Bill)). Main indication was biliary (+/- pancreatic) in 95.6% (1495) and pancreatic in 4.4% (69). Distribution of house classification: Biliary (+/- pancreatic): House I n = 842, House II n = 284, House III n = 363. Pancreatic: House II n = 55; House III N = 14.

40.5% (633/1564) of patients with biliary indication had a naive papilla (Malign 26.4%, CDL 59.9%, benign stricture 4.4%, bil. leakage 3.6%, others 8.6%). Success rate for biliary access during 1. ERCP was 87% (553/633). No additional interventions were performed in 14 patients (tumor referred to surgery 3; drop of cholestasis 11). Repeated ERC performed after precut led to successful cannulation in 86% (2cond intervention (39/49) 3d intervention (3/4)). Alternative procedures: Percutaneous access (PTCD) was performed in 5 patients after first ERC attempt; in 3 patients after 2cond ERC (malign obstruction 5/8). EUS guided biliary drainage in 16 patients after first ERC attempt (EUS-BD using LAMS: 15, EUS Rendezvous: 1) mainly in patients with malign obstruction (14/16).

Introduction of EUS guided biliary drainage in 2018 led to a decline of percutaneous procedures.

**Conclusions** Repeated ERC after precut technique succeeds in 86% in case of primarily unsuccessful biliary access. EUS guided biliary drainage is an effective alternative especially in patients with malign obstruction.

### OP33 SUCCESS OF A SECOND ERCP AFTER FAILURE OF INITIAL BILIARY CANNULATION FOLLOWING PRECUT SPHINCTERTOMY, EFFICACY AND SAFETY OF ALTERNATIVE BILIARY DRAINAGE TECHNIQUES

**Authors** [Castillo-Regalado E<sup>1</sup>](#), [Córdova H<sup>1</sup>](#), [Fernández-Simón A<sup>1</sup>](#), [Castillo-Iturra J<sup>1</sup>](#), [Bofill Diez-Cascón A<sup>1</sup>](#), [Soy Ripoll G<sup>1</sup>](#), [Olivas Alberch I<sup>1</sup>](#), [Llach J<sup>1</sup>](#), [Chavez K<sup>1</sup>](#), [Sendino O<sup>1</sup>](#), [Cárdenas A<sup>1</sup>](#)

**Institute** 1 Hospital Clínic, Universitat de Barcelona, Endoscopy Unit, Gastroenterology Department, ICMDiM, IDIBAPS, CIBEREHD, Barcelona, Spain  
**DOI** [10.1055/s-0041-1724293](https://doi.org/10.1055/s-0041-1724293)

**Citation:** Castillo-Regalado E, Córdova H, Fernández-Simón A et al. OP33 SUCCESS OF A SECOND ERCP AFTER FAILURE OF INITIAL BILIARY CANNULATION FOLLOWING PRECUT SPHINCTERTOMY, EFFICACY AND SAFETY OF ALTERNATIVE BILIARY DRAINAGE TECHNIQUES. *Endoscopy* 2021; 53: S16.

**Aims** We evaluated the efficacy, safety of a second ERCP after failed cannulation with precut, percutaneous transhepatic biliary drainage (PTBD), and surgery; and factors related to the success of a second ERCP with failed precut.

**Methods** We reviewed all patients that underwent an ERCP with native papilla from January 2017 to December 2018 in our hospital. Efficacy was based on the cannulation rate of the second ERCP and the resolution of biliary obstruction in PTBD and surgery. Safety was assessed in terms of adverse events.

**Results** Out of 469 patients with a native papilla, we identified 50 patients with failed cannulation, was performed precut and a second ERCP in 27, that was successful in 21 (78%). Periampullary duodenal diverticulum was found in 66% of patients in which cannulation was not achieved ( $p = 0.03$ ). After second ERCP, three of 27 patients (11%) presented adverse events: one delayed bleeding, one pancreatitis, and one cholangitis. The median time between procedures was 4 days (IQR 3-4). The median hospital stay after second ERCP was 4 days (IQR 2-10). Of 11 patients who underwent PTBD post-failure in the first ERCP, technical success was achieved in 9 (82%), with a median of 2 sessions and a median hospital stay of 7 days (RIQ 5-14). Seven patients (64%) had adverse events (four cholangitis, two pancreatitis, and one bacteremia). Out of 3 patients who underwent surgery, technical success was achieved in all cases without presenting any complications until discharge. The median hospital stay was 6.5 days (IQR 4-10.5).

**Conclusions** A second ERCP after failure of initial biliary cannulation following a precut sphincterotomy appears to be safe, effective and is associated with fewer adverse effects than PTBD. The presence of a duodenal diverticulum is associated with a lower success rate in the second ERCP.

## OP34 GUIDE-WIRE CANNULATION AND ACUTE POST ERCP-PANCREATITIS IN CASES WITH NARROW INTRAPANCREATIC PART OF COMMON BILE DUCT

**Authors** Steshenko A<sup>1</sup>, Kiosov A<sup>1</sup>

**Institute** 1 Zaporizhzhia State Medical University, Faculty Surgery, Zaporizhzhia, Ukraine

**DOI** 10.1055/s-0041-1724294

**Citation:** Steshenko A, Kiosov A. OP34 GUIDE-WIRE CANNULATION AND ACUTE POST ERCP-PANCREATITIS IN CASES WITH NARROW INTRAPANCREATIC PART OF COMMON BILE DUCT. *Endoscopy* 2021; 53: S17.

**Aims** Our research aim to determine the risk of acute pancreatitis in patients with narrow intrapancreatic part of common bile duct who had undergone endoscopic sphincterotomy in correlation with different ways of cannulation of major duodenal papilla.

**Methods** We studied 446 who had undergone successful endoscopic transpapillary intervention (ETI) between 2013 and 2016. They were divided into two groups. Group 1 included 222 patients (49.7%; age - 53.93±11.6; males - 46.82%) in whom ETI were performed without guidewire and prophylactic stenting of main pancreatic duct. Group 2 consisted of 224 patients (50.2%; age - 52.31±12.6; males - 42.52%) who underwent ETI with guidewire cannulation and prophylactic stenting and drainage of pancreatic duct. Categorical variables were compared using the chi-squared test. All tests were two-sided, and  $p < 0,05$  was considered statistically significant. All statistical analyses were performed using SPSS V27.0 software (IBM).

**Results** Occurrence of severe form of acute pancreatitis and other complications in general cohort was higher in 1t group. In the 2d group was a reduced level of complications in general cohort ( $p < 0,05$ ). Patients in group 2d also had reduced incidences of purulent necrotic changes in the pancreas ( $p < 0,05$ ). Roc-analysis showed that the diameter of the intrapancreatic part of the common bile duct may be a predictor factor for acute pancreatitis after endoscopic procedures.

**Conclusions** Guidewire usage along and with stenting and drainage of the pancreatic duct helps reduce incidences of post-procedural acute pancreatitis and other complications. The Guidewire technique reduces the incidence of unsuccessful attempts and the level of damage to the papilla.

Thursday, 25 March 2021

15:00 – 15:45

Colorectal Cancer (CRC) Screening  
(WEO-ESGE joint session)

Room 3

## OP35 IMPACT OF THE IMPLEMENTATION OF THE DUTCH NATIONAL FIT-BASED CRC SCREENING PROGRAM ON INCIDENCE AND CHARACTERISTICS OF SCREEN-DETECTED CRCs

**Authors** Breekveldt ECH<sup>1,2</sup>, Lansdorp-Vogelaar I<sup>1</sup>, Toes-Zoutendijk E<sup>1</sup>, Spaander MCW<sup>3</sup>, van Vuuren AJ<sup>3</sup>, van Kemenade FJ<sup>4</sup>, Ramakers C<sup>5</sup>, Dekker E<sup>6</sup>, Nagtegaal ID<sup>7</sup>, van Leerdam ME<sup>2</sup>, Elferink MAG<sup>8</sup>

**Institute** 1 Erasmus University Medical Center, Department of Public Health, Rotterdam, Netherlands; 2 Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 3 Erasmus University Medical Center, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 4 Erasmus University Medical Center, Department of Pathology, Rotterdam, Netherlands; 5 Erasmus University Medical Center, Department of Clinical Chemistry, Rotterdam, Netherlands; 6 Amsterdam University Medical Centers – Academic Medical Center, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 7 Radboud University Medical Center, Department of Pathology, Nijmegen, Netherlands; 8 Netherlands Comprehensive Cancer Organization, Department of Research and Development, Utrecht, Netherlands  
**DOI** 10.1055/s-0041-1724295

**Citation:** Breekveldt ECH, Lansdorp-Vogelaar I, Toes-Zoutendijk E et al. OP35 IMPACT OF THE IMPLEMENTATION OF THE DUTCH NATIONAL FIT-BASED CRC SCREENING PROGRAM ON INCIDENCE AND CHARACTERISTICS OF SCREEN-DETECTED CRCs. *Endoscopy* 2021; 53: S17.

**Aims** Since 2014, a population-based colorectal cancer (CRC) screening program was stepwise implemented in the Netherlands, using biennial fecal immunochemical testing (FIT). As of 2019, the program was fully implemented, inviting all individuals aged between 55-75 years. This study assessed the impact of the implementation of a national FIT-based CRC screening program on different outcomes of CRC.

**Methods** We collected CRC incidence data from the Netherlands Cancer Registry (NCR) from 2010-2019. Patients with CRC diagnosis from 2014-2018 in the NCR were linked with the Dutch nationwide registry of histo- and cytopathology (PALGA) to identify mode of detection (i.e. screen-detected vs. clinically detected). We compared localization, stage distribution, and treatment of screen-detected CRCs to clinically detected CRCs in patients aged 55-75 years from 2014-2018.

**Results** Prior to introduction of screening, CRC incidence was 215.5 per 100,000 persons in 2013. With the introduction of screening, CRC incidence first increased to 260.2 in 2015, and subsequently decreased to 180.4 per 100,000 persons in 2019. Incidence rate for advanced CRCs (stage III and IV) was 117.7 in 2013 and increased to 123.4 per 100,000 persons in 2015. Hereafter, it decreased to 95.7 per 100,000 persons in 2018. Compared to clinically detected CRCs, screen-detected CRCs were more often located left-sided (44.4% vs. 32.4%) and detected in stage I or II (68.0% vs. 47.1%, Table 1). Local excision was performed in 17.3% of screen-detected colon cancers, compared to 5.0% of clinically detected colon cancers. For rectal cancers, this was 22.7% vs. 9.5%.

**Conclusions** After implementation of the Dutch national FIT-based screening program, CRC incidence decreased below the level before implementing the program. Also, incidence rate of advanced-stage CRCs decreased. Together with the observed shift in staging and treatment of screen-detected CRCs, we may carefully conclude that, on the long-term, FIT-screening will lead to a decrease in CRC-related morbidity and mortality.

	Total	Screen-detected CRCs n (%)	Clinically detected CRCs n (%)	p value
Stage I	14,069	6,501 (48.3)	7,568 (23.7)	
Stage II	10,135	2,660 (19.7)	7,475 (23.4)	
Stage III	13,418	3,587 (26.6)	9,831 (30.7)	
Stage IV	7,809	723 (5.4)	7,086 (22.2)	<0.001

### OP36 FIT AND COLONOSCOPY UPTAKE AFTER THE FIRST ROUND OF TESTING IN A RANDOMIZED HEALTH SERVICES STUDY OFFERING COMPETING STRATEGIES FOR COLORECTAL CANCER SCREENING (PICCOLINO STUDY)

**Authors** Pilonis N<sup>1</sup>, Bugajski M<sup>1</sup>, Wieszczy P<sup>1</sup>, Rupinski M<sup>1</sup>, Pisera M<sup>1</sup>, Pawlak E<sup>1</sup>, Regula J<sup>1</sup>, Kaminski MF<sup>1</sup>

**Institute 1** The Maria Skłodowska-Curie National Research Institute of Oncology, Department of Oncological Gastroenterology, Warsaw, Poland  
DOI 10.1055/s-0041-1724296

**Citation:** Pilonis N, Bugajski M, Wieszczy P et al. OP36 FIT AND COLONOSCOPY UPTAKE AFTER THE FIRST ROUND OF TESTING IN A RANDOMIZED HEALTH SERVICES STUDY OFFERING COMPETING STRATEGIES FOR COLORECTAL CANCER SCREENING (PICCOLINO STUDY). *Endoscopy* 2021; 53: S18.

**Aims** Primary colonoscopy and fecal immunochemical testing (FIT) are considered first tier tests for colorectal cancer (CRC) screening. Although colonoscopy is considered the most efficacious test, FIT may achieve higher participation rates. We assessed diagnostic yield of FIT and colonoscopy after the first round of testing in the PICCOLINO study.

**Methods** This was a multicenter randomized health services study performed within the framework of the Polish Colonoscopy Screening Program (PCSP) between January 2019 and March 2020 on screening-naïve individuals. Eligible candidates were randomly assigned in a 1:1:1 ratio to participate in one of three competing invitation strategies: (I. control) invitation to screening colonoscopy only; (II. sequential) invitation to primary colonoscopy, and invitation for FIT for initial non-responders; or (III. choice) invitation offering a choice of colonoscopy or FIT. The primary outcome was participation in CRC screening within 18 weeks after enrollment into the study. The secondary outcome was diagnostic yield for advanced neoplasia (AN).

**Results** Overall, 12,452 individuals were randomized into three groups. The participation in the control group (17.5%) was significantly lower compared to the sequential (25.8%) and choice strategy (26.5%) groups ( $p < 0.001$  for both comparisons). In the intention to screen analysis, AN detection rates were comparable between the control (1.1%), sequential (1.0%) and choice groups (1.1%). In the intention to screen analysis, detection rates of all adenomas were the same in the control and in the sequential groups (5.6%) and significantly lower in the choice group (3.9%;  $p < 0.001$ ). Primary colonoscopy diagnosed 216 patients with adenomas in the control group, 200 patients in the sequential group, and 125 patients in the choice group. FIT contributed to diagnosis of 19 patients with adenomas in the sequential group and 32 patients with adenomas in the choice group.

**Conclusions** Increased participation in strategies with FIT do not translate into higher detection of AN or any adenoma.

Thursday, 25 March 2021

15:00 – 15:45

Therapeutic EUS: What are the new frontiers?

Room 5

### OP37V TECHNICAL VARIANT OF EUS-GUIDED RECANALIZATION FOR COMPLETE ESOPHAGEAL STENOSIS: BALLOON-TARGET ASSISTED RENDEZVOUS APPROACH

**Authors** Velazquez-Rodriguez J<sup>1</sup>, Maisterra S<sup>1</sup>, Gornals JB<sup>1</sup>

**Institute 1** Hospital Universitari de Bellvitge-IDIBELL, Endoscopy, L'Hospitalet, Barcelona, Spain

DOI 10.1055/s-0041-1724297

**Citation:** Velazquez-Rodriguez J, Maisterra S, Gornals JB. OP37V TECHNICAL VARIANT OF EUS-GUIDED RECANALIZATION FOR COMPLETE ESOPHAGEAL STENOSIS: BALLOON-TARGET ASSISTED RENDEZVOUS APPROACH. *Endoscopy* 2021; 53: S18.

A 64-year-old male with absolute dysphagia due to complete esophageal stenosis after oncological treatment of pharyngeal cancer.

- Retrogradely and through gastrostomy, placement of a balloon immediately bellow the stenosis. Balloon filling up to create an EUS-target.
- Advancement of echoendoscope to the cul-de-sac. Identification by EUS of the filled balloon-target. Puncture with a 19G Needle and advancement.
- Simultaneous introduction of 2 scopes performing a combined antero-grade and retrograde dilation. Antegrade placement of a metal stent with retrograde supervision.

**Comments** Technical variant of endoscopic recanalization of a complete esophageal stenosis with the use of a balloon-target.

### OP38 ENDOSCOPIC ULTRASOUND (EUS) GUIDED RADIOFREQUENCY ABLATION (RFA) FOR PANCREATIC NEUROENDOCRINE TUMORS (PNET): ARE THE RESULTS STILL GOOD WHEN BASED ON PET-CT GA68 FOLLOW UP?

**Authors** Schifter J<sup>1</sup>, Dancour A<sup>2</sup>, Sheykman G<sup>2</sup>, Benhaim M<sup>2</sup>, Doviner V<sup>3</sup>, Dan ML<sup>2</sup>, Goldin E<sup>2</sup>

**Institute 1** Shaare Tzedek Medical Center, Digestive Diseases, Jerusalem, Israel; **2** Shaare Tzedek Medical Center, Digestive Diseases Institute, Jerusalem, Israel; **3** Shaare Tzedek Medical Center, Pathology, Jerusalem, Israel

DOI 10.1055/s-0041-1724298

**Citation:** Schifter J, Dancour A, Sheykman G et al. OP38 ENDOSCOPIC ULTRASOUND (EUS) GUIDED RADIOFREQUENCY ABLATION (RFA) FOR PANCREATIC NEUROENDOCRINE TUMORS (PNET): ARE THE RESULTS STILL GOOD WHEN BASED ON PET-CT GA68 FOLLOW UP?. *Endoscopy* 2021; 53: S18.

**Aims** Preliminary results of EUS guided RFA ablation for pNET are promising. Since surgical specimens are not available, and CT, MRI or contrast EUS may lack sensitivity to detect remnant tumor tissue, success overestimation might have occurred. We aimed to evaluate the use of PET-CTga68 in such indication, in pretreatment positive cases.

**Methods** Prospective series of pNET patients with positive PET-CTga68 performed before and after EUS guided RFA ablation.

**Results** Ten pNET patients (2 with insulinoma) were included, Median age was 57 (24-80), median lesion size 18mm (7-25), locations were head (n=4), body (n=4) and tail (n=2), 4 were close to the pancreatic duct (PD) and 5 to blood vessels. Median number of ablations was 7 (3-16). Negativization of PET-CTga68 uptake was achieved after a single RFA session in 4 patients and after 2 RFA sessions in another 4. In the 2 remaining patients negativization was not achieved after the first RFA session, one performed a second RFA session and is waiting for a follow-up PET-CTga68, the last patient requested surgical treatment. Two complications were documented: stenosis of the PD treated by

transient stenting and one pseudo-aneurysm of the splenic artery managed angiographically. Median follow up was 25 months (5-34).

**Conclusions** Follow up PET-CTga68 in pretreatment positive patients helped to demonstrate 80% of complete tumor ablation in this study. To reach such result 2 RFA sessions were often necessary without significant increase in adverse events. Longer and larger studies are still needed to confirm these results, particularly important to rule out the occurrence of distant metastasis.

### OP39 ENDOSCOPIC ULTRASOUND (EUS) GUIDED RADIOFREQUENCY ABLATION (RFA) FOR OPERABLE PANCREATIC DUCT ADENOCARCINOMAS (PDAC) IN NON-OPERABLE PATIENTS: PRELIMINARY EXPERIENCE IN 10 CONSECUTIVE PATIENTS

**Authors** [Dancour A<sup>1</sup>](#), [Golan T<sup>2</sup>](#), [Sheykman G<sup>3</sup>](#), [Benhaim M<sup>4</sup>](#), [Tahover E<sup>5</sup>](#), [Goldin E<sup>1</sup>](#), [Livovsky DM<sup>1</sup>](#), [Schifter J<sup>1</sup>](#)

**Institute** 1 Shaare Zedek Medical Center, Digestive Diseases Institute, Jerusalem, Israel; 2 Tel Aviv University/Sheba Medical Center, Oncology, Tel Aviv, Israel; 3 Shaare Zedek Medical Center, Radiology, Jerusalem, Israel; 4 Shaare Zedek Medical Center, Surgery, Jerusalem, Israel; 5 Shaare Zedek Medical Center, Oncology, Jerusalem, Israel  
**DOI** 10.1055/s-0041-1724299

**Citation:** Dancour A, Golan T, Sheykman G et al. OP39 ENDOSCOPIC ULTRASOUND (EUS) GUIDED RADIOFREQUENCY ABLATION (RFA) FOR OPERABLE PANCREATIC DUCT ADENOCARCINOMAS (PDAC) IN NON-OPERABLE PATIENTS: PRELIMINARY EXPERIENCE IN 10 CONSECUTIVE PATIENTS. *Endoscopy* 2021; 53: S19.

**Aims** Some patients with “operable PDAC” are not operated due to age, liver metastases or comorbidities. We aimed to investigate the safety and benefit of EUS-guided RFA in these in patients including ablation of oligo-liver metastasis ( $\leq 3$ ) during same procedure if present.

**Methods** Prospective series of non-operable patients with “operable” PDACs treated with EUS-guided RFA. A 150cm, 19 gauge needle-electrode connected to a RF generator settled to 50w was used.

**Results** From December 2017 to May 2020, ten patients (6 men), median age 71 (61-87) were included. Surgical contraindications were: age $\geq 86$  (n=2), oligo-liver metastasis (n=4), comorbidities (n=2) and patient refusal (n=2). Two patients did not tolerated chemotherapy and two received a suboptimal protocol. The median size of the pancreatic lesion was 22mm (15-30). Nine patients underwent the procedure without complications. One patient required angiographic embolization of the gastro-duodenal artery due to bleeding. Post-procedure CT showed apparent total ablation of the pancreatic lesion in 8 patients and of the liver lesions in all 3 patients (100%). After a median follow up of 6 months (1-17), the median post-RFA and overall survival (death or censor) were 6 (1-17) and 11 (6-30) months. Seven patients were alive at the closure of this analysis. Three patients died 4.5, 6 and 14 months after RFA.

**Conclusions** EUS-guided RFA of small, potentially “operable PDAC” even with oligo-liver metastases in “non-operable patients” seems safe and feasible with high technical success. Compared to historical controls, we witnessed unusually long survival. These results justify a larger controlled trial.

### OP40V TORRENTIAL PSEUDOANEURYSMAL BLEED: ENDOSCOPIC ULTRASOUND GUIDED COIL AND GLUE FOR RESCUE

**Authors** [Muktesh G<sup>1</sup>](#), [Samanta J<sup>1</sup>](#), [Kochhar R<sup>1</sup>](#)

**Institute** 1 Postgraduate Institute of Medical Education and Research, Department of Gastroenterology, Chandigarh, India  
**DOI** 10.1055/s-0041-1724300

**Citation:** Muktesh G, Samanta J, Kochhar R. OP40V TORRENTIAL

PSEUDOANEURYSMAL BLEED: ENDOSCOPIC ULTRASOUND GUIDED COIL AND GLUE FOR RESCUE. *Endoscopy* 2021; 53: S19.

Endoscopic ultrasound(EUS) guided vascular interventions are being increasingly utilised. Although EUS guided coil and glue injection has been used for treatment of fundal varices, experience of EUS guided coil and cyanoacrylate glue for treatment of pseudoaneurysm remains limited. We present a case of chronic pancreatitis with splenic artery pseudoaneurysm with history of torrential GI bleed who underwent EUS guided coil and glue injection. Complete obliteration of aneurysm was achieved and confirmed on colour doppler immediately post procedure. Patient improved and was discharged successfully.

**Conclusion** EUS guided coil and glue injection can be effective treatment option for severe pseudoaneurysmal bleeding

### OP41V AN ALTERNATIVE METHOD TO ALLOW LUMEN-APPOSING METAL STENT DELIVERY IN MINIMAL SPACES

**Authors** [Sanchez-Yague A<sup>1</sup>](#), [Gonzalez-Canoniga A<sup>1</sup>](#), [Sanchez-Cantos A<sup>1</sup>](#)  
**Institute** 1 Hospital Costa del Sol, Marbella, Spain

**DOI** 10.1055/s-0041-1724301

**Citation:** Sanchez-Yague A, Gonzalez-Canoniga A, Sanchez-Cantos A. OP41V AN ALTERNATIVE METHOD TO ALLOW LUMEN-APPOSING METAL STENT DELIVERY IN MINIMAL SPACES. *Endoscopy* 2021; 53: S19.

Lumen-apposing metal stents delivery requires a minimum of space at the target structure. This means around 14mm for accurate delivery of the 8x8mm stent distal flange. After several cases of distal flange misdeployment we developed a novel delivery method to prevent it. This method works only with 6x8mm and 8x8mm stents. After access of the target structure, we made minimal back and forth catheter movements that end delivering the distal flange at the catheter tip. This is possible because the stent is non-resheathable. We believe this method could be a useful option in certain situations.

---

Thursday, 25 March 2021

15:00 – 15:40

Endoscopy for metabolic syndrome

Room 6

---

### OP42 INTRAGASTRIC BALLOON AS A NEW APPROACH FOR METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE (MAFLD): A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** [de Freitas Junior JR<sup>1</sup>](#), [Sagae VMT<sup>1</sup>](#), [de Oliveira GHP<sup>1</sup>](#), [de Souza GMV<sup>1</sup>](#), [de Souza TF<sup>1</sup>](#), [de Oliveira CPMS<sup>1</sup>](#), [de Moura DTH<sup>1</sup>](#), [Bernardo WM<sup>1</sup>](#), [Ribeiro IB<sup>1</sup>](#), [de Moura ETH<sup>1</sup>](#), [Sánchez-Luna SA<sup>2</sup>](#), [de Moura EGH<sup>1</sup>](#)

**Institute** 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 Center for Advanced Therapeutic Endoscopy, Division of Gastroenterology, Hepatology and Nutrition, Pittsburgh, United States  
**DOI** 10.1055/s-0041-1724302

**Citation:** de Freitas Junior JR, Sagae VMT, de Oliveira GHP et al. OP42 INTRAGASTRIC BALLOON AS A NEW APPROACH FOR METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE (MAFLD): A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S19.

**Aims** Metabolic dysfunction-associated fatty liver disease (MAFLD) is a new definition for non-alcoholic fatty liver disease and corresponds to the accumulation of fat in the liver caused by metabolic dysregulation. It is estimated the condition affects a quarter of the adult world population and it will be the main cause of liver transplantation by 2030. This is the first systematic review and meta-analysis to evaluate the effects of the intragastric balloon (IGB) placement in patients with MAFLD through liver enzymes, imaging, and metabolic parameters.



**Methods** The search was conducted in the MEDLINE, EMBASE, and gray literature databases in August 2020. Study criteria inclusion were patients with a BMI > 25 kg/m<sup>2</sup> with evidence or previous diagnosis of hepatic steatosis. The outcomes analyzed before and after 6 months of IGB insertion were alanine aminotransferase (ALT), gamma-glutamyltransferase (GGT), glycosylated hemoglobin (Hb1Ac), Homeostatic model assessment (HOMA-IR), triglycerides, systolic pressure, abdominal circumference, and body mass index (BMI), and liver volume.

**Results** Ten retrospective cohort studies including 508 patients were included in the statistical analysis. After 6 months IGB reduced ALT (MD: 10.2, 95% IC [8.12, 12.3],  $p < 0.01$ ); GGT (MD: 9.41, 95% IC [6.94, 11.88],  $p < 0.01$ ); Hb1Ac (MD: 0.17%, 95% IC [0.03, 0.31],  $p = 0.02$ ); HOMA-IR (MD: 2.23, 95% IC [1.41, 3.04],  $p < 0.01$ ); triglycerides (MD: 38.58, 95% IC [26.65, 50.51],  $p < 0.01$ ); systolic pressure (MD: 7.27, 95% IC [4.79, 9.76],  $p < 0.01$ ); abdominal circumference (MD: 12.12, 95% IC [9.82, 14.41],  $p < 0.01$ ) and BMI (MD: 5.07, 95% IC [4.21, 5.94],  $p < 0.01$ ). No statistical significance was found in the reduction in liver volume (MD: 303 cm<sup>3</sup>, 95% IC [-56.6; 663.15];  $p = 0.1$ ).

**Conclusions** IGB reduced liver enzymes in patients with MAFLD as well as improved metabolic parameters related to disease progression.

Outcome	MD (mean difference)	95% CI	p (value indicating level of statistical significance)	Heterogeneity (I <sup>2</sup> %)
ALT (IU/L)	10.2	8.12 - 12.3	< 0,01	<50
GGT (IU/L)	9.41	6.94 - 11.88	< 0,01	0
HOMA-IR	2.23	1.41 - 3.04	< 0,01	>50
BMI (kg/m <sup>2</sup> )	5.07	4.21 - 5.94	< 0,01	0

### OP43 ENDOSCOPIC INTERNAL DRAINAGE FOR THE MANAGEMENT OF LEAK, FISTULA AND COLLECTION AFTER SLEEVE GASTRECTOMY IN 617 CONSECUTIVE PATIENTS

**Authors** Spota A<sup>1</sup>, Cereatti F<sup>1</sup>, Dumont JL<sup>1</sup>, Donatelli G<sup>1</sup>

**Institute** 1 Hôpital Privé des Peupliers, Ramsay Santé, Unité d'Endoscopie Interventionnelle, Paris, France

**DOI** 10.1055/s-0041-1724303

**Citation:** Spota A, Cereatti F, Dumont JL et al. OP43 ENDOSCOPIC INTERNAL DRAINAGE FOR THE MANAGEMENT OF LEAK, FISTULA AND COLLECTION AFTER SLEEVE GASTRECTOMY IN 617 CONSECUTIVE PATIENTS. *Endoscopy* 2021; 53: S20.

**Aims** Leaks, fistulae and post-operative collection may occur as a complication of Sleeve Gastrectomy in up to 10% of cases. Endoscopy plays a pivotal role in the management of adverse events following bariatric surgery. However a standardized treatment protocol is still lacking. The aim of this study is to evaluate the clinical outcome of Endoscopic Internal Drainage for the management of leaks, fistulae and collections following bariatric surgery.

**Methods** Retrospective observational single center study conducted from February 2012 through August 2020. All patients referred for management of AE after SG were inserted in a prospective database and retrospectively analyzed.

Endoscopic Internal Drainage was used as first line treatment in case of leaks, fistulae and collections. Leaks and fistulae were treated with double pigtail stent deployment in order to guarantee drainage within the gastrointestinal lumen, sepsis control, and second intention cavity obliteration. Collection were treated with EUS guided deployment of DPS or Lumen apposing metal stent.

**Results** 617 patients were enrolled in the study for leak (n = 300 – 48.6%), fistula (n = 285 – 46.2%) and collection (n = 32 – 5.2%). 83.3% were female with a mean age of 43.1 at index surgery. Median follow up was of 19.5 months. Overall clinical success was 84.7% whereas 15.3% of cases required revisional surgery after failure of EID. Clinical success according to type of AE was 89.5%, 78.5% and 90% for leak, fistula and collection respectively. 10/547 (1.8%) presented a clinical recurrence during follow up. A total of 28 (4.5%) AE related to endoscopic treatment occurred. At univariate logistic regression predictors of failure were: fistula (OR 2.012), combined endoscopic approach (OR 2.319), need for emergency surgery (OR 1.755) and previous endoscopic treatment (OR 4.818).

**Conclusions** First line early EID for the management of leak, fistula and post-operative collection after SG seems safe and effective with good long term results.

### OP44 REDO ENDOSCOPIC SLEEVE GASTROPLASTY: REPEATING DOES NOT MEAN FAILING

**Authors** Gallo C<sup>1</sup>, Matteo MV<sup>1</sup>, Boskoski I<sup>1</sup>, Bove V<sup>1</sup>, De Siena M<sup>1</sup>, Pontecorvi V<sup>1</sup>, Carlino G<sup>1</sup>, Laterza L<sup>1</sup>, Orlandini B<sup>1</sup>, Costamagna G<sup>1</sup>

**Institute** 1 Fondazione Policlinico A. Gemelli IRCCS, Rome, Italy

**DOI** 10.1055/s-0041-1724304

**Citation:** Gallo C, Matteo MV, Boskoski I et al. OP44 REDO ENDOSCOPIC SLEEVE GASTROPLASTY: REPEATING DOES NOT MEAN FAILING. *Endoscopy* 2021; 53: S20.

**Aims** Endoscopic Sleeve Gastroplasty (ESG) is an effective and repeatable bariatric procedure, thus some patients may need a redo ESG to increase weight loss. In this case series, we evaluate the technical aspects and short and medium-term outcomes of the redo ESG.

**Methods** A retrospective analysis was done on a prospective database reporting patients that underwent ESG between March 2017 and October 2020; patients who received a redo ESG because of progressive loss of satiety, weight regain, or insufficient weight loss were included. %EWL, %TBWL, %EBMIL, the Bariatric Analysis and Reporting Outcome System (BAROS) questionnaire and the Quality of Life (QoL) were assessed during follow-up.

**Results** Of 252 patients that underwent ESG, six required a redo ESG. Four redo ESG were performed within 12 months from the first ESG, whereas the remaining two were performed within 7 and 18 months. No perioperative adverse events occurred. One patient had 1-month follow-up, two of them reached 6-months and other two reached 12-months. Mean %EWL was 51% ± 16.5, 50% ± 19 and 40.5% ± 6.8 at 1, 6 and 12 months, respectively. Similarly, mean %TBWL and %EBMIL were 18.3% ± 5.8 and 51% ± 16.5 at 1 month, 18.6% ± 7.4 and 50% ± 19 at 6 months, 16.3% ± 4.6 and 40.5% ± 6.8 at 12 months. BAROS questionnaire mean score was 4.3 ± 1.3, 4.4 ± 1.2 and 3.7 ± 1.3 during follow-up. The only patient who reached 18-months follow-up reported a %EWL

Redo ESG outcomes	1-month follow-up	6-months follow-up	12-months follow-up
%EWL	51% ± 16.5	50% ± 19	40.5% ± 6.8
%TBWL	18.3% ± 5.8	18.6% ± 7.4	16.3% ± 4.6
%EBMIL	51% ± 16.5	50% ± 19	40.5% ± 6.8
BAROS questionnaire	4.3 ± 1.3	4.4 ± 1.2	3.7 ± 1.3

of 44.6%, a %TBWL and a %EBMIL of 18.3% and 44.6%, respectively, and a BAROS score of 2.5. All patients reported excellent satiety and significant QoL improvement after the procedure.

**Conclusions** According to our limited experience, redo ESG short and medium-term outcomes are satisfying in terms of satiety, weight loss and QoL. Repeating the procedure should thus not be considered as a failure, but as a second step of the treatment.

## OP45 SHORT TERM OUTCOMES OF ENDOSCOPIC SLEEVE GASTROPLASTY IN CLASS III OBESE PATIENTS: A CLINICAL, RETROSPECTIVE, SINGLE CENTER STUDY

**Authors** Pontecorvi V<sup>1</sup>, Bove V<sup>1</sup>, Gallo C<sup>1</sup>, Carlino G<sup>1</sup>, Laterza L<sup>2</sup>, Matteo MV<sup>1</sup>, De Siena M<sup>1</sup>, Orlandini B<sup>1</sup>, Papparella G<sup>1</sup>, Boskoski I<sup>1</sup>, Costamagna G<sup>1</sup>

**Institute** 1 Fondazione Policlinico Agostino Gemelli IRCSS, Digestive Endoscopic Unit, Rome, Italy; 2 Fondazione Policlinico Agostino Gemelli IRCSS, Gastroenterology Unit, Rome, Italy

**DOI** 10.1055/s-0041-1724305

**Citation:** Pontecorvi V, Bove V, Gallo C et al. OP45 SHORT TERM OUTCOMES OF ENDOSCOPIC SLEEVE GASTROPLASTY IN CLASS III OBESE PATIENTS: A CLINICAL, RETROSPECTIVE, SINGLE CENTER STUDY. *Endoscopy* 2021; 53: S21.

**Aims** Endoscopic Sleeve Gastroplasty (ESG) has spread as effective bariatric endoscopic procedure, especially addressed to class II and class I with comorbidities obesity. Our aim was to evaluate ESG efficacy in terms of weight loss and comorbidities improvement for class III obese patients (BMI>40kg/m<sup>2</sup>).

**Methods** We retrospectively analyzed patients that underwent ESG between January 2018 and June 2020 with baseline BMI>40kg/m<sup>2</sup> and who reached 12-months follow-up. Mean BMI, percentage of Excess Weight Loss (%EWL) and percentage of Total Body Weight Loss (%TBWL) were evaluated at 1, 3, 6 and 12 months. Comorbidities, such as type II diabetes (TIID), hyperglycemia (HI), arterial hypertension (AH) and obstructive sleep apnea syndrome (OSAS), were also analyzed.

**Results** Out of 52 patients (28 female, mean age 45±13.6, mean BMI 43.9±4.6 kg/m<sup>2</sup>), AH was observed in 22, HI in 19, OSAS in 7 and TIID in 2. Mean BMI, % EWL and %TWL were respectively 40.6±4.91kg/m<sup>2</sup>, 20±6.5% and 9.5±2.7% at 1 month, 38±4.83kg/m<sup>2</sup>, 31.9±10.4% and 15.5±5.2% at 3 months, 36.6±5kg/m<sup>2</sup>, 35.5±12% and 17.3±5.9% at 6 months, 34.8±5.5kg/m<sup>2</sup>, 38.5±16.6% and 20±11.9% at 12 months. ESG indication, sex, age and presence of comorbidities did not influence weight loss (p=ns). Of 32 patients, 25 (78%) registered an improvement in comorbidities within 6 months: AH improved in 16 patients (68%), HI in 11 patients (58%), TIID in both affected patients (100%) and OSAS in 4 cases (58%). These results were maintained at 12 months.

**Conclusions** In our limited experience, despite ESG proved to guarantee weight loss and comorbidities improvement in class III obese patients, it didn't solve obesity due to patients' high baseline BMI. Surgery should remain the first line treatment for class III obesity and ESG should be considered as a valid and less invasive alternative when surgery is not feasible.

## OP46 ENDOSCOPIC SLEEVE GASTROPLASTY FOR NON-ALCOHOLIC FATTY LIVER DISEASE

**Authors** Jagtap N<sup>1</sup>, Kalapala R<sup>1</sup>, Katakwar A<sup>2</sup>, Kanakagiri H<sup>3</sup>, Darisetty S<sup>3</sup>, Reddy DN<sup>1</sup>

**Institute** 1 Asian Institute of Gastroenterology, Medical Gastroenterology, Hyderabad, India; 2 Asian Institute of Gastroenterology, Bariatric Surgery, Hyderabad, India; 3 Asian Institute of Gastroenterology, Anaesthesia, Hyderabad, India

**DOI** 10.1055/s-0041-1724306

**Citation:** Jagtap N, Kalapala R, Katakwar A et al. OP46 ENDOSCOPIC SLEEVE GASTROPLASTY FOR NON-ALCOHOLIC FATTY LIVER DISEASE. *Endoscopy* 2021; 53: S21.

**Aims** Adequate weight loss can lead to reduction in steatosis, inflammation and fibrosis in patients with obesity and non-alcoholic fatty liver disease (NAFLD). We evaluated role of endoscopic sleeve gastroplasty(ESG) in patient with obesity and NAFLD.

**Methods** In this single center prospective study, consecutive patients with NAFLD who underwent ESG between November 2018 to May 2019 were included. The primary outcome was the impact of ESG on hepatic parameters: change in ALT, hepatic steatosis index(HSI), NAFLD fibrosis score(NFS), FIB-4 index(FIB-4) and aspartate aminotransferase(AST)-to-platelet ratio index(APRI) from baseline to 6 and 12 months. Secondary outcomes included change in HbA1c, percentage weight loss and safety. Analysis of variance with repeated measures was used for statistical analysis.

**Results** A total of 26 patients (mean age(SD) 41.5(9.58)years;16 females) with mean(SD) weight of 99.43(21.89) at baseline were included. There was significant improvement in ALT (mean ± SD) from baseline of 59.54 ± 17.02 to 49.50 ± 11.72 and 48.42 ± 13.22 at 6 and 12 months (p 0.001). Mean(SD) NFS was significantly improved from 0.228(1.00) at baseline to -0.202(1.16) and -0.552 (1.08) at 6 and 12 months(p 0.001). Mean(SD) HSI, FIB-4 and APRI scores significantly reduced from baseline to 6 and 12 months(p 0.001). There was 18.07% total body weight loss at 12 months, with significant improvement in HbA1c. There were no major adverse events.

**Conclusions** ESG is a safe and effective treatment option for NAFLD and obesity by achieving significant weight loss. Rigorous randomized trials are required to incorporate ESG in NAFLD treatment algorithm.

---

Thursday, 25 March 2021

16:00 – 16:45

Colorectal Cancer (CRC) Screening  
(WEO-ESGE joint session)

Room 3

---

## OP47 EFFECT OF APPLYING THE 2020 ESGE POST-POLYPECTOMY SURVEILLANCE GUIDELINES ON THE SURVEILLANCE RECOMMENDATIONS: STUDY ON A POPULATION-BASED CRC SCREENING PROGRAM

**Authors** Bustamante-Balén M<sup>1</sup>, García-Campos M<sup>1</sup>, Alonso N<sup>1</sup>, Zúñiga VL<sup>1</sup>, Sanchez C<sup>1</sup>, Argüello L<sup>1</sup>, Pons-Beltrán V<sup>1</sup>

**Institute** 1 La Fe University Hospital, Gastrointestinal Endoscopy Unit, Valencia, Spain

**DOI** 10.1055/s-0041-1724307

**Citation:** Bustamante-Balén M, García-Campos M, Alonso N et al. OP47 EFFECT OF APPLYING THE 2020 ESGE POST-POLYPECTOMY SURVEILLANCE GUIDELINES ON THE SURVEILLANCE RECOMMENDATIONS: STUDY ON A POPULATION-BASED CRC SCREENING PROGRAM. *Endoscopy* 2021; 53: S21.

**Aims** Post-polypectomy surveillance is one of the most frequent indications for a colonoscopy, representing a heavy burden for endoscopy units. Our aim was to compare the surveillance intervals recommended by the recent ESGE 2020 guidelines with the ones recommended by the ESGE 2013 and the USMUSTF 2019 guidelines in our CRC screening population.

**Methods** Retrospective review of our CRC screening database, integrated in the population-based CRC screening program of the Valencian region in Spain. Only index complete screening colonoscopies on individuals 50 to 75 years-old, with an at least adequate bowel preparation (Boston 6) and performed from April 2017 to May 2020 were included. We compared the surveillance recommendations of each guideline, identified discrepancies and evaluated the influence of villous pattern and number of detected adenomas on these discrepancies.

**Results** 1284 colonoscopies were included. ►**Tab. 1** summarizes the surveillance recommendations of the three guidelines. Almost a third of the 3 yrs. colonoscopies proposed by ESGE 2013 and by USMUSTF 2019 changed to 10 yrs. following ESGE 2020.

The differences between both ESGE guidelines were attributable to the removal of villous component as a high-risk criterium (36, 25.7%), categorizing 3-4 adenomas as low risk (71, 50.7%) or both (26, 18.6%). Similarly, the differences between ESGE 2020 and USMUSTF 2019 was 40 (23.9%) for villous component, 81 (48.5%) for number of adenomas and 43 (25.7%) for both.

**Conclusions** Applying the new ESGE 2020 guidelines reduces in almost a third the number of colonoscopies in the third-year control. Disappearance of the villous component and 3-4 adenomas as high-risk factors are the main reason for this change.

ESGE 2020	ESGE 2013		USMUSTF 2019	
	10 yrs	3 yrs	10 yrs*	3 yrs**
10 yrs	796 (100%)	140 (30.3%)	795 (100%)	141 (30.4%)
3 yrs	0	322 (69.7%)	0	322 (69.4%)

\* Includes 10yrs, 7-10 yrs and 5-10 yrs; \*\* Includes 3-5 yrs and 3 yrs

Thursday, 25 March 2021 16:00 – 16:45  
Risk factor assessment for gastric cancer Room 5

## OP48 SYNCHRONOUS GASTRIC NEOPLASTIC LESIONS: CLINICAL ANALYSIS AND THERAPEUTIC APPROACH

**Authors** Rodríguez-Carrasco M<sup>1</sup>, Libânio D<sup>1,2</sup>, Pimentel-Nunes P<sup>1,2,3</sup>, Afonso LP<sup>4</sup>, Monterio P<sup>4</sup>, Dinis-Ribeiro M<sup>1,2</sup>

**Institute** 1 Portuguese Oncology Institute of Porto, Gastroenterology Department, Porto, Portugal; 2 Faculty of Medicine, University of Porto, MEDCIDS - Department of Community Medicine, Health Information and Decision, Porto, Portugal; 3 Faculty of Medicine, University of Porto, Department of Surgery and Physiology, Porto, Portugal; 4 Portuguese Oncology Institute of Porto, Pathology Department, Porto, Portugal  
DOI 10.1055/s-0041-1724308

**Citation:** Rodríguez-Carrasco M, Libânio D, Pimentel-Nunes P et al. OP48 SYNCHRONOUS GASTRIC NEOPLASTIC LESIONS: CLINICAL ANALYSIS AND THERAPEUTIC APPROACH. *Endoscopy* 2021; 53: S22.

**Aims** Synchronous gastric neoplastic lesions have been reported in up to 10.9% of patients with gastric cancer and the most adequate strategy (simultaneous resection vs deferment) is unclear since safety and outcomes of the two strategies have been rarely evaluated. We aimed to analyse the prevalence of gastric synchronous lesions, possible risk factors for its diagnosis, and outcomes of simultaneous resection.

**Methods** Retrospective study including data regarding endoscopic submucosal dissection (ESD) procedures performed between January/2005-May/2020 in our centre. Synchronous lesions detected prior/during ESD were defined as “detected-synchronous” (dSyn). Simultaneous resection was considered when ≥2 lesions were removed during the same procedure.

**Results** In the 632 ESD, 10.9% had synchronous lesions (54 (8.5%) corresponding to dSyn and 15 (2.4%) synchronous lesions detected during the 1<sup>st</sup> year of follow-up). The majority of dSyn had distal or middle location (55.5% and 31.5%, respectively) and morphology type 0-IIa/IIb or 0-II with depressed component (55.5% and 26%, respectively). Similarly, most of the missed lesions (93.3%) had 0-IIa morphology and distal location (60%). No factors related to patients nor primary-lesions showed a significant influence on the occurrence of synchronous. Among dSyn, the most common therapeutic approach was

simultaneous resection (92.6%). No significant differences were found between both groups regarding R0, complication rate, procedural time, and hospitalization time. The reasons for deferments were lack of operational time (50%) and suspicion of non-curative resection in the primary lesion (50%, which had middle and distal location). Three of the four postponements underwent a second ESD and two met curative criteria. Accordingly, 50% of the deferments could have benefited from simultaneous resection.

**Conclusions** A careful endoscopic examination is essential to detect synchronous lesions, particularly those with 0-II with or without depressed component in morphology. Simultaneous gastric resection is safe, feasible, and may be advantageous for lesions without suspicion of deep invasion in primary lesion.

## OP49 FAMILY HISTORY OF GASTRIC CANCER AND THE RISK OF PROGRESSION OF GASTRIC PREMALIGNANT CONDITIONS: A PROSPECTIVE, 10-YEAR ENDOSCOPIC FOLLOW-UP STUDY

**Authors** Garrido M<sup>1</sup>, Viscaíno JR<sup>2</sup>, Dinis-Ribeiro M<sup>3</sup>, Carneiro F<sup>4</sup>, Pedroto I<sup>1</sup>, Marcos-Pinto R<sup>1</sup>

**Institute** 1 Centro Hospitalar Universitário do Porto, Gastroenterology, Porto, Portugal; 2 Centro Hospitalar Universitário do Porto, Pathology, Porto, Portugal; 3 Portuguese Institute Oncology, Gastroenterology, Porto, Portugal; 4 Centro Hospitalar Universitário de São João, Pathology, Porto, Portugal  
DOI 10.1055/s-0041-1724309

**Citation:** Garrido M, Viscaíno JR, Dinis-Ribeiro M et al. OP49 FAMILY HISTORY OF GASTRIC CANCER AND THE RISK OF PROGRESSION OF GASTRIC PREMALIGNANT CONDITIONS: A PROSPECTIVE, 10-YEAR ENDOSCOPIC FOLLOW-UP STUDY. *Endoscopy* 2021; 53: S22.

**Aims** We aimed to evaluate the progression of gastric precancerous conditions and the incidence of gastric dysplasia/neoplasia in first-degree relatives of gastric cancer patients.

**Methods** We performed a single-centre, 10-year prospective follow-up cohort study, enrolling first-degree relatives (FDR) of early-onset gastric cancer (EOGC) patients. All individuals were submitted to high-definition upper endoscopy with white-light and narrow-band imaging evaluation, gastric biopsies according to the updated Sydney system protocol, OLGA and OLGIM stage evaluation and *H. pylori* infection at inclusion –T0 and at year 10 (T10).

**Results** We enrolled 100 FDR at T0; of these 50 FDR were included at T1: 66.0% females, with a mean age of 51.4±12.8 years. At baseline(T0), 74.0% had *H. pylori* infection and 18.0%/14.0% had high-risk (III/IV) OLGA/OLGIM stages, respectively. The median time between the first (T0) and the follow-up endoscopy (T10) was 9.87±0.55 years.

In the follow-up endoscopy (T10) we found extensive intestinal metaplasia (EGGIM score ≥5), high-risk OLGA and OLGIM stages in 14.0%, 14.0% and 16.0% of the patients, respectively. *H. pylori* infection was detected in 48.0% of the patients. OLGIM stage remained unchanged in 30 patients (60.0%) whereas 11 patients (22.0%) had OLGIM stage progression, However, only two patients progressed from low-risk to high-risk stages, both with persistent *H. pylori* infection (not eradicated).

Overall, OLGA and OLGIM stages were not significantly different from T0 and T10. However, in subgroup analysis, patients with OLGIM progression were older (57.5±10.3 vs 49.6±13.1 years, p=0.05) and all over 40 years old (30.6% vs 0.0%, p=0.019), at T10. OLGIM stage progression was more frequent in *H. pylori* positive patients (29.2% vs 15.4%, p=0.144). No gastric dysplasia was diagnosed.

**Conclusions** In a follow-up period of ~10 years, we showed a progression of OLGIM stages among first-degree relatives of gastric cancer patients over 40 years, with persistent *H. pylori* infection.

## OP50 MAGNIFYING ENDOSCOPY FOR DIAGNOSIS OF GASTRIC INTESTINAL METAPLASIA: CAN WE SEE THE “LIGHT BLUE CREST” SIGN WITH I-SCAN OPTICAL ENHANCEMENT?

**Authors** Kashin S<sup>1</sup>, Kuvaev R<sup>1,2</sup>, Kraynova E<sup>3</sup>, Vidyaeva N<sup>4</sup>

**Institute** 1 Yaroslavl Regional Cancer Hospital, Endoscopy, Yaroslavl, Russian Federation; 2 Pirogov Russian National Research Medical University, Gastroenterology, Yaroslavl, Russian Federation; 3 Yaroslavl Regional Cancer Hospital, Pathology, Yaroslavl, Russian Federation; 4 Yusupov Hospital, Endoscopy, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724310

**Citation:** Kashin S, Kuvaev R, Kraynova E et al. OP50 MAGNIFYING ENDOSCOPY FOR DIAGNOSIS OF GASTRIC INTESTINAL METAPLASIA: CAN WE SEE THE “LIGHT BLUE CREST” SIGN WITH I-SCAN OPTICAL ENHANCEMENT?. *Endoscopy* 2021; 53: S23.

**Aims** The aim of this study was to evaluate the diagnostic efficacy of “light blue crest” (LBC) sign in diagnosis of gastric intestinal metaplasia with magnifying i-scan optical enhancement endoscopy (PENTAX Medical, Japan).

**Methods** 86 gastric lesions in 46 patients (mean age 52.1 years, SD=10.2, 54% male, 46% female) were inspected with magnifying endoscopy and i-scan optical enhancement (EPK-i7010, endoscope EG-2990Zi, PENTAX Medical). LBC was defined as a fine, blue-white line on the crests of the epithelial surface/gyri under magnifying observation with image enhancement endoscopy. Forceps biopsy was performed for a histological evaluation of lesions.

**Results** From 86 gastric lesions GIM was confirmed in 31 cases (complete GIM – in 14 cases, incomplete GIM – in 8 cases, mixed GIM – in 9 cases). LBC sign was observed in 22 cases. All lesions with detected LBC confirmed as GIM. Sensitivity, specificity, accuracy, positive predictive value, negative predictive value for LBC sign in diagnosis of GIM were 0.71, 1.00, 0.90, 1.00, 0.86, respectively.

**Conclusions** Magnifying endoscopy with i-scan optical enhancement technology provides accurate diagnosis of GIM by using LBC sign. Further studies are needed to evaluate the efficacy of different previously described endoscopic features of IM using new optical technologies.

## OP51 ENDOSCOPIC DIAGNOSIS OF HELICOBACTER PYLORI INFECTION BY THE ARRANGEMENT OF COLLECTING VENULES IN PATIENTS TREATED WITH PROTON PUMP INHIBITORS: A MULTICENTER VALIDATION TRIAL IN EUROPEAN POPULATION

**Authors** Garcés-Duran R<sup>1</sup>, Galdin-Ferreira M<sup>2</sup>, Delgado-Guillena P<sup>3</sup>, Cuatrecasas M<sup>4</sup>, Córdoba H<sup>5</sup>, García-Rodríguez A<sup>1</sup>, Rodrigo Calvo MT<sup>6</sup>, Jimeno M<sup>7</sup>, Araujo I<sup>1</sup>, Ginès A<sup>5</sup>, Llach J<sup>8</sup>, Fernández-Esparrach C<sup>5</sup>

**Institute** 1 Hospital Clínic of Barcelona. University of Barcelona, Endoscopy Unit. Institut Clínic de Malalties Digestives i Metabòliques, Barcelona, Spain; 2 Hospital of Vic, Endoscopy Unit, Vic, Spain; 3 General Hospital of Granollers, Endoscopy Unit, Granollers, Spain; 4 Hospital Clínic of Barcelona. University of Barcelona. IDIBAPS. CIBEREHD, Pathology Department, Barcelona, Spain; 5 Hospital Clínic of Barcelona. University of Barcelona. IDIBAPS. CIBEREHD, Endoscopy Unit. Institut Clínic de Malalties Digestives i Metabòliques, Barcelona, Spain; 6 Hospital Clínic of Barcelona. University of Barcelona, Pathology Department, Barcelona, Spain; 7 General Hospital of Granollers, Pathology Department, Granollers, Spain; 8 Hospital Clínic of Barcelona. University of Barcelona. IDIBAPS, Endoscopy Unit. Institut Clínic de Malalties Digestives i Metabòliques, Barcelona, Spain

**DOI** 10.1055/s-0041-1724311

**Citation:** Garcés-Duran R, Galdin-Ferreira M, Delgado-Guillena P et al. OP51 ENDOSCOPIC DIAGNOSIS OF HELICOBACTER PYLORI INFECTION BY THE ARRANGEMENT OF COLLECTING VENULES IN PATIENTS TREATED WITH PROTON PUMP INHIBITORS: A MULTICENTER VALIDATION TRIAL IN EUROPEAN POPULATION. *Endoscopy* 2021; 53: S23.

**Aims** Regular arrangement of collecting venules (RAC) in gastric mucosa accurately identifies patients without *Helicobacter pylori* (*H. pylori*) infection. The aim of our study was to evaluate the value of RAC in patients under proton pump inhibitors (PPIs) and the reproducibility in a European country.

**Methods** A multicenter prospective study with high-definition endoscopes without magnification was performed by 4 endoscopists. Patients treated with PPIs were not excluded. Image capture of the lesser gastric curvature and gastric biopsies were performed during procedures. Images were evaluated by all the operators and reevaluated 2 weeks later in a different order. A set of 20 images was used for the training phase. Presence of starfish-like minute points regularly distributed throughout lesser curvature on the selected pictures was considered RAC+.

**Results** 174 patients were included and 85 (48.9%) were under PPIs. *H. pylori* infection was diagnosed in 29 patients (16.7%): 10/85 with PPIs and 19/89 without (11.8% vs. 21.3%;  $p = 0.09$ ). 25.9% of patients taking PPIs were RAC+, and all of them were free of *H. pylori* infection, with a sensitivity and NPV of 100%. Patients with RAC+ pattern were significantly younger ( $45.8 \pm 12.9$  vs.  $56.1 \pm 16.1$  years;  $p = 0.040$ ). Kappa values for inter-observer and intra-observer agreement were substantial (0.786) and excellent (0.906), respectively.

**Conclusions** The endoscopic diagnosis of *H. Pylori* by RAC is an easy-to-learn and highly reproducible technique, even when the patient has taken PPIs. Our results warrant the incorporation of RAC as a real-time diagnostic method for *H. Pylori* infection in Western countries.

## OP52 WHITE LIGHT ENDOSCOPY VERSUS MAGNIFICATION ENDOSCOPY WITH OPTICAL ENHANCEMENT FOR THE EVALUATION OF H.PYLORI GASTRIC MUCOSAL CHANGES AND ATROPHIC GASTRITIS: A RANDOMIZED TRIAL

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Cifuentes C<sup>1</sup>, Del Valle R<sup>1</sup>, Alvarado H<sup>1</sup>, Armas D<sup>1</sup>, Lopez AC<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute** 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

**DOI** 10.1055/s-0041-1724312

**Citation:** Robles-Medranda C, Oleas R, Alcivar-Vasquez J P et al. OP52 WHITE LIGHT ENDOSCOPY VERSUS MAGNIFICATION ENDOSCOPY WITH OPTICAL ENHANCEMENT FOR THE EVALUATION OF H.PYLORI GASTRIC MUCOSAL CHANGES AND ATROPHIC GASTRITIS: A RANDOMIZED TRIAL. *Endoscopy* 2021; 53: S23.

**Aims** We aimed to compare white light endoscopy versus magnification endoscopy with an optical enhancement for the evaluation of *H. pylori* gastric mucosal changes and atrophic gastritis.

**Methods** A single-center, cross-over diagnostic trial. Consecutive patients complaining of dyspepsia (March/2020-Oct/2020) were submitted for a white light EGD and then to a magnification endoscopy with optical enhancement (MEOE) by another independent operator. Gastric mucosa was evaluated using a standardized protocol and biopsies were taken following Sydney guidelines. The final diagnosis was based on histopathology results.

**Results** 149 patients were included; the median age was 50 years and 67.51% of patients were female. 125/149 of patients had non-atrophic gastritis in comparison to 12/149 who had chronic atrophic gastritis. White light endoscopic had a sensitivity, specificity, PPV, NPV, and agreement of 67%, 96%, 62%, 97%, and 94% for defining chronic atrophic gastritis; similar to magnification endoscopy with optical enhancement that had a sensitivity, specificity, PPV, NPV and agreement of 58%, 91%, 37%, 96% 89%, respectively. Regarding *H. pylori* infection, white light endoscopy had a sensitivity, specificity, PPV, NPV, and agreement of 72%, 43%, 36%, 77%, 52%, respectively; similar to magnification endoscopy with optical enhancement that had a sensitivity, specificity, PPV, NPV and agreement of 80%, 39%, 37%, 82%, 82%, 52%.



**Conclusions** There is no significant difference between white light endoscopy and magnification endoscopy with optical magnification for defining normal gastric mucosa, chronic atrophic gastritis, and *H. pylori* infection in patients with dyspepsia. Larger, multicenter trials with more participants are necessary to validate these results.

Thursday, 25 March

2021

16:00 – 16:45

Advanced Cholangioscopy techniques: Are we ready for prime time?

Room 6

### OP53 ARTIFICIAL INTELLIGENCE MODEL FOR THE CHARACTERIZATION OF BILIARY STRICTURES DURING REAL-TIME DIGITAL CHOLANGIOSCOPY: A PILOT STUDY

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Mendez JC<sup>2</sup>, Puga-Tejada M<sup>1</sup>, Del Valle R<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute** 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 2 MD Consulting Group, Guayaquil, Ecuador

**DOI** 10.1055/s-0041-1724313

**Citation:** Robles-Medranda C, Oleas R, Alcivar-Vasquez J et al. OP53 ARTIFICIAL INTELLIGENCE MODEL FOR THE CHARACTERIZATION OF BILIARY STRICTURES DURING REAL-TIME DIGITAL CHOLANGIOSCOPY: A PILOT STUDY. *Endoscopy* 2021; 53: S24.

**Aims** We aimed to develop an artificial intelligence model for a real-time evaluation during digital cholangioscopy.

**Methods** A single-center, pilot study. We collected 23 digital cholangioscopy videos for the training of the AI models using automated machine learning (AI Works, MD Consulting group, Ecuador). Three parameters were trained by two expert endoscopists. The AI classifies cholangioscopy findings as normal aspect, inflammatory aspect, and suggestive of malignancy. Biliary strictures' final diagnosis was based on cholangioscopy visual impression, intraductal biopsy, and 6-months follow-up outcomes.

**Results** A total of 1903 samples (1714 training and 189 testings) were used to train the AI. The automated learning process took 75 hours (2000 badges per parameter). The developed model reached a mean average precision (mAP) of 94.64%. The developed model had a total loss of 0.1988. The F1-score (harmonic mean of sensitivity and precision) of 92%. The average IoU (overall between model prediction and expert marking) was 81.63%. For real-time detection, the processing speed of the model using an IntelCoreI7 processor with 16 Gb of RAM was 5-7 FPS (frames per second). Two expert endoscopists tested the AI with twenty videos and twenty-live cholangioscopy procedures from histology-confirmed cholangiocarcinoma patients. The AI model accurately detected the malignancy pattern in all cases.

**Conclusions** The proposed AI model accurately recognizes and classifies biliary strictures during recorded videos and on real-time digital cholangioscopy procedures. Future evaluations of AI cholangioscopy are necessary to confirm these results.

### OP54V REMNANT BILIARY PAPILLOMATOSIS TREATED WITH DIRECT PER-ORAL CHOLANGIOSCOPIC POLYPECTOMY

**Authors** Inderson A<sup>1</sup>, van Hooft JE<sup>1</sup>

**Institute** 1 Leiden University Medical Center, Gastroenterology and Hepatology, Leiden, Netherlands

**DOI** 10.1055/s-0041-1724314

**Citation:** Inderson A, van Hooft JE. OP54V REMNANT BILIARY PAPILLOMATOSIS TREATED WITH DIRECT PER-ORAL CHOLANGIOSCOPIC POLYPECTOMY. *Endoscopy* 2021; 53: S24.

A 53-year old male was diagnosed with biliary papillomatosis and was treated with hemi-hepatectomy and Roux-en-Y reconstruction. On follow-up with Spyglass cholangioscopy one year later, residual or recurrent papillomatosis was found in the remnant distal bile duct. Histology showed low grade dysplasia. During subsequent Direct Per-Oral Cholangioscopy (DPOC), this residual tissue was treated with snare polypectomy and Argon Plasma Coagulation. Histology showed high grade dysplasia. DPOC cholangioscopic resection of remnant biliary papillomatosis therefore may facilitate histologic staging, but radicality is yet to be determined.

### OP55 A SINGLE-CENTRE RETROSPECTIVE STUDY INTO DIAGNOSIS AND MANAGEMENT OF MIRIZZI SYNDROME USING SINGLE-OPERATOR PERORAL CHOLANGIOSCOPY

**Authors** Thomas G<sup>1</sup>, Martin H<sup>1</sup>, Webster G<sup>1</sup>

**Institute** 1 University College London, Pancreatobiliary, London, United Kingdom

**DOI** 10.1055/s-0041-1724315

**Citation:** Thomas G, Martin H, Webster G. OP55 A SINGLE-CENTRE RETROSPECTIVE STUDY INTO DIAGNOSIS AND MANAGEMENT OF MIRIZZI SYNDROME USING SINGLE-OPERATOR PERORAL CHOLANGIOSCOPY. *Endoscopy* 2021; 53: S24.

**Aims** Mirizzi Syndrome was first described in 1948 and refers to obstruction of the bile duct by impacted gallstones in the cystic duct or gallbladder. Management with conventional ERCP is often difficult. We report our single centre experience using single-operator cholangioscopy and electrohydraulic lithotripsy.

**Methods** All patients who were demonstrated to have a Mirizzi syndrome and underwent Spyglass DS cholangioscopy at our centre from 2013-2019 were included for analysis. From clinical records and the endoscopy reporting tool; patient demographics, previous procedures, stone visualisation, procedure success, complications and ongoing management were assessed.

**Results** Data on 38 patients was analysed (64% female, mean age 61 years (range 24-88)). 16/38 (42.1%) had undergone previous cholecystectomy. 22 cases were confirmed as Mirizzi syndrome on prior imaging, 12 had suspected difficult CBD/CHD stones and 2 had suspected strictures related to cholangiocarcinoma. Patients had undergone a mean of 2.3 ERCPs (range 0-9) prior to referral. At cholangioscopy, stone(s) causing Mirizzi syndrome were visualised in 36/38 cases (94.7%). Of these, complete stone clearance using cholangioscopy and electrohydraulic lithotripsy was achieved in 31/38 (81.6%) or 31/36 of those with stones visualised. 29/31 needed a single procedure and, 2/31 needing 2 procedures. One patient had rigors at the end of the procedure but otherwise, there were no early complications. Following successful stone clearance, 17/22 were referred for cholecystectomy (patients with previous cholecystectomy n = 16). Of patients (n = 7) who did not achieve clearance, 1 was managed with surgery and 6 with stenting alone.

**Conclusions** The management of Mirizzi syndrome is challenging using conventional ERCP and patients may undergo multiple endoscopic procedures or need complex surgery. Visualisation of the obstructing stone using cholangioscopy provides a high probability of stone clearance using direct lithotripsy, may reduce the need for additional interventions and should be considered early in the management of Mirizzi syndrome.

### OP56 MULTICENTER ASSESSMENT OF CAPABILITIES, EFFECTIVENESS AND SAFETY OF SINGLE OPERATOR PERORAL TRANSPAPILLARY CHOLANGIOPANCREATOSCOPY

**Authors** Fedorov ED<sup>1</sup>, Budzinskiy S<sup>1</sup>, Gabriel S<sup>2</sup>, Bikov M<sup>3</sup>, Trusov I<sup>4</sup>, Shapovalyanz S<sup>1</sup>, Vorobieva E<sup>1</sup>, Dinko V<sup>2</sup>, Shava V<sup>3</sup>, Gladishev D<sup>4</sup>

**Institute 1** N.I. Pirogov Russian National Research Medical University, Moscow, Russian Federation; **2** Regional Clinical Hospital № 2, Krasnodar, Russian Federation; **3** Regional Clinical Hospital № 1 name of Prof. S.V. Ochapovsky, Krasnodar, Russian Federation; **4** Municipal Hospital № 40, Saint Petersburg, Russian Federation  
**DOI** 10.1055/s-0041-1724316

**Citation:** Fedorov ED, Budzinskiy S, Gabriel S et al. OP56 MULTICENTER ASSESSMENT OF CAPABILITIES, EFFECTIVENESS AND SAFETY OF SINGLE OPERATOR PERORAL TRANSPAPILLARY CHOLANGIOPANCREATOSCOPY. *Endoscopy* 2021; 53: S24.

**Aims** Assessment of the capabilities of the SpyGlass system in the diagnosis and treatment of diseases of the pancreato-biliary zone.

**Methods** From 12.2017 to 12.2020 we performed 191 single operator cholangiopancreatoscopies (SOC) in 188 patients (m-83, f-108; ranged 25-89 years; average age 57.2±32 years) using SpyGlass (Boston Scientific) in 4 leading Russian hospitals. All patient and cholangiopancreatotomy data were recorded in the national registry. There were 164 cholangioscopies and 27 pancreatoscopies. The indications for cholangioscopy were: undifferentiated strictures (97/188-51.6%), large stones (42/188-22.3%), "difficult strictures", when it was impossible guidewire installation with traditional way (15/188-8%), postoperative benign strictures with ligatures and clips (11/188-5.8%); for pancreatotomy – undifferentiated pancreatic strictures (13/188-6.9%), morphologic verification of IPMN (3/188-1.6%), large virsungolites (8/188-4.2%) and assessment of the spread of major papilla adenoma on pancreatic duct (2/188-1.1%).

**Results** The overall technical success of SOC was 96.3% (184/191). Intraductal biopsy was successful in 85/87-97.7% cases. Cholangiocarcinoma was obtained in 52(61.2%) cases, benign strictures-in others. Therapeutic interventions were successful in 64/70-91.4% cases (laser lithotripsy of bile duct stones – 14/15, electrohydraulic lithotripsy of bile duct stones – 14/15 and of pancreatic duct stones – 4/7, guidewire placement under visual control and further stenting – 22/22, removal of ligatures(7) and clips(4) of bile duct – 11/11). We had 7 (3.8%) complications – acute pancreatitis(3), bleeding(1) and cholangitis(3). Lethal outcomes after retrograde interventions not directly related to the SOC itself occurred in 2(1.1%) patients at 5(ongoing pancreatic necrosis) and 3 day (multiple organ failure associated with COVID-19) after ERCP.

**Conclusions** The opportunity of widespread use of SOC system in daily work for direct endoscopic examination of ductal systems and performing invasive interventions under direct visual control provides new opportunities for increasing the level of diagnosis and the effectiveness of therapeutic interventions up to 96.3%, without increasing the number of side effects during retrograde interventions.

## OP57V INTRAHEPATIC BILE DUCT STONE TREATMENT WITH A CHOLANGIOSCOPIC-ASSISTED BASKET

**Authors** Bassi M<sup>1</sup>, Apolito P<sup>1</sup>, Landi S<sup>1</sup>, Gherzi S<sup>1</sup>, Dabizzi E<sup>1</sup>, Cennamo V<sup>1</sup>  
**Institute 1** Maggiore Hospital, Ausl Bologna, Gastrointestinal and Interventional Endoscopy Unit, Bologna (Italy), Italy  
**DOI** 10.1055/s-0041-1724317

**Citation:** Bassi M, Apolito P, Landi S et al. OP57V INTRAHEPATIC BILE DUCT STONE TREATMENT WITH A CHOLANGIOSCOPIC-ASSISTED BASKET. *Endoscopy* 2021; 53: S25.

We report a case of a 68-year-old man, admitted to our Unit for jaundice and difficult common bile duct stones.

Patient underwent endoscopic retrograde cholangiopancreatography and cholangiography confirmed multiple common bile duct stones. After a partial stone clearance with sphincterotomy and balloon extraction, occlusion cholangiogram highlighted a residual 7 mm stone of the left hepatic duct. Subsequent cholangioscopic evaluation showed the stone impacted in an angulated duct. The stone was extracted with the SpyGlass retrieval basket (Boston Scientific, Marlborough, Massachusetts) under cholangioscopic guidance, on the

basis of its difficult location, with success and without post-procedural major adverse events.

Thursday, 25 March 2021

17:00 – 17:45

EUS-guided biliary drainage: From theory to practice Room 5

## OP58V EUS-CHOLECYSTOGASTROSTOMY FOLLOWED BY CHOLANGIOSCOPY WITH SPYGLASS THROUGH THE LUMEN OF THE LAMS STENT AND LITHOTRIPSY OF GALLBLADDER STONES

**Authors** Raiter A<sup>1</sup>, Kozłowska-Petriczko K<sup>2</sup>, Petriczko J<sup>3</sup>, Wiechowska-Kozłowska A<sup>4</sup>, Pawlak KM<sup>4</sup>

**Institute 1** Specialist Hospital of Alfred Sokolowski, Department of Endoscopy, Wałbrzych, Poland; **2** SPWSZ Hospital, Department of Gastroenterology and Internal Medicine, Szczecin, Poland; **3** Pomeranian Medical University, Department of Plastic, Endocrine and General Surgery, Szczecin, Poland; **4** Hospital of the Ministry of Internal Affairs, Department of Gastroenterology, Szczecin, Poland  
**DOI** 10.1055/s-0041-1724318

**Citation:** Raiter A, Kozłowska-Petriczko K, Petriczko J et al. OP58V EUS-CHOLECYSTOGASTROSTOMY FOLLOWED BY CHOLANGIOSCOPY WITH SPYGLASS THROUGH THE LUMEN OF THE LAMS STENT AND LITHOTRIPSY OF GALLBLADDER STONES. *Endoscopy* 2021; 53: S25.

An 88-year-old male with cholangitis (bile stone 2x3 cm) and empyema of the gallbladder was disqualified from surgery due to severe comorbidities. The complex endoscopic treatment was planned. Two ERCP procedures with a successful cholangioscopy (Spyglass, Spyscope BS), followed by the electrohydraulic lithotripsy (EHL; Autolith BS) of the CBD stone were performed. Additionally, the EUS guided Hot Axios stent (10x10mm) for cholecystogastrostomy creation was implanted. The last procedure was a cholecystoscopy through the Hot Axios stent lumen, using Spyglass (via the working channel of the colonoscope) with EHL of gallstones. The treatment was successful. Presently, the patient remains without symptoms.

## OP59V RENDEZVOUS ERCP VIA EUS-GUIDED GALLBLADDER DRAINAGE TO SALVAGE LUMEN-APPOSING METAL STENT (LAMS) DISLODGE MENT DURING EUS-GUIDED CHOLEDOCHODUODENOSTOMY

**Authors** Sanchez-Ocaña R<sup>1</sup>, de Benito Sanz M<sup>1</sup>, Najera Muñoz R<sup>1</sup>, Chavarria Herbozo C<sup>1</sup>, de la Serna Higuera C<sup>1</sup>, Perez-Miranda M<sup>1</sup>  
**Institute 1** Hospital Universitario Rio Hortega, Gastroenterology, Valladolid, Spain  
**DOI** 10.1055/s-0041-1724319

**Citation:** Sanchez-Ocaña R, de Benito Sanz M, Najera Muñoz R et al. OP59V RENDEZVOUS ERCP VIA EUS-GUIDED GALLBLADDER DRAINAGE TO SALVAGE LUMEN-APPOSING METAL STENT (LAMS) DISLODGE MENT DURING EUS-GUIDED CHOLEDOCHODUODENOSTOMY. *Endoscopy* 2021; 53: S25.

Biliary (distal) flange dislodgment occurred during EUS-choledochoduodenostomy with LAMS for unresectable pancreatic malignancy. Guidewire dislodgment precluded a bridging stent. Aerobilia hampered repeat EUS-guided puncture. The gallbladder was used as a surrogate target for biliary drainage. A 15-mm cholecystogastric LAMS was placed under EUS-guidance. To minimize choledochal leakage, rendezvous ERCP was also undertaken. Through-the-LAMS cholecystoscopy with a gastroscope allowed antegrade transcystic guidewire passage into the duodenum. Parallel cannulation with a slit sphincterotome allowed fully-covered biliary metal stent placement across the stricture, overlapping the choledochal perforation. The dislodged biliary LAMS was removed, closing with hemoclips the duodenal perforation. The patient recovered uneventfully.

## OP60V COMPLETE SURGICAL TRANSECTION OF THE COMMON BILE DUCT: COMBINED EUS AND ERCP APPROACH

**Authors** Martínez de Acitores D<sup>1</sup>, Ubieta V<sup>1</sup>, Zabalza L<sup>1</sup>, Uribarri L<sup>1</sup>, Gonzalez de la Higuera B<sup>1</sup>, Gomez M<sup>1</sup>, Estremera F<sup>1</sup>, Vila JJ<sup>1</sup>

**Institute** 1 Complejo Hospitalario de Navarra, Endoscopy Unit.

Gastroenterology Dpt., Pamplona, Spain

DOI 10.1055/s-0041-1724320

**Citation:** Martínez de Acitores D, Ubieta V, Zabalza L et al. OP60V COMPLETE SURGICAL TRANSECTION OF THE COMMON BILE DUCT: COMBINED EUS AND ERCP APPROACH. *Endoscopy* 2021; 53: S26.

Complete transection of the common bile duct is a severe complication of hepatobiliary surgery, classically treated surgically. Endoscopic ultrasonography-guided rendezvous (EUS-RV) has been used as a bridge to surgery or definitive treatment. A 36-year-old woman presented with jaundice, fever and biliary leak after laparoscopic cholecystectomy. In ERCP a complete transection of the common bile duct is found. After unsuccessful retrograde attempts to access the intrahepatic bile duct, EUS-RV is completed and recanalization of the extrahepatic bile duct is achieved with placement of a fully covered metallic stent. The patient's jaundice resolved and remains asymptomatic six months after discharge.

## OP61V BILATERAL BILIARY DRAINAGE FOR MALIGNANT HILAR OBSTRUCTION WITH EUS-GUIDED HEPATICOGASTROSTOMY AND HEPATICODUODENOSTOMY

**Authors** Pham KDC<sup>1</sup>, HM Engjom<sup>2</sup>

**Institute** 1 Haukeland University Hospital, Medicine, Bergen,

Norway; 2 Haukeland University Hospital, Department of Obstetrics and

Gynecology, Bergen, Norway

DOI 10.1055/s-0041-1724321

**Citation:** Pham KDC, Engjom HM. OP61V BILATERAL BILIARY DRAINAGE FOR MALIGNANT HILAR OBSTRUCTION WITH EUS-GUIDED HEPATICOGASTROSTOMY AND HEPATICODUODENOSTOMY. *Endoscopy* 2021; 53: S26.

In a 76-year-old woman with ovarian carcinoma, a large metastatic hilar lesion caused complete obstruction of the left and right intrahepatic biliary ducts. She had severe icterus and pruritus, her prior daily function was ECOG level 2. We performed EUS-guided hepaticogastrostomy to drain the left liver lobe. Attempt to bridge the right with the left hepatic ducts through the lesion failed. The right lobe was drained by EUS-guided hepaticoduodenostomy. Five months later, the cancer was stable with tamoxifen and bilirubin normal. This case demonstrates that combined hepaticogastrostomy and hepaticoduodenostomy can achieve complete biliary drainage for malignant hilar obstruction.

## OP62V DOUBLE OVER-THE-SCOPE CLIP (OTSC) CLOSURE FOLLOWING LUMEN-APPPOSING METAL STENT (LAMS) DISLODGEMENT ALLOWS SINGLE-SESSION EUS-DIRECTED TRANSGASTRIC ERCP (EDGE)

**Authors** Sanchez-Ocana R<sup>1</sup>, Fuentes Valenzuela E<sup>1</sup>, de Benito Sanz M<sup>1</sup>, Chavarria Herbozo C<sup>1</sup>, de la Serna Higuera C<sup>1</sup>, Perez-Miranda M<sup>1</sup>

**Institute** 1 Hospital Universitario Rio Hortega, Gastroenterology, Valladolid, Spain

DOI 10.1055/s-0041-1724322

**Citation:** Sanchez-Ocana R, Fuentes Valenzuela E, de Benito Sanz M et al. OP62V DOUBLE OVER-THE-SCOPE CLIP (OTSC) CLOSURE FOLLOWING LUMEN-APPPOSING METAL STENT (LAMS) DISLODGEMENT ALLOWS SINGLE-SESSION EUS-DIRECTED TRANSGASTRIC ERCP (EDGE). *Endoscopy* 2021; 53: S26.

A Roux-en-Y gastric bypass patient underwent EDGE for choledocholithiasis. A 20-mm LAMS was placed from jejunum into remnant stomach and balloon-

dilated. Following through-the-LAMS passage, duodenoscope angulation at the pylorus resulted in peritoneal dislodgment of the proximal flange. The jejunal perforation was OTSC closed. A repeat EDGE access was obtained more proximally with another gastro-gastric 20-mm LAMS. This second LAMS access was used to sequentially remove the first dislodged LAMS from the remnant stomach, OTSC close the gastric perforation, and perform through-the-LAMS ERCP with sphincterotomy and bile-duct clearance, uneventfully. Angulation determines dislodgment during EDGE. OTSC closure permits single-session EDGE despite dislodgment.

Thursday, 25 March 2021

17:00 – 17:45

ERCP: What to do when things go wrong

Room 6

## OP63 A RANDOMISED TRIAL OF AGGRESSIVE FLUID HYDRATION TO PREVENT POST-ERCP PANCREATITIS (FLUYT)

**Authors** Sperna Weiland CJ<sup>1,2</sup>, Smeets XJ<sup>1,2</sup>, Kievit W<sup>1</sup>, Verdonk RC<sup>3</sup>,

Poen AC<sup>4</sup>, Bhalla A<sup>5</sup>, Venneman NG<sup>6</sup>, Witteman BJ<sup>7</sup>, da Costa DW<sup>8</sup>,

van Eijck B<sup>9</sup>, Schwartz MP<sup>10</sup>, Römkens TE<sup>11</sup>, Vrolijk JM<sup>12</sup>, Hadithi M<sup>13</sup>,

Voorburg AM<sup>14</sup>, Baak LC<sup>15</sup>, Thijs WJ<sup>16</sup>, van Wanrooij RL<sup>17</sup>, Tan AC<sup>18</sup>,

Seerden TC<sup>19</sup>, Keulemans YC<sup>20</sup>, de Wijkerslooth TR<sup>21</sup>, van de Vrie W<sup>22</sup>,

van der Schaar P<sup>3</sup>, van Dijk SM<sup>23,24</sup>, Hallensleben ND<sup>25,2</sup>,

Sperna Weiland RL<sup>26</sup>, Timmerhuis HC<sup>2</sup>, Umans DS<sup>17,2</sup>, van Hooft JE<sup>17,27</sup>,

van Goor H<sup>28</sup>, van Santvoort HC<sup>29,30</sup>, Besselink MG<sup>23</sup>, Bruno MJ<sup>31</sup>,

Fockens P<sup>17</sup>, Drenth JP<sup>1</sup>, van Geenen EJ<sup>1</sup>Dutch Pancreatitis Study Group

**Institute** 1 Radboudumc, Gastroenterology and Hepatology, Nijmegen,

Netherlands; 2 St. Antonius Ziekenhuis, Research and Development,

Nieuwegein, Netherlands; 3 St. Antonius Ziekenhuis, Gastroenterology and

Hepatology, Nieuwegein, Netherlands; 4 Isala Clinics, Gastroenterology and

Hepatology, Zwolle, Netherlands; 5 Hagaziekenhuis, Gastroenterology and

Hepatology, Den Haag, Netherlands; 6 Medisch Spectrum Twente,

Gastroenterology and Hepatology, Enschede, Netherlands; 7 Gelderse Vallei

Ziekenhuis, Gastroenterology and Hepatology, Ede, Netherlands; 8 St.

Antonius Ziekenhuis, Radiology, Nieuwegein, Netherlands; 9 Spaarne Gasthuis,

Gastroenterology and Hepatology, Hoofddorp, Netherlands; 10 Meander

Medical Centre, Gastroenterology and Hepatology, Amersfoort,

Netherlands; 11 Jeroen Bosch Ziekenhuis, Gastroenterology and Hepatology,

Den Bosch, Netherlands; 12 Rijnstate Ziekenhuis, Gastroenterology and

Hepatology, Arnhem, Netherlands; 13 Maasstad Ziekenhuis, Gastroenterology

and Hepatology, Rotterdam, Netherlands; 14 Diakonessenhuis,

Gastroenterology and Hepatology, Utrecht, Netherlands; 15 OLVG,

Gastroenterology and Hepatology, Amsterdam, Netherlands; 16 Martini

Ziekenhuis, Gastroenterology and Hepatology, Groningen,

Netherlands; 17 AmsterdamUMC, Gastroenterology and Hepatology,

Amsterdam Gastroenterology Endocrinology Metabolism, Amsterdam,

Netherlands; 18 Canisius Wilhelmina Ziekenhuis, Gastroenterology and

Hepatology, Nijmegen, Netherlands; 19 Amphia Ziekenhuis, Gastroenterology

and Hepatology, Breda, Netherlands; 20 Zuyderland Ziekenhuis,

Gastroenterology and Hepatology, Heerlen, Netherlands; 21 Netherlands

Cancer Institute, Antoni van Leeuwenhoek Hospital, Gastroenterology and

Hepatology, Amsterdam, Netherlands; 22 Albert Schweitzer Ziekenhuis,

Gastroenterology and Hepatology, Dordrecht,

Netherlands; 23 AmsterdamUMC, Surgery, Amsterdam Gastroenterology

Endocrinology Metabolism, Amsterdam, Netherlands; 24 St. Antonius

ziekenhuis, Research and Development, Nieuwegein, Netherlands; 25 Erasmus

Medical Centre, Anaesthesiology, Rotterdam, Netherlands; 26 University of

Amsterdam, Amsterdam, Netherlands; 27 Leiden University Medical Centre,

Gastroenterology and Hepatology, Leiden, Netherlands; 28 Radboudumc,

Surgery, Nijmegen, Netherlands; 29 St. Antonius Ziekenhuis, Surgery,

Nieuwegein, Netherlands; 30 Utrecht University Medical Centre, Surgery,

Utrecht, Netherlands; 31 Erasmus Medical Centre, Gastroenterology and Hepatology, Rotterdam, Netherlands  
DOI 10.1055/s-0041-1724323

**Citation:** Sperna Weiland CJ, Smeets XJ, Kievit W et al. OP63 A RANDOMISED TRIAL OF AGGRESSIVE FLUID HYDRATION TO PREVENT POST-ERCP PANCREATITIS (FLUYT). *Endoscopy* 2021; 53: S26.

**Aims** Pancreatitis is the most common complication of endoscopic retrograde cholangiopancreatography (ERCP). Rectal nonsteroidal anti-inflammatory drugs (rNSAIDs) administration is considered as standard of care to reduce the risk of post-ERCP pancreatitis. It has been suggested that aggressive hydration may further reduce this risk. Guidelines already recommend aggressive hydration. However, multicentre randomised trials studying the added value of aggressive hydration in patients receiving prophylactic rNSAIDs are lacking. We, therefore, performed a trial to investigate the combination of aggressive hydration and rNSAIDs.

**Methods** In this multicentre, parallel-group open-label randomised controlled superiority trial, patients with moderate- to high-risk of post-ERCP pancreatitis were assessed for eligibility in 22 Dutch hospitals. Patients were randomly assigned (1:1) to a combination of aggressive hydration and rNSAIDs or rNSAIDs monotherapy. Aggressive hydration comprised 20mL/kg lactated Ringer's intravenously from the start of ERCP within 60 minutes, followed by 3mL/kg/h for 8 hours. The control group received normal saline with a maximum of 1.5mL/kg/h and 3L/24h. The primary endpoint was post-ERCP pancreatitis. Secondary endpoints included pancreatitis severity and ERCP- and hydration-related complications. ISRCTN registry: ISRCTN13659155.

**Results** A total of 826 patients were randomised. Patient baseline and ERCP characteristics were similar in both groups. Post-ERCP pancreatitis developed in 30 of 388 patients (8%) in the hydration group and in 39 of 425 patients (9%) in the control group (RR, 0.84; 95%CI [0.53-1.33]; P=0.53). 21 patients (5%) in the hydration group and in 32 patients (8%) in the control group (P=0.39) developed a moderate-to-severe pancreatitis. ERCP- and hydration-related complications did not differ between both groups (P=0.6 and P=1.0, respectively). There were no differences in other secondary endpoints, including serious adverse events.

**Conclusions** The combination of rNSAIDs and aggressive periprocedural hydration was not superior in reducing the incidence of post-ERCP pancreatitis, as compared to rNSAID monotherapy in patients with moderate- to high- risk of post-ERCP pancreatitis.

## OP64V ANCHORED PROXIMALLY MIGRATED PANCREATIC STENT: ENDOSCOPIC TECHNICAL TIPS FOR EXTRACTION

**Authors** Zabalza L<sup>1</sup>, Ubieta V<sup>1</sup>, Martínez de Acitores D<sup>1</sup>, Busto V<sup>1</sup>, Jusue V<sup>1</sup>, Carrascosa J<sup>1</sup>, Lopez S<sup>1</sup>, Fernandez Urien I<sup>1</sup>, Vila JJ<sup>1</sup>

**Institute** 1 Complejo Hospitalario de Navarra, Endoscopy Unit. Gastroenterology Dpt., Pamplona, Spain  
DOI 10.1055/s-0041-1724324

**Citation:** Zabalza L, Ubieta V, Martínez de Acitores D et al. OP64V ANCHORED PROXIMALLY MIGRATED PANCREATIC STENT: ENDOSCOPIC TECHNICAL TIPS FOR EXTRACTION. *Endoscopy* 2021; 53: S27.

Internal migration of pancreatic stents (IMPS) occurs in 5% of cases with successful endoscopic removal in 80%. A 31 yo male who suffered IMPS, was referred to our centre after several retrieval attempts. Pancreatography showed ductal stenosis distally to the IMPS. After dilatation of the stenosis, the IMPS was grasped using the Lasso technique, but it was fixed to the pancreatic duct for a calcification precluding removal. After several unsuccessful manoeuvres, a second stent was placed in order to break the anchoring calcification, which was confirmed in a subsequent ERCP. The Lasso technique was completed and the IMPS retrieved.

## OP65 ENDOSCOPIC RETRIEVAL OF PROXIMALLY MIGRATED PANCREATIC STENTS: EXPERIENCE IN A UNIVERSITY HOSPITAL

**Authors** Ubieta V<sup>1</sup>, Martínez de Acitores D<sup>1</sup>, Zabalza L<sup>1</sup>, Carrascosa J<sup>1</sup>, Fernandez Urien I<sup>1</sup>, Jusue V<sup>1</sup>, Estremera F<sup>1</sup>, JJ Vila<sup>1</sup>

**Institute** 1 Complejo Hospitalario de Navarra, Endoscopy Unit. Gastroenterology Dpt., Pamplona, Spain  
DOI 10.1055/s-0041-1724325

**Citation:** Ubieta V, Martínez de Acitores D, Zabalza L et al. OP65 ENDOSCOPIC RETRIEVAL OF PROXIMALLY MIGRATED PANCREATIC STENTS: EXPERIENCE IN A UNIVERSITY HOSPITAL. *Endoscopy* 2021; 53: S27.

**Aims** To assess the utility of ERCP to remove proximally migrated pancreatic stents (PMPS).

**Methods** A retrospective analysis of a prospectively filled database from 2009 to 2019 including all the ERCP procedures performed in our hospital was made. Patients who underwent an ERCP for PMPS removal were identified. Analysed variables: demographic data, initial pancreatic pathology, PMPS types, reasons for stent migration, time from migration to retrieval, location of the migrated stent, techniques of stent removal and adverse effects. The characteristics of patients and stents, and outcomes are described.

**Results** We identified 12 patients who underwent ERCP for PMPS removal. Mean age: 50,58±11,48 years (range: 28-72 years), 5 women and 5 with chronic pancreatitis. Seven patients were from our hospital, 5 referred from external hospitals. Reasons of stent migration: excessive insertion (3 patients), stent fracture (2), reversed insertion (1) and no determined (6). The mean time from migration to endoscopic removal was 39,33±84,06 weeks (range: 0-275 weeks). Size of stents: 5Fr (5), 7Fr (5) y 4Fr (2) and most frequent length was 5cm (6). Most frequent localizations of PMPS were: pancreatic head (6), body (4) and neck (2). In 4 patients stent had been placed with prophylactic intention after a biliary ERCP. We achieved technical success in all patients. Most stents were removed using the Lasso technique (7), followed by Fogarty balloon (3) and Dormia basket (2). Retrieval was associated to pancreatic sphincterotomy (1 patient), sphincteroplasty (4) and transmural access guided by endoscopic ultrasound (1). Three patients developed mild pancreatitis after retrieval, without any other adverse effect.

**Conclusions** In our experience, endoscopic treatment is effective for PMPS removal with low morbidity and mostly using the Lasso technique.

## OP66V DUODENAL PERFORATION DUE TO PROPHYLACTIC PANCREATIC STENT

**Authors** Loras C<sup>1,2</sup>, Andújar X<sup>1,2</sup>

**Institute** 1 Hospital Universitari Mútua de Terrassa, Gastroenterology, Terrassa, Spain; 2 Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Madrid, Spain  
DOI 10.1055/s-0041-1724326

**Citation:** Loras C, Andújar X. OP66V DUODENAL PERFORATION DUE TO PROPHYLACTIC PANCREATIC STENT. *Endoscopy* 2021; 53: S27.

An ERCP was performed in 85 years old woman due to choledocholithiasis. Precut pancreatic sphincterotomy was performed to allow biliary cannulation. A stone was removed with Fogarty balloon and plastic stent of 5cmx 5Fr was placed to prevent acute pancreatitis.

After 2-days, the patient presented abdominal pain and inflammatory markers in blood test. A CT scan showed duodenal perforation due to pancreatic stent. An upper-endoscopy visualized the pancreatic stent coming out from papilla and nestling in contralateral duodenal wall. A hole of 5mm was exhibited after the stent was removed with foreign-body forceps. The drilling was closed with OTSC clip.



## OP67 QUALITY IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: ADVERSE EVENTS AND THEIR PREDICTIVE FACTORS

**Authors** de Sousa Damião F<sup>1</sup>, Noronha Ferreira C<sup>1</sup>, Moura M<sup>1</sup>, Freitas C<sup>1</sup>, Costa P<sup>1</sup>, Rios Crespo R<sup>1</sup>, Rita Carvalho J<sup>1</sup>, Palma R<sup>1</sup>, Marques A<sup>1</sup>, Almeida A<sup>2</sup>, Carrilho Ribeiro L<sup>1,3</sup>, Tato Marinho R<sup>1,3</sup>

**Institute** 1 Centro Hospitalar Universitário Lisboa Norte, Serviço de Gastroenterologia e Hepatologia, Lisbon, Portugal; 2 Centro Hospitalar Universitário Lisboa Norte, Serviço de Anestesiologia, Lisbon, Portugal; 3 Faculdade de Medicina da Universidade de Lisboa, Lisbon, Portugal  
DOI 10.1055/s-0041-1724327

**Citation:** de Sousa Damião F, Noronha Ferreira C, Moura M et al. OP67 QUALITY IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: ADVERSE EVENTS AND THEIR PREDICTIVE FACTORS. *Endoscopy* 2021; 53: S28.  
**Aims** To report incidence of adverse events and identify risk factors for post-ERCP pancreatitis (PEP), bleeding, cholangitis, cholecystitis and perforation.  
**Methods** ERCPs performed between October 2016 and July 2019 registered in a prospective database at a tertiary referral centre were analysed. ERCP related adverse events were assessed by analysing clinical, radiological and laboratory data until hospital discharge. From 1103 procedures initially evaluated, 57 were excluded for the following reasons: age < 18 years; incomplete procedure (gastrointestinal stenosis, food stasis, pre-procedure cardiovascular instability); post-surgery altered anatomy; refusal of informed consent. A final study population of 1046 procedures were evaluated.  
**Results** Median age was 75.7 (18 – 100) years with 546 (51.2%) male patients. Native papilla was present in 716 (68.5%) procedures. Native papilla successful cannulation rate was 91.3% (639 procedures) and overall successful papilla cannulation rate was 93.2% (975 procedures). Guidewire assisted biliary cannulation and choledocholithiasis as an indication were associated with a higher

native papilla cannulation rate ( $p=0.02$  and  $p<0.001$ ). Lower cannulation rate was associated with malignant biliary stenosis and acute gall stone pancreatitis ( $p<0.001$  and  $p=0.024$ ). The incidence of post-ERCP adverse events was: PEP in 2.7% (28 procedures), bleeding in 0.8% (8 procedures), cholangitis in 0.7% (7 procedures) and perforation in 0.5% (5 procedures). Higher risk for PEP was identified in patients with native papilla when compared with non-native papilla (pancreatitis rate of 3.6% and 0.6%, respectively,  $p=0.005$ ). In patients with native papilla,  $\geq 2$  unintentional pancreatic duct cannulations (OR 2.371, CI: 1.003–5.605 (95%),  $p=0.049$ ) was the only predictive factor associated with PEP.

**Conclusions** Choledocholithiasis is associated with a higher cannulation rate while malignant stenosis and acute gallstone pancreatitis are associated with a lower cannulation rate. Patients with native papilla have a significantly higher risk of PEP. In this group of patients, the only factor associated with PEP was two or more unintentional pancreatic duct cannulations.

Thursday, 25 March 2021

18:00 – 18:45

New perspectives in EUS pancreatic diagnosis

Room 5

## OP68 COMPARISON OF THE GENERATION OF PANCREATIC CANCER PATIENT-DERIVED ORGANOID BY ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATIONS AND FINE NEEDLE BIOPSIES

**Authors** Wiessner JR<sup>1</sup>, Orben F<sup>1</sup>, Schäfer A<sup>1</sup>, Fricke L<sup>1</sup>, Herner A<sup>1</sup>, Mayr U<sup>1</sup>, Phillip V<sup>1</sup>, Treiber M<sup>1</sup>, von Figura G<sup>1</sup>, Abdelhafez M<sup>1</sup>, RM Schmid<sup>1</sup>, Schneider G<sup>1</sup>, Reichert M<sup>1</sup>, Schlag C<sup>1</sup>

**Institute** 1 Klinikum rechts der Isar, Technische Universität München, Klinik und Poliklinik für Innere Medizin II, München, Germany  
DOI 10.1055/s-0041-1724328

**Citation:** Wiessner JR, Orben F, Schäfer A et al. OP68 COMPARISON OF THE GENERATION OF PANCREATIC CANCER PATIENT-DERIVED ORGANOID BY ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATIONS AND FINE NEEDLE BIOPSIES. *Endoscopy* 2021; 53: S28.

**Aims** The prognosis for pancreatic cancer remains poor. Molecular diagnostics and customized therapies are becoming increasingly important in clinical routine. Patient-derived, predictive model systems such as organoids of endoscopic ultrasound (EUS)-guided punctures have the potential to substantially increase the depth of information from biopsy material by functional and molecular characterization of pancreatic cancer-patient derived organoids (PDOs). Improving the take rate of these organoids is a key step to bring this technology into routine clinical diagnostics.

To compare the extent to which the use of fine needle aspiration needles (FNA, 22G) or fine needle biopsy needles (FNB, 22G) influences the generation of pancreatic cancer patient-derived organoids to establish endoscopic standards of organoid technology.

**Methods** EUS-guided punctures by EUS-FNA and –FNB of pancreatic masses, highly suspicious for adenocarcinoma (detected by CT and/or MRI) were prospectively evaluated. Each patient received EUS-FNA and –FNB in a randomized order without the need to exchange the needle shaft (only the inner needle type (FNA/-B) was exchanged) between the passes. Per needle at least one passage for histology and one passage for PDOs were performed.

**Results** 50 patients were enrolled in the study. Histology revealed malignancy in 42 of 50 cases (84%). In total 17 PDOs were generated. Of these 9 were established by FNB, 2 by FNA and 6 by both, FNA and FNB. In PDO cases histology revealed malignancy in 13 of 17 cases (76%).

**Conclusions** EUS-FNB was superior to EUS-FNA in terms of successful generation of PDOs. Thus EUS-FNB might become the endoscopic standard to gain tissue for the evolving technology of organoids.

► **Tab. 1** Logistic Regression–Predictive factors for post-ERCP pancreatitis in patients with native papilla

	OR (%)	95% CI (%)	p value
<b>Time until biliary cannulation</b> ▪ > 10 minutes	1.395	0.551 – 3.528	0.482
<b>Number of times pancreatic duct was unintentionally cannulated</b> ▪ $\geq 2$	2.371	1.003 – 5.605	<b>0.049</b>
<b>Unintentionally injection of contrast in the pancreatic duct</b>	2.5	0.91 – 6.868	0.076
<b>Difficult biliary cannulation group</b> (Defined according to ESGE guidelines as: >5 contacts with the papilla or >5 minutes of cannulation attempts or >1 unintended pancreatic duct cannulation/opacification)	2.188	0.908 – 5.273	0.081

## OP69 THE INTER- AND INTRA- OBSERVER AGREEMENT IN CONFOCAL ENDOMICROSCOPY GUIDED DIAGNOSIS OF PANCREATIC CYSTS AND EVALUATION OF DIAGNOSTIC ACCURACY COMPARED TO HISTOPATHOLOGY

**Authors** Machicado J<sup>1</sup>, Napoleon B<sup>2</sup>, Lennon AM<sup>3</sup>, Tan Meng Yew D<sup>4</sup>, Pereira S<sup>5</sup>, Eldika S<sup>6</sup>, Pannala R<sup>7</sup>, Girotra M<sup>8</sup>, Kongkam P<sup>9</sup>, Bertani H<sup>10</sup>, Feng Y<sup>11</sup>, Sijie H<sup>12</sup>, Zhong N<sup>13</sup>, Valantin V<sup>14</sup>, Leblanc S<sup>15</sup>, Hilton A<sup>16</sup>, Krishna S<sup>16</sup>

**Institute** 1 Mayo Clinic College of Medicine, Eau Claire, United States; 2 Ramsay Générale de Santé, Hôpital privé Jean Mermoz, Lyon, France; 3 Johns Hopkins Medical Institutions, Baltimore, United States; 4 Singapore General Hospital, Singapore, Singapore; 5 University College London, London, United Kingdom; 6 Stanford University, Palo Alto, United States; 7 Mayo Clinic Scottsdale, Scottsdale, United States; 8 University of Miami, Miami, United States; 9 Bumrungrad Hospital, Bangkok, Thailand; 10 Azienda Ospedaliero-Universitaria di Modena, Modena, Italy; 11 Peking Union Hospital, Beijing, China; 12 Huashan Hospital Fudan University, Shanghai, China; 13 Qilu Hospital Shandong University, Jinan, China; 14 Hôpital Européen Marseille, Marseille, France; 15 Cochin Hospital, Assistance Publique-Hôpitaux de Paris, Paris, France; 16 Ohio State University, Columbus, United States

**DOI** 10.1055/s-0041-1724329

**Citation:** Machicado J, Napoleon B, Lennon AM et al. OP69 THE INTER- AND INTRA- OBSERVER AGREEMENT IN CONFOCAL ENDOMICROSCOPY GUIDED DIAGNOSIS OF PANCREATIC CYSTS AND EVALUATION OF DIAGNOSTIC ACCURACY COMPARED TO HISTOPATHOLOGY. *Endoscopy* 2021; 53: S29.

**Aims** Previous studies have suggested that EUS-guided needle based confocal laser endomicroscopy (nCLE) can diagnose pancreatic cystic lesions (PCLs) with high accuracy, inter-observer agreement (IOA), and intra-observer reliability (IOR). However, prior studies were small, and didn't use histopathology as the 'reference standard'. We aimed to assess the IOA, IOR, and performance of EUS-nCLE for differentiating PCLs in a larger cohort.

**Methods** We used EUS-nCLE videos representative of the most common types of PCLs. Subjects with confirmed histopathology were recruited from three prospective studies [INDEX (single-center), CLIMB (multicenter), and CONTACT

(multicenter)] conducted in the US and France. Videos were edited to a representative clip of <1 minute. Thirteen endosonographers (Europe=4, US=4, Asia=5) blinded to the final diagnosis participated in the study. Observers reviewed the same set of nCLE videos in different sequences between two phases separated by a 2-week washout period. Observers were first queried on PCL classification (mucinous vs. non-mucinous) and specific PCL diagnosis. Fleiss's kappa (k) for IOA and Cohen's k for IOR were interpreted using Landis and Koch interpretation.

**Results** Seventy-six nCLE patient videos were assessed (IPMN=37; mucinous cystic neoplasm (MCN)=14; serous cystadenoma (SCA)=9; pseudocyst=3; cystic neuroendocrine tumors (NET) or solid pseudopapillary neoplasm (SPN)=13). IOA (k=0.82) and IOR (k=0.82) were *almost-perfect* to differentiate mucinous vs. non-mucinous PCLs. Observers differentiated mucinous vs. non-mucinous PCLs with high sensitivity (95%), specificity (94%), and accuracy (95%).

For the diagnosis of individual cysts, IOA was *almost-perfect* for SCA (k=0.85); *substantial* for IPMN (k=0.72), and NET/SPN (k=0.73); and *moderate* for MCN (k=0.47), and pseudocyst (k=0.57). Diagnostic accuracy was highest for SCA (98%) NET/SPN (96%), and pseudocyst (96%).

**Conclusions** There is high degree of agreement, reliability, and accuracy in nCLE-imaged guided diagnosis of most prevalent PCLs. This study provides continued evidence supporting the utilization of EUS-nCLE in the evaluation of PCLs.

## OP70 IMPACT OF MACROSCOPIC ON-SITE EVALUATION ON ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE BIOPSY OF PANCREATIC AND EXTRAPANCREATIC SOLID LESIONS

**Authors** Rizza S<sup>1</sup>, Gaia S<sup>2</sup>, Bruno M<sup>2</sup>, Maletta F<sup>3</sup>, Sacco M<sup>1</sup>, Rizzi F<sup>1</sup>, Gesualdo M<sup>1</sup>, Cravero F<sup>1</sup>, Saracco GM<sup>1</sup>, De Angelis CG<sup>4</sup>

**Institute** 1 AOU Città della Salute e della Scienza, University of Turin, Gastroenterology and Digestive Endoscopy Unit, Turin, Italy; 2 AOU Città della Salute e della Scienza, Gastroenterology and Digestive Endoscopy Unit, Turin, Italy; 3 AOU Città della Salute e della Scienza, Pathology Unit, Turin, Italy; 4 AOU Città della Salute e della Scienza, Turin, Gastroenterology and Digestive Endoscopy Unit, Turin, Italy

**DOI** 10.1055/s-0041-1724330

**Citation:** Rizza S, Gaia S, Bruno M et al. OP70 IMPACT OF MACROSCOPIC ON-SITE EVALUATION ON ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE BIOPSY OF PANCREATIC AND EXTRAPANCREATIC SOLID LESIONS. *Endoscopy* 2021; 53: S29.

**Aims** Macroscopic on-site evaluation (MOSE) looks promising for estimating the adequacy of EUS-FNB samples, in order to reduce the number of passes needed to achieve a diagnosis.

**Methods** This is a prospective and comparative study including all consecutive EUS-FNB of pancreatic and extrapancreatic solid lesions between December 2019-September 2020. Based on the technique (MOSE or conventional) we identified two consecutive groups, MOSE and Control. 22-25 G Acquire needles were used with a standard of 3 passes. MOSE samples were differentiated into 4 inspective levels (0-1-2-3), on the basis of the quality-quantity. Primary outcomes were: degree of adequacy and accuracy of the material at each single pass; concordance between macroscopic observation of the frustule and the pathologist's judgment of adequacy. Secondary outcomes included sensitivity, specificity, PPV, NPV and complication rate.

**Results** 76 patients were included for histological analysis (38 MOSE, 38 Control). Overall, diagnosis was obtained at the first pass in 63% (48/76) of the patients, at the second in 17.1% (13/76), at the third in 7.9% (3/76). No diagnostic sample was obtained in 15.8% (12/76). There was no statistically significant difference in the diagnostic adequacy of the two groups (MOSE 97.4% vs Controls 91.7%, p = 0.06) and in diagnostic accuracy (MOSE 86.8% vs Controls 81.8%, p = 0.76). Overall 97.4% (112/115) of the passes had a concordance between the MOSE judgment and anatomic-pathological adequacy. Overall,

	IOA, kappa (95% CI)	Sensitivity (95% CI)	Specificity (95% CI)	Accuracy (95% CI)
IPMN	0.72 (0.64, 0.79)	84.4 (80.9, 87.4)	87.9 (84.9, 90.5)	(83.9, 88.2)
MCN	0.47 (0.35, 0.59)	57.1 (49.9, 64.1)	90.2 (87.9, 92.1)	84.1 (81.7, 86.3)
Cystic-NET or SPN	0.73 (0.64, 0.83)	80.5 (73.9, 85.7)	98.9 (97.9, 99.4)	95.8 (94.3, 96.8)
Pseudocyst	0.57 (0.36, 0.79)	87.2 (73.3, 94.4)	96.2 (94.8, 97.3)	95.9 (94.4, 96.9)
SCA	0.85 (0.76, 0.95)	94.9 (89.3, 97.6)	98.6 (97.6, 99.2)	98.2 (97.1, 98.8)

the EUS-FNB had a sensitivity of 90.6%, specificity of 100%, VPP of 100% and NPV of 60%. Complication rate was 3.8% (2 bleeding and 1 acute edematous pancreatitis).

**Conclusions** Diagnostic yield was comparable in both techniques, but MOSE allows endoscopists to perform an inspective evaluation of the material and a limitation of the number of passes to a minimum of one or two, with a high level of confidence, reducing procedural times and risk of complications.

## OP71 DIFFERENTIATION BETWEEN PANCREATIC CYSTIC LESIONS USING IMAGE PROCESSING SOFTWARE (FIJI) BY ANALYZING ENDOSCOPIC ULTRASONOGRAPHIC (EUS) IMAGES

**Authors** Keczer B<sup>1</sup>, Miheller P<sup>1</sup>, Horváth M<sup>1</sup>, Marjai T<sup>1</sup>, Harsányi L<sup>1</sup>, Szűcs Á<sup>1</sup>, Szijártó A<sup>1</sup>, Hritz I<sup>1</sup>

**Institute** 1 Semmelweis University, 1st Department of Surgery and Interventional Gastroenterology, Budapest, Hungary  
DOI 10.1055/s-0041-1724331

**Citation:** Keczer B, Miheller P, Horváth M et al. OP71 DIFFERENTIATION BETWEEN PANCREATIC CYSTIC LESIONS USING IMAGE PROCESSING SOFTWARE (FIJI) BY ANALYZING ENDOSCOPIC ULTRASONOGRAPHIC (EUS) IMAGES. *Endoscopy* 2021; 53: S30.

**Aims** EUS is the most accurate imaging modality for evaluation of different types of pancreatic cystic lesions; however, distinguishing between malignant and benign lesions remains challenging. Our aim was to analyse EUS images of pancreatic cystic lesions using an image processing software.

**Methods** We specified echogenicity of the lesions by measuring the gray value of pixels inside the selected areas. Besides the entire lesion, its cystic and solid parts were also separately selected for assessment. Following the software analysing process images were divided into groups (serous cystic neoplasm/SCN/, non-SCN and pseudocyst) according to the cytology results of the lesions. Intraductal papillary mucinous neoplasms (IPMNs) and mucinous cystic neoplasms (MCNs) were classified as non-SCN category.

**Results** EUS images of 33 patients (21 females, 12 males; mean age of 60.9 ±10.1 and 66.3±11.6 years, respectively) were assessed. Overall 73 images were processed by the software: 36 in non-SCN, 13 in SCN and 24 in the pseudocyst group. The mean gray value of the entire lesion in non-SCN group was significantly higher than in SCN group (31.7 vs 25.5; p=0.022). The area ratio (area of cystic part/entire lesion) in non-SCN, SCN and pseudocyst group was 42%, 55% and 70%, respectively; significantly lower in non-SCN group than in SCN and pseudocyst group (p=0.0058 and p<0.0005, respectively). The lesion density (sum of the gray values/area of the lesion) was also significantly higher in non-SCN group compared to the SCN- and pseudocyst group (4802.48/mm<sup>2</sup> vs 3865.87/mm<sup>2</sup> vs 3192.27/mm<sup>2</sup>; p=0.022 and p=0.004, respectively). No correlation was found between the intracystic CEA levels and the analysed cystic gray values.

**Conclusions** The computer-aided diagnosis decision is being used increasingly due to the rapid development of the information technology. The EUS image analysis process may have a potential to be a diagnostic tool for the evaluation and differentiation of pancreatic cystic lesions.

Thursday, 25 March 2021

18:00 – 18:45

Barrett's and beyond

Room 6

## OP73 ENDOSCOPIC EXPERT REVISION OF PREVIOUS HISTOLOGICAL CONFIRMED FLAT LOW-GRADE DYSPLASIA IN BARRETT'S ESOPHAGUS

**Authors** Nieuwenhuis EA<sup>1</sup>, van Munster SN<sup>1</sup>, Weusten BLAM<sup>2,3</sup>, Alvarez Herrero L<sup>3</sup>, Bogte A<sup>2</sup>, Alkhalaf A<sup>4</sup>, Schenk BE<sup>4</sup>, Schoon E<sup>5</sup>, Curvers WL<sup>5</sup>, Koch AD<sup>6</sup>, Spaander MCW<sup>6</sup>, Tang T<sup>7</sup>, Nagengast WB<sup>8</sup>,

Westerhof J<sup>8</sup>, Houben MHMG<sup>9</sup>, Bergman JJGHM<sup>1</sup>, Pouw RE<sup>1</sup> Dutch Barrett Expert Centers

**Institute** 1 Amsterdam University Medical Centers, location VUmc, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 University Medical Center Utrecht, Utrecht University, Gastroenterology and Hepatology, Utrecht, Netherlands; 3 Sint Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 4 Isala Clinics, Gastroenterology and Hepatology, Zwolle, Netherlands; 5 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 6 Erasmus MC University Medical Center Rotterdam, Gastroenterology and Hepatology, Rotterdam, Netherlands; 7 IJsselland Hospital, Gastroenterology and Hepatology, Capelle a/d IJssel, Netherlands; 8 University Medical Center Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 9 Haga Teaching Hospital, Gastroenterology and Hepatology, Den Haag, Netherlands  
DOI 10.1055/s-0041-1724332

**Citation:** Nieuwenhuis EA, van Munster SN, Weusten BLAM et al. HOP73 ENDOSCOPIC EXPERT REVISION OF PREVIOUS HISTOLOGICAL CONFIRMED FLAT LOW-GRADE DYSPLASIA IN BARRETT'S ESOPHAGUS. *Endoscopy* 2021; 53: S30.

**Aims** The strongest histologic predictor for progression to high-grade dysplasia (HGD) or esophageal adenocarcinoma (EAC) in Barrett's esophagus (BE) is expert confirmed diagnosis of low-grade dysplasia (LGD). Therefore, Dutch guidelines advise to refer patients with confirmed LGD to a Barrett's Expert Center (BEC). Aim was to assess if a community finding of confirmed LGD in BE without visible lesions (VL), is an indicator for higher grades of dysplasia.

**Methods** Endoscopic therapy for BE neoplasia in NL is centralized in 9 BECs with trained endoscopists and pathologists. Upon community hospital LGD diagnosis, a expert pathology panel reviews biopsies. If LGD is confirmed, patients are referred for imaging endoscopy, followed by target/Seattle biopsies, in a BEC <3 months. We collected data from patients with confirmed LGD in random biopsies, without VL, referred between Jan 2017-Oct 2019, since the guideline was introduced in 2017. Primary outcome was worst baseline histology in the BEC, reviewed by an expert pathologist.

### Results

222 patients with confirmed LGD without VL were referred to a BEC. Time to BEC endoscopy was 3mo (IQR 0-3). In 54/222 patients (24%;95%CI 19-31), higher grade of neoplasia was found (HGD n=30; EAC n=24). The majority of these patients (43; 80%) had a VL, 11 (20%) had HGD in random biopsies. 53/54 patients (98%) had curative endoscopic treatment, one (2%) had deep submucosal invasion and required esophagectomy. LGD was reconfirmed in 147 patients (66%; 95%CI 60-72). The majority of LGD patients received endoscopic treatment (125/147;85%) of which 119 (95%) achieved complete eradication.

**Conclusions** After expert panel LGD confirmation in BE without VL diagnosed in a community hospital, dysplasia was reproduced in >90% upon BEC

Histopathology in BEC	Total cohort (n = 222)	No visible lesion detected in BEC (n = 166)	Visible lesion detected in BEC (n = 56)
<b>NDBE, n (%); [95%CI]</b>	21 (10); [6-14]	20 (12); [8-18]	1 (2); [0-10]
<b>Second confirmation LGD, n (%); [95%CI]</b>	147 (66); [60-72]	135 (81); [75-87]	12 (21); [12-34]
<b>HGD, n (%); [95%CI]</b>	30 (13); [9-19]	11 (7); [3-12]	19 (34); [22-48]
<b>EAC, n (%); [95%CI]</b>	24 (11); [7-16]	-	24 (43); [30-58]

endoscopy. In 24% of patients, higher grades of dysplasia were found. Our results endorse the current advice to confirm LGD, and to refer patients with confirmed LGD to an expert center.

## OP74 NEOPLASTIC RECURRENCE AFTER SUCCESSFUL TREATMENT FOR EARLY BARRETT'S NEOPLASIA: DEVELOPMENT OF A PENALIZED PREDICTION MODEL

**Authors** van Munster SN<sup>1</sup>, Nieuwenhuis EA<sup>1</sup>, Weusten BLAM<sup>2,3</sup>, Alvarez Herrero L<sup>3</sup>, Bogte A<sup>2</sup>, Alkhalaf A<sup>4</sup>, Schenk BE<sup>4</sup>, Schoon E<sup>5</sup>, Curvers WL<sup>5</sup>, Koch AD<sup>6</sup>, de Jonge PJ<sup>6</sup>, Tang T<sup>7</sup>, Nagengast WB<sup>8</sup>, Westerhof J<sup>8</sup>, Houben MHMG<sup>9</sup>, Bergman JJGHM<sup>1</sup>, Pouw RE<sup>1</sup>Dutch Barrett Expert Centers

**Institute** 1 Amsterdam University Medical Centers, Location VUmc, Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 University Medical Center Utrecht, Utrecht University, Gastroenterology and Hepatology, Utrecht, Netherlands; 3 Sint Antonius Hospital, Gastroenterology and Hepatology, Nieuwegein, Netherlands; 4 Isala Clinics, Gastroenterology and Hepatology, Zwolle, Netherlands; 5 Catharina Hospital, Gastroenterology and Hepatology, Eindhoven, Netherlands; 6 Erasmus MC University Medical Center Rotterdam, Gastroenterology and Hepatology, Rotterdam, Netherlands; 7 IJsselland Hospital, Gastroenterology and Hepatology, Capelle a/d IJssel, Netherlands; 8 University Medical Center Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 9 Haga Teaching Hospital, Gastroenterology and Hepatology, Den Haag, Netherlands  
DOI 10.1055/s-0041-1724333

**Citation:** van Munster SN, Nieuwenhuis EA, Weusten BLAM et al. OP74 NEOPLASTIC RECURRENCE AFTER SUCCESSFUL TREATMENT FOR EARLY BARRETT'S NEOPLASIA: DEVELOPMENT OF A PENALIZED PREDICTION MODEL. *Endoscopy* 2021; 53: S31.

**Aims** Endoscopic resection (ER) +/- radiofrequency ablation (RFA) is the treatment of choice for Barrett's esophagus (BE) with early neoplasia. Since long-term outcomes are limited, patients still undergo regular follow-up endoscopies after successful treatment (ie, complete eradication of BE, CE-BE). We aimed to develop a prediction model for recurrence, which can be used for personalized follow-up.

**Methods** We collected data from the Dutch Barrett Expert Center Registry, a nationwide registry that captures outcomes from all BE patients that underwent endoscopic treatment for early BE-neoplasia in expert centers. Recurrence was defined as histologic finding of low-grade dysplasia (LGD), high-grade dysplasia (HGD) or esophageal adenocarcinoma (EAC) during endoscopic follow-up. We built a prognostic survival model taking account of competing risks (i.e. Fine and Gray) with LASSO penalization. We assessed: age, gender, baseline pathology, BE-length, new visible lesion(s) (VL) during ablation, poor healing, persisting esophagitis, number of ablation endoscopies, number of ER endoscopies, persisting IM in cardia.

### Results

1,154 patients were included with a mean endoscopic follow-up of 4 years ( $\pm 2$ ) per patient. Overall, 38 patients developed recurrence (0.8%/person year [95%CI 0.6-1.1]); LGD n=14 (37%); HGD n=13 (34%); EAC n=17 (45%). Following characteristics were independently associated with recurrence (strongest-weakest): new VLs during ablation, higher number of ER-endoscopies, increasing BE-length, HGD/EAC at baseline, younger age, male. The internally validated C-statistic was 0,76 [95%-CI 0,73; 0,79]. For example, a 50y male with 10cm BE with EAC and 3 ER sessions including 1 for a new VL during RFA, had a cumulative risk for recurrence of 48% during 7y. In contrast, a 70y female with 3cm BE with flat LGD, had 3% risk.

**Conclusions** We built the first prediction model for recurrence after successful treatment of early neoplastic BE in a centralized setting, with good discrimination. If external validation confirms its predictive power, this model can help clinicians and patients to manage expectations and determine a personalized follow-up strategy.

All patients (n = 1154)	No recurrence (n = 1116)	Recurrence (n = 38)	Univariable analysis - Hazard ratio [95%CI]	LASSO model - Hazard ratio
Max. BE length, cm, mean $\pm$ SD	5 $\pm$ 3	7 $\pm$ 3	1,18 [1,12;1,2-6]	1,16
Baseline HGD/EAC, n (%)	814 (73)	34 (90)	2,52 [0,89;7,0-9]	1,41
Number of ER endoscopies, median (IQR)	1 (0-1)	1 (0-1)	1,63 [1,17;2,2-6]	1,18
New visible lesion(s) during ablation phase, n (%)	62 (6)	9 (24)	4,34 [2,05;9,3-1]	2,85

## OP75 POOR HEALING AND POOR SQUAMOUS REGENERATION AFTER RADIOFREQUENCY ABLATION THERAPY FOR EARLY BARRETT'S NEOPLASIA: INCIDENCE, RISK FACTORS AND OUTCOMES

**Authors** van Munster SN<sup>1,2</sup>, Frederiks CN<sup>1,3</sup>, Alvarez Herrero L<sup>1</sup>, Bogte A<sup>3</sup>, Alkhalaf A<sup>4</sup>, Schenk BE<sup>4</sup>, Schoon E<sup>5</sup>, Curvers W<sup>5</sup>, Koch AD<sup>6</sup>, van de Ven SEM<sup>6</sup>, de Jonge PJF<sup>6</sup>, Tang T<sup>7</sup>, Nagengast WB<sup>8</sup>, Peters FTM<sup>8</sup>, Westerhof J<sup>8</sup>, Houben MHMG<sup>9</sup>, Bergman JJ<sup>2</sup>, Pouw RE<sup>2</sup>, Weusten BLAM<sup>1,3</sup>

**Institute** 1 St. Antonius Hospital, Gastroenterology & Hepatology, Nieuwegein, Netherlands; 2 Amsterdam University Medical Centers, Gastroenterology & Hepatology, Amsterdam, Netherlands; 3 University Medical Center Utrecht, Gastroenterology & Hepatology, Utrecht, Netherlands; 4 Isala Hospital, Gastroenterology & Hepatology, Zwolle, Netherlands; 5 Catharina Hospital Eindhoven, Gastroenterology & Hepatology, Eindhoven, Netherlands; 6 Erasmus Medical Center, Gastroenterology & Hepatology, Rotterdam, Netherlands; 7 IJsselland Hospital, Gastroenterology & Hepatology, Capelle a/d IJssel, Netherlands; 8 University Medical Center Groningen, Gastroenterology & Hepatology, Groningen, Netherlands; 9 Haga Hospital, Gastroenterology & Hepatology, Den Haag, Netherlands  
DOI 10.1055/s-0041-1724334

**Citation:** van Munster SN, Frederiks CN, Alvarez Herrero L et al. OP75 POOR HEALING AND POOR SQUAMOUS REGENERATION AFTER RADIOFREQUENCY ABLATION THERAPY FOR EARLY BARRETT'S NEOPLASIA: INCIDENCE, RISK FACTORS AND OUTCOMES. *Endoscopy* 2021; 53: S31.

**Aims** Although endoscopic eradication therapy (EET) with radiofrequency ablation (RFA) is effective in most Barrett's Esophagus (BE) patients, some might experience delayed healing with visible ulcerations ("poor healing"; PH) and/or regeneration with BE mucosa ("poor squamous regeneration"; PSR). We aimed to evaluate incidence, risk factors, and outcomes of PH/PSR patients.

**Methods** We included all patients with  $\geq 1$  RFA from a nationwide Dutch registry consisting of all patients who underwent EET for early BE neoplasia. Treatments were performed according to a joint treatment and follow-up protocol. PH was defined as visible ulcerations  $\geq 3$  months post-RFA, PSR as  $< 50\%$  regression after complete healing, and treatment success as complete eradication of BE (CE-BE).



**Results** 1,386 patients (median BE C2M5) underwent EET for LGD (27%), HGD (30%), or early cancer (43%). PH occurred in 10% (134/1,386) and additional time +/- acid suppression resulted in complete healing in all patients. Upon complete healing, normal squamous regeneration was seen in 50% (67/134), 97% of which (65/67) achieved CE-BE. PSR occurred in 5% (74/1,386), preceded by PH in 92% (67/74). 64% (47/74) of PSR patients failed CE-BE, of which 30% (14/47) had persisting neoplasia. PSR patients had a higher risk for progression to advanced cancer that exceeded boundaries for endoscopic treatment as compared to patients without PSR (15% vs. <1% resp.,  $P < 0.01$ ). Risk factors for PSR: <50% squamous regeneration after baseline endoscopic resection (OR 13.1 [95% CI 6.8-25.9]), reflux esophagitis (OR 7.1 [2.9-16.6]), longer BE (OR 1.3 [1.2-1.4]), higher BMI (OR 1.1 [1.0-1.2]).

**Conclusions** PH occurs in 10% and, if managed with additional time +/- acid suppression, 50% of patients has excellent success rates. If PSR occurs (5%), the risk for treatment failure and progression to advanced disease is significant. Therefore, upon detection of PSR, continuation of ablative therapy should be balanced against alternative treatment options.

► **Table 1** Treatment characteristics

		No PH or PSR N = 1,245	PH, no PSR N = 67	PSR ± PH N = 74
<b>Treatment characteristics</b>	<b>Treatment duration, months, median (IQR)</b>	8 (4-13)	15 (10-20)*	14 (7-23)*
	<b>Circumferential RFA, n, mean (±SD)</b>	0.6 (0.6)	0.8 (0.8)	1.4 (0.7)*
	<b>Pop-up lesion, n (%)</b>	61 (5)	7 (10)	16 (22)*
<b>Treatment outcomes**</b>	<b>CE-BE, n (%)</b>	1178 (98)	65 (97)	27 (36)*
	<b>Treatment failure, n (%)</b>	29 (2)	2 (3)	47 (64)*
	<b>Progression to advanced cancer, n (%)</b>	6 (<1)	0 (0)	11 (15)*

\*Statistically different ( $p$ -value  $< 0.01$ ) from no PH/PSR group after Bonferroni correction.

\*\*Overall, in 38 patients treatment was prematurely ended due to unrelated, severe new comorbidity ( $n = 21$ ), or unrelated death ( $n = 17$ ).

## OP76 FLUORESCENCE MOLECULAR ENDOSCOPY (FME) USING BEVACIZUMAB-800CW TO EVALUATE RESPONSE TO NEOADJUVANT CHEMORADIOTHERAPY IN ESOPHAGEAL CANCER: PRELIMINARY RESULTS

**Authors** Schmidt I<sup>1</sup>, Zhao X<sup>1</sup>, Kats-Ugurlu G<sup>2</sup>, van der Waaij A.M<sup>1</sup>, Gabriels RY<sup>1</sup>, van der Laan JJ<sup>1</sup>, Dijkstra FA<sup>3</sup>, Haveman JW<sup>3</sup>, van Etten B<sup>3</sup>, Robinson DJ<sup>4</sup>, Nagengast WB<sup>1</sup>

**Institute 1** University Medical Center Groningen, Department of Gastroenterology and Hepatology, Groningen, Netherlands; **2** University Medical Center Groningen, Department of Pathology and Medical Biology, Groningen, Netherlands; **3** University Medical Center Groningen, Department of Surgery, Groningen, Netherlands; **4** Center for Optical Diagnostics and Therapy, Erasmus Medical Center, Department of Otorhinolaryngology & Head and Neck Surgery, Rotterdam, Netherlands

DOI 10.1055/s-0041-1724335

**Citation:** Schmidt I, Zhao X, Kats-Ugurlu G et al. OP76 FLUORESCENCE MOLECULAR ENDOSCOPY (FME) USING BEVACIZUMAB-800CW TO EVALUATE RESPONSE TO NEOADJUVANT CHEMORADIOTHERAPY IN ESOPHAGEAL CANCER: PRELIMINARY RESULTS. *Endoscopy* 2021; 53: S32.

**Aims** Currently, patients diagnosed with locally advanced esophageal adenocarcinoma receive neoadjuvant chemoradiotherapy (nCRT) followed by esophagectomy independent of the patients' response to nCRT. Roughly 16-43% of esophageal cancer patients will achieve a pathological complete response (pCR) after nCRT1. Current imaging devices cannot adequately distinguish pCR from pathological partial response (pPR) before esophagectomy2. There is a need for a reliable pre-operative method which can precisely distinguish pCR from pPR and prevent (possibly) unnecessary surgery.

**Methods** This study aims to determine the safety and feasibility of fluorescence molecular endoscopy (FME) using bevacizumab-800CW for identification of pCR after nCRT in patients with esophageal adenocarcinoma. Patients were intravenously injected with either 4.5, 10 or 25 mg bevacizumab-800CW 3 days prior to the endoscopy. FME was performed to monitor the effect of the nCRT and biopsies were taken from normal and (residual) tumor area. Multi-diameter single fiber spectroscopy/single fiber fluorescence (MDSFR/SFF) spectroscopy was used to quantify the intrinsic fluorescence intensity, both in-vivo and ex vivo.

**Results** In this ongoing trial, patients diagnosed with locally advanced esophageal adenocarcinoma scheduled for neoadjuvant chemoradiotherapy followed by surgery were enrolled between November 2018 and November 2020. No tracer related (serious) adverse events were observed. The preliminary results show a significant difference between normal esophageal tissue and residual area in all three dose groups based on quantitative MDSFR/SFF spectroscopy measurements. When considering the signal-to-background ratio (SBR), it shows a value of  $1.36 \pm 0.08$ ,  $1.83 \pm 0.46$  and  $1.97 \pm 0.97$  for 4.5, 10 and 25 mg respectively. This could be the results of the variation in TNM stage and Mandard score within these dose groups.

**Conclusions** Preliminary results show that Bevacizumab-800CW is safe for administration in patients with locally advanced esophageal adenocarcinoma. The current dose escalation study will be extended to find the optimal dose for treatment monitoring.

## OP77 PREVALENCE OF BARRETT'S ESOPHAGUS IN A SOUTH EUROPEAN COUNTRY: A MULTICENTRE, CROSS-SECTIONAL STUDY

**Authors** Marques de Sá I<sup>1</sup>, Leal C<sup>2</sup>, Silva J<sup>3</sup>, Falcão D<sup>3</sup>, Felix C<sup>4</sup>, Nascimento C<sup>5</sup>, Boal Carvalho P<sup>6</sup>, Vasconcelos H<sup>2</sup>, Pedroto I<sup>3</sup>, Chagas C<sup>4</sup>, Cravo M<sup>5</sup>, Cotter J<sup>6</sup>, Sharma P<sup>7,8</sup>, Dinis-Ribeiro M<sup>1,9</sup>

**Institute 1** Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal; **2** Centro Hospitalar de Leiria, Gastroenterology, Leiria, Portugal; **3** Centro Hospitalar do Porto, Gastroenterology, Porto, Portugal; **4** Centro Hospitalar Lisboa Ocidental, Gastroenterology, Lisboa, Portugal; **5** Hospital Beatriz Ângelo, Gastroenterology, Lisboa, Portugal; **6** Hospital da Senhora da Oliveira, Gastroenterology, Guimarães, Portugal; **7** University of Kansas School of Medicine Center, Kansas City, United States; **8** Veterans Affairs Medical Center, Gastroenterology, Kansas city, United States; **9** Faculty of Medicine, University of Porto, CINTESIS/ Department of Biostatistics and Medical Informatics, Porto, Portugal

DOI 10.1055/s-0041-1724336

**Citation:** Marques de Sá I, Leal C, Silva J et al. OP77 PREVALENCE OF BARRETT'S

ESOPHAGUS IN A SOUTH EUROPEAN COUNTRY: A MULTICENTRE, CROSS-SECTIONAL STUDY. *Endoscopy* 2021; 53: S32.

**Aims** The identification of Barrett's esophagus (BE) with detection and treatment of dysplasia is essential to prevent adenocarcinoma. Therefore, the determination of BE prevalence is important to define screening and subsequent surveillance strategies. However, precise estimates on BE prevalence from several European countries are lacking. We aimed to determine BE prevalence in Portugal.

**Methods** We conducted a cross-sectional, multicentre study from November 2019 to February 2020. BE was defined as columnar extent in the distal esophagus  $\geq 1$  cm with intestinal metaplasia on biopsies. The quality of endoscopy was evaluated according to published guidelines and blinded to centre and endoscopist.

**Results** 1550 individuals, 51% male and mean age of 62 (+/-15) years undergoing upper endoscopy were included in the study. The overall prevalence of BE was 1.29% (95%CI=0.73-1.85); significantly higher in men [2.05% (1.06-3.04) vs women 0.53% (0.01-1.04)]. Of the 20 BE patients, 8 were newly diagnosed and 12 were under surveillance. The median extent was C3 (min0; max16) M4.5 (min2; max16). One patient each had EAC (0.06%) and HGD (0.06%). There was no difference in BE prevalence between different regions, endoscopic centres, use of sedation or level of experience of endoscopists. Considering all endoscopy reports, 93% used standardized terminology, 23% accurate photodocumentation and 69% photodocumented the esophagogastric junction (EGJ). In addition, 80% used Prague classification, 55% Seattle protocol, 60% distance to the squamocolumnar junction, 75% to the EGJ and 40% to the hiatal pinch. When considering only reports with EGJ photodocumentation or Prague classification, the prevalence was 1.78% (CI<sub>95%</sub>:0.91;2.64) or 1.03% (CI<sub>95%</sub>:0.53;1.53), respectively.

**Conclusions** In a cross-sectional, multicentre study, we report for the first time BE prevalence in Portugal and report a low overall prevalence of 1.3% in an unselected population undergoing endoscopy. Future studies need to determine progression rates and how to improve quality metrics for upper endoscopy.

**Aims** Mismatch repair (MMR) testing is recommended in the Netherlands for all patients under 70 years of age with newly diagnosed colorectal cancer (CRC) in order to identify Lynch syndrome. T1 CRC can be removed by local excision or oncological surgical resection. We evaluated the frequency of MMR testing in pT1 lesions within the Dutch CRC screening cohort.

**Methods** pT1 CRC diagnosed within the Dutch population-based screening program from 2016-2018 were identified through the Dutch pathology registry (PALGA). Pathology reports were evaluated, including registration of MMR testing (by immunohistochemistry and/or microsatellite instability PCR). Frequency of MMR testing was compared between pT1 tumors that were treated by local (endoscopic or transanal) excision and oncological surgical resections.

**Results** A total of 3.692 pT1 CRCs were diagnosed (median age 63 years, 61.4% males). MMR testing was performed in 83% and uptake increased over time (71% in 2016 to 92% in 2018,  $p < 0.01$ ). MMR testing was significantly more often performed in younger patients and in academic hospitals (Table 1). When pT1 CRC was treated by oncological surgical resection, MMR testing was performed in 89% of  $n=1.132$  cases and was known prior to oncological resection in 51% of the cases. MMR testing occurred significantly less often in case of local excision (80% of  $n=2.560$ ) compared to oncological surgical resection ( $p < 0.01$ ).

**Conclusions** MMR testing was performed in 83% of pT1 CRCs and uptake increased over time. To further increase MMR testing levels and adherence to guidelines, we suggest performing MMR testing on the first available endoscopic sample (either biopsy or local excision specimen) in order to increase uptake of testing.

Friday, 26 March 2021 09:00 – 09:45  
Endoscopic therapy for early (pT1) colorectal cancer Room 5

## OP78 ADHERENCE TO MISMATCH REPAIR TESTING GUIDELINES IN PT1 COLORECTAL CARCINOMAS DIAGNOSED BEFORE THE AGE OF 70 YEARS

**Authors** Ykema B<sup>1</sup>, Nagtegaal I<sup>2</sup>, Kuhlmann K<sup>3</sup>, van Berkel A<sup>4</sup>, van Leerdam M<sup>1,5</sup>, Dutch T<sup>1</sup>CRC Working Group

**Institute** 1 Netherlands Cancer Institute, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Radboud University Medical Center, Department of Pathology, Nijmegen, Netherlands; 3 Netherlands Cancer Institute, Department of Surgery, Amsterdam, Netherlands; 4 Noordwest Ziekenhuiscgroep, Department of Gastroenterology and Hepatology, Alkmaar, Netherlands; 5 Leiden University Medical Center, Department of Gastroenterology and Hepatology, Leiden, Netherlands

**DOI** 10.1055/s-0041-1724337

**Citation** Ykema B, Nagtegaal I, Kuhlmann K et al. OP78 ADHERENCE TO MISMATCH REPAIR TESTING GUIDELINES IN PT1 COLORECTAL CARCINOMAS DIAGNOSED BEFORE THE AGE OF 70 YEARS. *Endoscopy* 2021; 53: S33.

	MMR testing performed (n = 3.095)	MMR testing not performed (n = 642)	p-value
<b>Gender</b>			
Male	1855 (60.8%)	411 (64.0%)	0.12
Female	1195 (39.2%)	231 (36.0%)	
<b>Age at diagnosis</b>			
≤ 60 years	982 (87.5%)	140 (12.5%)	<0.01
>61 years	2.068 (80.5%)	502 (19.5%)	
<b>Hospital</b>			
Academic	633 (90.2%)	69 (9.8%)	<0.01
Non-academic	2417 (80.8%)	573 (19.2%)	

## OP79 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION FOR T1 COLORECTAL CARCINOMAS

**Authors** Corre F<sup>1</sup>, Barret M<sup>1</sup>, Lepilliez V<sup>2</sup>, Ratone JP<sup>3</sup>, Albouys J<sup>4</sup>, Rahmi G<sup>5</sup>, Karsenti D<sup>6</sup>, Canard JM<sup>7</sup>, Chabrun E<sup>8</sup>, Camus M<sup>9</sup>, Wallenhorst T<sup>10</sup>, François M<sup>11</sup>, Gérard R<sup>12</sup>, Terris B<sup>1</sup>, Rouquette A<sup>1</sup>, Coriat R<sup>1</sup>, Jacques J<sup>4</sup>, Chaussade S<sup>1</sup>

**Institute** 1 Cochin University Hospital, Gastroenterology, Paris, France; 2 Jean Mermoz Hospital, Gastroenterology, Lyon, France; 3 Paoli-Calmettes Institute, Gastroenterology, Marseille, France; 4 Limoges University Hospital, Gastroenterology, Limoges, France; 5 Georges Pompidou European Hospital, Gastroenterology, Paris, France; 6 Bercy Clinic, Gastroenterology, Paris, France; 7 Trocadéro Clinic, Gastroenterology, Paris, France; 8 Angers University Hospital, Gastroenterology, Angers, France; 9 Saint-Antoine University Hospital, Gastroenterology, Paris, France; 10 Rennes University Hospital, Rennes, France; 11 Nancy University Hospital, Gastroenterology, Nancy, France; 12 Lille University Hospital, Gastroenterology, Lille, France  
DOI 10.1055/s-0041-1724338

**Citation:** Corre F, Barret M, Lepilliez V et al. OP79 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION FOR T1 COLORECTAL CARCINOMAS. *Endoscopy* 2021; 53: S34.

**Aims** The progress made over the past ten years in therapeutic endoscopy allows treating superficial colorectal cancers with low morbidity and no mortality. According to ESGE guidelines, additional surgery is required for high-risk tumors, i.e. with at least one of the four following histological risk factors: deep submucosal infiltration (> 1000µm), poorly differentiated tumor, lympho-vascular invasion or high-grade tumor budding. We aimed to confirm the validity of these parameters in a Western population.

**Methods** We conducted a retrospective multicenter study in twelve French expert centers between March 2012 and July 2019, and included all patients with an endoscopic mucosal resection or an endoscopic submucosal dissection for a T1 colorectal cancer.

**Results** 271 patients were included. The median follow-up was 28.9 [18.4-42.2] months. 11 (4.1%) patients had lymph node or metastatic recurrence and 8 (3.0%) died. Among the 88 low-risk tumors, there was 1 lymph node recurrence and 2 non-cancer-related deaths. Among the 183 high-risk tumors, 3/68 (4.4%) relapsed in the group of non-operated patients and 7/115 (6.1%) in the group of operated patients ( $p=0.63$ ); 5/68 (7.4%) died in the group of non-operated patients, among which 1/68 (1.5%) cancer-related death, and 1/115 (0.9%) died of a cancer-related death in the group of operated patients ( $p=0.71$ ). Recurrence-free survival curves comparison between low-risk and high-risk tumors showed a non-significant tendency ( $p=0.13$ ) to relapse more for high-risk tumors. Among these high-risk tumors, recurrence-free survival curves comparison between patients who had endoscopic resection alone and those who had endoscopic resection followed by additional surgery showed no difference ( $p=0.69$ ).

**Conclusions** This multicenter study of patients with endoscopically resected T1 colorectal cancers confirms the excellent oncological prognosis with this treatment modality, particularly for low-risk tumors. Complementary surgery did not provide any benefit in terms of recurrence-free survival in patients with high-risk tumors.

## OP80 DEEP SUBMUCOSAL INVASION AS INDEPENDENT RISK FACTOR FOR LYMPH NODE METASTASIS IN T1 COLORECTAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Zwager LW<sup>1</sup>, Bastiaansen BAJ<sup>1</sup>, Mostafavi N<sup>2</sup>, Hompes R<sup>3</sup>, Barresi V<sup>4</sup>, Ichimasa K<sup>5</sup>, Kawachi H<sup>6</sup>, Machado I<sup>7</sup>, Masaki T<sup>8</sup>, Sheng W<sup>9</sup>, Tanaka S<sup>10</sup>, Togashi K<sup>11</sup>, Fockens P<sup>1</sup>, Moons LMG<sup>12</sup>, Dekker E<sup>1</sup>

**Institute** 1 Amsterdam University Medical Center, Location Academic Medical Center, Amsterdam Cancer Center, University of Amsterdam, Department of

Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Amsterdam University Medical Center, Location Academic Medical Center, University of Amsterdam, Biostatistical Unit, Amsterdam, Netherlands; 3 Amsterdam University Medical Center, Location Academic Medical Center, Amsterdam Cancer Center, University of Amsterdam, Department of Surgery, Amsterdam, Netherlands; 4 University of Verona, Department of Diagnostics and Public Health, Verona, Italy; 5 Digestive Disease Center, Showa University Northern Yokohama Hospital, Tsuzuki, Yokohama, Japan; 6 Cancer Institute Hospital, Japanese Foundation for Cancer Research, Department of Pathology, Tokyo, Japan; 7 Instituto Valenciano de Oncología, Pathology Department, Valencia, Spain; 8 Kyorin University, Department of Surgery, Shinkawa, Mitaka City, Tokyo, Japan; 9 Fudan University Shanghai Cancer Center, Department of Pathology, Shanghai, China; 10 Hiroshima University Hospital, Department of Endoscopy, Hiroshima, Japan; 11 Aizu Medical Center Fukushima Medical University, Department of Coloproctology, Aizuwakamatsu, Fukushima, Japan; 12 Utrecht University Medical Center, Department of Gastroenterology and Hepatology, Utrecht, Netherlands

DOI 10.1055/s-0041-1724339

**Citation** Zwager LW, Bastiaansen BAJ, Mostafavi N et al. OP80 DEEP SUBMUCOSAL INVASION AS INDEPENDENT RISK FACTOR FOR LYMPH NODE METASTASIS IN T1 COLORECTAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S34.

**Aims** Accurate risk estimation for lymph node metastasis (LNM) in T1 colorectal cancer (CRC) is critical to optimize further treatment. Multiple studies suggest that deep submucosal invasion (DSI) is not a strong predictor for LNM. Therefore, we conducted a systematic review and meta-analysis to determine whether DSI is an independent risk factor for LNM in T1 CRC.

**Methods** A systematic search was performed from inception to January 2021. To establish the risk of DSI for LNM in univariate analysis, all suitable studies were included in meta-analysis. To determine whether DSI ( $\geq 1000\mu\text{m}$  or sm2-3) was an independent risk factor in relation to risk factors as poor differentiation (PD), lymphovascular invasion (LVI) and/or high-grade tumor budding (TB), studies were eligible if 1) DSI was described as only present high-risk factor or 2) the above-mentioned risk factors were simultaneously included in multivariate analysis. Odds ratios (OR) and 95% confidence intervals (CI) were calculated through meta-analysis.

**Results** 65 studies (21,076 patients) were included with overall LNM rate of 11.2%. All studies analyzed the relationship between DSI and LNM in univariate analysis with a significantly higher LNM rate in the group with DSI (OR 2.59; 95%CI 2.10-3.19). Seven studies (1080 patients) described DSI in absence of all other high-risk factors. The LNM-positivity rate was 2.6% ( $n=28/1080$ ) with an incidence rate of 2.71 (95%CI 1.47 – 4.95). Eight studies (3612 patients) included DSI in multivariate analysis. DSI was not a significant predictor for LNM (OR 1.73; 95%CI 0.96 – 3.12), compared to PD (OR 2.14; 95%CI 1.39 – 3.28), TB (OR 2.83; 95%CI 2.06 – 3.88) and LVI (OR 3.16; 95%CI 1.88 – 5.33).

**Conclusion** DSI is not an independent risk-factor for LNM. In DSI cancers, LNM-positivity rate is low (2.6%) in absence of other risk factors. With the expanding spectrum of endoscopic resection methods, DSI should be reconsidered as strong indicator for oncologic surgery.

## OP81 NON-CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR COLORECTAL CANCER: CLINICAL OUTCOMES AND PREDICTORS OF RECURRENCE

**Authors** Spadaccini M<sup>1</sup>, Bourke M<sup>2</sup>, Maselli R<sup>1</sup>, Pioche M<sup>3</sup>, Bhandari P<sup>4</sup>, Jacques J<sup>5</sup>, Haji A<sup>6</sup>, Yang D<sup>7</sup>, Albeniz E<sup>8</sup>, Kaminski M<sup>9</sup>, Messmann H<sup>10</sup>, Herreros de Tejada A<sup>11</sup>, Sferrazza S<sup>12</sup>, Pekarek B<sup>13</sup>, Rivory J<sup>3</sup>, Geyl S<sup>5</sup>, Gulati S<sup>6</sup>, Draganov P<sup>7</sup>, Shahidi N<sup>2</sup>, Ejaz H<sup>4</sup>, Fleishmann C<sup>10</sup>, Vespa E<sup>1</sup>, Iannone A<sup>14</sup>, Alkandari A<sup>15</sup>, Hassan C<sup>16</sup>, Repici A<sup>1</sup>

**Institute** 1 Humanitas Research Hospital, Rozzano, Italy; 2 Westmead Hospital, Sydney, Australia; 3 Hôpital Edouard Herriot, Lyon, France;

4 Portsmouth University, Portsmouth, United Kingdom; 5 hôpital Dupuytren, Limoges, France; 6 King's College, London, United Kingdom; 7 University of Florida, Gainesville, United States; 8 Complejo Hospitalario de Navarra, Pamplona, Spain; 9 The Maria Sklodowska-Curie Memorial Cancer Centre, Warsaw, Poland; 10 University Hospital Augsburg, Augsburg, Germany; 11 Research Institute Segovia Arana Puerta de Hierro University Hospital, Madrid, Spain; 12 Ospedale Santa Chiara, Trento, Italy; 13 Hospital of Bratislava, Bratislava, Slovakia; 14 Bari University, Bari, Italy; 15 Al Jahra Hospital, Kuwait City, Kuwait; 16 Nuovo Regina Margherita, Roma, Italy  
DOI 10.1055/s-0041-1724340

**Citation:** Spadaccini M, Bourke M, Maselli R et al. OP81 NON-CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR COLORECTAL CANCER: CLINICAL OUTCOMES AND PREDICTORS OF RECURRENCE. *Endoscopy* 2021; 53: S34.

**Aims** Endoscopic submucosal dissection (ESD) is an organ-preserving approach pursuing curative intent for the removal of superficially invasive colorectal cancers (CRCs) with negligible risk for lymph-node metastasis. Conversely, additional surgical resection is recommended in case of high risk of nodal involvement based on histo-pathological features. However, both the actual risk of a lymph-node disease and the clinical outcomes of patients who underwent non-curative ESD has never been investigated. The aim of this study is to report outcomes of these patients from a large Western cohort.

**Methods** This was a retrospective analysis of consecutive patients with CRC who underwent ESD at 13 tertiary-care centers. All lesions with histo-pathological features of high risk of nodal involvement were considered for the analysis, regardless of post-endoscopic management (Conservative vs Surgery). Primary outcomes were disease recurrence, death and disease-related death rates after non-curative ESD in the two groups. As secondary outcomes, we assessed the rate of residual disease (RD) at both the previous resection site and regional lymph-nodes among patients who underwent surgery. Endoscopic and histological variables were investigated as risk factors for RD.

**Results** From October 2012 to November 2019, 3373 patients have been treated by colorectal ESD and 207 non-curative resections were considered for the analysis. The 60.9% (n=126) of these patients were referred for surgery, and the remaining 39.1% (n=81) were followed up. In a mean time of 27.6±18.6 months, there was no difference in term of recurrence rate between the two groups (p=0.30). The Conservative group showed a higher risk of death for any causes compared to the Surgery group (HR=3.99, p=0.013). Conversely no difference was reported considering disease-specific survival rate. Among patients who underwent additional surgery, 25 patients (19.8%) had histological evidence of RD, with lymphatic-vascular invasion (HR=3.48, p=0.009) and depth of invasion >sm (HR=4.98, p=0.017) emerged as independent predictors. **Conclusions** Additional surgical resection may be not clinically relevant in all cases of non-curative ESD. Lymphatic-vascular invasion and/or the neoplastic involvement of the muscular layer should strongly suggest a surgical approach.

## OP82 DIAGNOSTIC SUBMUCOSAL DISSECTION FOR LESIONS SUSPECTED OF DEEP INVASION: EVALUATION OF THE PROFITABILITY AND RISKS OF THE FIRST 43 PROCEDURES

**Authors** Pioche M<sup>1</sup>, Patenotte A<sup>1</sup>, Rivory J<sup>1</sup>, Wallenhorst T<sup>2</sup>, Jacques J<sup>3</sup>  
**Institute** 1 Hospices Civils de Lyon, Gastro et Endoscopie Pavillon L, Lyon, France; 2 CHU Pontchaillou Rennes, Rennes, France; 3 CHU Limoges, Limoges, France  
DOI 10.1055/s-0041-1724341

**Citation:** Pioche M, Patenotte A, Rivory J et al. OP82 DIAGNOSTIC SUBMUCOSAL DISSECTION FOR LESIONS SUSPECTED OF DEEP INVASION: EVALUATION OF THE PROFITABILITY AND RISKS OF THE FIRST 43 PROCEDURES. *Endoscopy* 2021; 53: S35.

**Aims** Characterisation of colorectal neoplasia makes it possible to distinguish superficial invasive neoplasia (<1000 µm) with Kudo Vi and/or Sano 3a from

deep invasive (>1000 µm) with Kudo Vn or Sano 3b patterns. Currently, it is not possible to distinguish deep submucosal invasion lesions, potentially treatable by ESD, from T2 cancers, for which ESD is impossible. Pending more refined optical criteria, diagnostic ESD was proposed [4] to obtain an accurate assessment of the histology to guide management. We report our experience with diagnostic ESD for lesions suspected of focal deep invasion.

**Methods** This is a multi-centre retrospective study of data collected prospectively. All diagnostic ESD attempted for a lesion with focal deep invasion criteria were analyzed (endoscopic description, the size of invasive area (systematic re-evaluation on photos), the definitive histology, results).

**Results** 41 patients (67.3 years) benefited from 43 diagnostic ESDs with traction and double clip, successful in 93% of cases but interrupted for muscular invasion in 7% (7.0%). En bloc resection rate was 97.5% for the dissected cases (39/40) and R0 in 69.2% (27/39) of the cases (VMc+: 30.7%, HMc+: 2.6%). In total, 11 resections (26.2%) were strictly curative (R0, intramucosal (3) or sm < 1000 microns (8), no emboli, no significant budding) and 11 on the extended criteria (ie: sm > 1000 microns, no emboli, no significant budding (2 minimal budding)), i.e. 52.4% of the total cases included. Non curative resections were for LVI (n=2), significant budding (n=1) and LVI + budding (n=2). No perforations occurred. The extended criteria being recent, 8 patients nevertheless benefited from complementary surgery (3 non-curative, 1 minimal budding and 4 extended criteria) with only one N+ (LVI+).

**Conclusions** In conclusion, diagnostic ESD of lesions with limited pit pattern Vn focus (< 10 mm) allows curative resection in 52.4% of cases including extended curative criteria.

Friday, 26 March 2021

09:00 – 09:45

The Impact of COVID-19 on Digestive Cancer Screening and Surveillance

Room 6

## OP83 ASSESSMENT OF THE CLINICAL IMPACT OF POSTPONING ENDOSCOPIC PROCEDURES USING RISK STRATIFICATION DURING COVID-19 PANDEMIC: A PROSPECTIVE SYSTEMATIC MULTICENTRIC STUDY

**Authors** Ouazzani S<sup>1</sup>, Gkolfakis P<sup>1</sup>, Lemmers A<sup>1</sup>, Blero D<sup>1</sup>, Eisendrath P<sup>1</sup>, Devière J<sup>1</sup>

**Institut** 1 Université Libre de Bruxelles, Erasme University Hospital, Department of Gastroenterology Hepatopancreatology and Digestive Oncology, Brussels, Belgium  
DOI 10.1055/s-0041-1724342

**Citation:** Ouazzani S, Gkolfakis P, Lemmers A et al. OP83 ASSESSMENT OF THE CLINICAL IMPACT OF POSTPONING ENDOSCOPIC PROCEDURES USING RISK STRATIFICATION DURING COVID-19 PANDEMIC: A PROSPECTIVE SYSTEMATIC MULTICENTRIC STUDY. *Endoscopy* 2021; 53: S35.

**Aims** During the COVID-19 outbreak, we adopted in March 2020 our own risk stratification triage policy facing massive cancellation/postponing of all endoscopic procedures not considered urgent or immediately necessary. At the end of the first wave endoscopy activity resumed progressively. We aimed to assess the impact of procedure postponing on patient outcome.

**Methods** Six weeks after cancellation policy initiation, the endoscopic reporting system of two tertiary hospitals was modified to allow prospective completion of our electronic database. From 01/05/2020 to 30/08/2020, for each procedure, endoscopists were asked to precise whether: 1) the examination was postponed due to the COVID-19 outbreak; 2) the examination revealed a significant diagnosis (SD, e.g: neoplasia diagnosis and management, diagnosis and management of gastrointestinal bleeding lesion, stricture management, cyst and abdominal collection drainage, resection of large (pre)neoplastic lesions, gastrointestinal leak management, etc) and 3) if postponing the examination had a significant impact on patient's management.



**Results** During this period, among 5283 procedures performed, 476 (9%) had been tagged as postponed procedures (PP) [esophagogastroduodenoscopy 50.8%, colonoscopy 43.5%, ERCP 2.5%, EUS 2.7%, enteroscopy: 0.4%; median postponing delay 71 (52-91) days]. 8.1% were postponed by the patient and 91.9% by the hospital. Examinations revealed a SD in 70 cases in the PP group (14.7%) and in 672 (14%) in the non-PP group during the same period ( $p=0.72$ ). In 14 cases (2.9%) postponing the examination had a significant impact on patient management; 4 patients received a delayed diagnosis on management of cancer, 3 patients developed biliopancreatic complications and appropriate management was provided with delay in 2 and 3 patients with severe functional and inflammatory bowel diseases, respectively and 2 had severe esophagitis worsening.

**Conclusions** Based on the analysis of PP procedures, the triage policy adopted during first wave COVID outbreak appeared adequate in terms of proportion of SD and impact on patient management.

## OP84 IMPACT OF THE SARS-COV-2 PANDEMIC ON GASTROENTEROLOGY UNITS IN ITALY: A NATIONAL SURVEY

**Authors** Maida M<sup>1</sup>, Sferrazza S<sup>2</sup>, Savarino E<sup>3</sup>, Ricciardiello L<sup>4</sup>, Repici A<sup>5</sup>, Morisco F<sup>6</sup>, Furnari M<sup>7</sup>, Fuccio L<sup>4</sup>, Morreale GC<sup>1</sup>, Vitello A<sup>1</sup>, Burra P<sup>8</sup>, Marchi S<sup>9</sup>, Annibale B<sup>10</sup>, Benedetti A<sup>11</sup>, Alvaro D<sup>12</sup>, Ianiro G<sup>13</sup> On behalf of Italian Society of Gastroenterology (SIGE)

**Institute** 1 Gastroenterology and Endoscopy Unit, S. Elia-Raimondi Hospital, Caltanissetta, Italy; 2 Gastroenterology and Endoscopy Unit, Santa Chiara Hospital, Trento, Italy; 3 Oncology and Gastroenterology - DiSCOG, University of Padua, Department of Surgery, Padova, Italy; 4 S.Orsola-Malpighi Hospital, Gastroenterology Unit, Department of Medical and Surgical Sciences, Bologna, Italy; 5 Digestive Endoscopy Unit, Division of Gastroenterology, Humanitas Research Hospital, Humanitas University, Rozzano, Italy; 6 Gastroenterology Unit, University of Naples, Department of Clinical Medicine and Surgery, Napoli, Italy; 7 University of Genoa, Department of Internal Medicine, Gastroenterology Unit, Policlinico San Martino, Genova, Italy; 8 Multivisceral Transplant Unit, Gastroenterology, Department of Surgery, Oncology and Gastroenterology, Padova, Italy; 9 University of Pisa, Gastrointestinal Unit-Department of Translational Sciences and New Technologies in Medicine and Surgery, Pisa, Italy; 10 Digestive Disease Unit, Sant'Andrea University Hospital, ENETS Center of Excellence, Roma, Italy; 11 Università Politecnica delle Marche, Department of Gastroenterology and Hepatology, Ancona, Italy; 12 Department of Precision and Translational Medicine, Sapienza University of Rome, Roma, Italy; 13 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Digestive Disease Center, Roma, Italy  
DOI 10.1055/s-0041-1724343

**Citation:** Maida M, Sferrazza S, Savarino E et al. OP84 IMPACT OF THE SARS-COV-2 PANDEMIC ON GASTROENTEROLOGY UNITS IN ITALY: A NATIONAL SURVEY. *Endoscopy* 2021; 53: S36.

**Aims** This is a prospective observational web-based survey aimed to assess the impact of SARS-CoV-2 pandemic on Gastroenterology Units in Italy.

**Methods** All members of the Italian Society of Gastroenterology (SIGE) were invited to answer a 39-point multiple-choice web-based survey between March 30<sup>th</sup> and April 7<sup>th</sup> 2020.

**Results** Data of 121 hospitals from all 20 Italian regions were analyzed. Overall, 10.7% of Gastroenterology divisions have been converted to COVID Units. Outpatients consultations, endoscopic and ultrasound procedures were limited to urgencies and oncology indications in 85.1%, 96.2% and 72.2% of Units, respectively, and 46.7% of Units suspended the screening for colorectal cancer. In order to guarantee the ordinary follow-up of outpatients, 83/121 (68.6%) divisions activated a remote consultancy service (63.9% by phone, 31.3% by email, 4.8% by video).

Overall, 112/121 (92.6%) GI Units issued and followed a specific protocol for the management of patients with suspected or confirmed SARS-CoV-2 infection.

The 72.2% of the staff received proper training for the use of personal protective equipment, although 45.5% did not have sufficient devices for an adequate replacement.

With regard to PPE availability, N95/FFP2-3 masks were available in 91/121 (75.2%), surgical masks in 115/121 (95.0%), gloves in 117/121 (96.7%), disposable gown in 100/121 (82.6%), hairnet in 104/121 (85.9%), goggles in 78/121 (64.5%) and boots in 57/121 (47.1%) of divisions.

Finally, in 41/121 GI divisions (33.9%) there was at least one healthcare professional who got infected, in a total of 132 subjects, of which 121/132 from divisions not-converted to COVID Units and 75/132 from high-prevalence areas.

**Conclusions** Substantial changes of practice and reduction of procedures have been recorded in the entire country during the first wave of the pandemic. The long-term impact of such modifications is difficult to estimate but potentially very risky for many digestive diseases.

## OP85 IMPACT OF COVID-19 RELATED DISRUPTIONS TO COLORECTAL CANCER SCREENING PROGRAMS IN THREE COUNTRIES: A COMPARATIVE MODELLING STUDY

**Authors** de Jonge L<sup>1</sup>, Worthington J<sup>2,3</sup>, van Wifferen F<sup>4</sup>, Iragorri N<sup>5</sup>, Peterse EF<sup>1</sup>, Lew JB<sup>2,3</sup>, Greuter MJE<sup>4</sup>, Smith HA<sup>6</sup>, Feletto E<sup>2,3</sup>, Yong JHE<sup>5</sup>, Canfell K<sup>2,3,7</sup>, Coupé VMH<sup>4</sup>, Lansdorp-Vogelaar I<sup>1</sup>

**Institute** 1 Erasmus MC University Medical Center, Department of Public Health, Rotterdam, Netherlands; 2 Cancer Council NSW, Cancer Research Division, Woolloomooloo, Australia; 3 The University of Sydney, School of Public Health, Sydney, Australia; 4 Amsterdam University Medical Center, Decision Modelling Center, Department of Epidemiology and Data Science, Amsterdam, Netherlands; 5 Canadian Partnership against Cancer, Toronto, Canada; 6 University of Ottawa, Telfer School of Management, Ottawa, Canada; 7 University of New South Wales, Sydney, Australia

DOI 10.1055/s-0041-1724344

**Citation:** de Jonge L, Worthington J, van Wifferen F et al. OP85 IMPACT OF COVID-19 RELATED DISRUPTIONS TO COLORECTAL CANCER SCREENING PROGRAMS IN THREE COUNTRIES: A COMPARATIVE MODELLING STUDY. *Endoscopy* 2021; 53: S36.

**Aims** Colorectal cancer (CRC) screening programs worldwide have been disrupted during the COVID-19 pandemic. This study aimed to estimate the impact of hypothetical disruptions to organized FIT-based CRC screening programs on short- and long-term CRC incidence and mortality in three countries using microsimulation modelling.

**Methods** Using CRC microsimulation models for Australia (Policy1-Bowel), Canada (OncoSim) and the Netherlands (ASCCA and MISCAN-Colon) participating in the COVID-19 and Cancer Global Modelling Consortium (CCGMC), we simulated a range of scenarios to assess the potential impact of disruptions to screening on CRC incidence and mortality. Modelled scenarios varied by disruption duration (3-, 6- and 12-months), post-disruption participation reduction, and catch-up screening strategy (no catch-up, immediate and 6-month delayed catch-up).

**Results** Without catch-up screening, CRC incidence increased by 0.1-0.3%, 0.2-0.6%, and 0.4-1.2% over 2020-2050 among individuals aged 50 years and older in the three modelled countries after 3-, 6-, and 12-month disruptions, respectively, compared to undisrupted screening and CRC mortality increased by 0.2-0.5%, 0.4-1.0%, and 0.8-2.0% over 2020-2050 among individuals aged 50 years and older compared to undisrupted screening. A 6-month disruption without catch-up resulted in an estimated 3,552, 2,844 and 803-1,803 additional CRC diagnoses and 1,961, 1,319, and 678-881 additional CRC-related deaths in Australia, Canada and the Netherlands, respectively. A post-disruption reduction in participation increased CRC diagnoses by 0.2-0.9% and

CRC-related deaths by 0.5-1.6% compared to undisrupted screening. Providing catch-up screening minimized this impact to 0.0-0.2%.

**Conclusions** Although the relative impact of the modelled CRC screening disruptions due to the COVID-19 pandemic appears modest, given a high burden of CRC, there is a substantial impact on CRC diagnoses and deaths across all countries considered. It is crucial that, if disrupted, screening programs ensure participation rates return to previously observed rates and provide catch-up screening wherever possible, as the impact of any disruption could be considerably larger otherwise.

## OP86 OPTIMAL USE OF LIMITED COLONOSCOPY CAPACITY IN A FIT-BASED CRC SCREENING PROGRAM DURING COVID-19 PANDEMIC

**Authors** de Jonge L<sup>1</sup>, van de Schootbrugge-Vandermeer HJ<sup>1</sup>, Breekveldt ECH<sup>1</sup>, Spaander MCW<sup>2</sup>, van Vuuren AJ<sup>2</sup>, van Kemenade FJ<sup>3</sup>, Ramakers CRB<sup>4</sup>, Dekker E<sup>5</sup>, Nagtegaal ID<sup>6</sup>, Van Leerdam ME<sup>7</sup>, Lansdorp-Vogelaar I<sup>1</sup>

**Institute** 1 Erasmus MC University Medical Center, Department of Public Health, Rotterdam, Netherlands; 2 Erasmus MC University Medical Center, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 3 Erasmus MC University Medical Center, Department of Pathology, Rotterdam, Netherlands; 4 Erasmus MC University Medical Center, Department of Clinical Chemistry, Rotterdam, Netherlands; 5 Amsterdam University Medical Centers, location AMC, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 6 Radboud University Medical Center, Department of Pathology, Nijmegen, Netherlands; 7 Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands

**DOI** 10.1055/s-0041-1724345

**Citation:** de Jonge L, van de Schootbrugge-Vandermeer HJ, Breekveldt ECH et al. OP86 OPTIMAL USE OF LIMITED COLONOSCOPY CAPACITY IN A FIT-BASED CRC SCREENING PROGRAM DURING COVID-19 PANDEMIC. *Endoscopy* 2021; 53: S37.

**Aims** A second wave of the COVID-19 pandemic may force many health care providers to downscale their services again, including colonoscopies which may impact capacity for colorectal cancer (CRC) screening. This study aimed to determine the optimal measure to handle these temporary shortages in colonoscopy capacity in the Dutch national CRC screening program to retain as much of the preventive effect of the screening program as possible.

**Methods** We used the MISCAN-Colon model to simulate the Dutch national CRC screening program, providing biennial FIT to individuals aged 55-75, under three different scenarios to temporarily reduce required colonoscopy capacity in the second half of 2020 and 2021:

- 1) increase in FIT cut-off value
- 2) exclusion of specific age-groups, and
- 3) extension of the screening interval

For each scenario, we estimated the impact on required colonoscopy capacity in 2020-2021, long-term CRC incidence, mortality and life years (LYs) lost. Outcomes were compared to a reference scenario without colonoscopy restrictions.

**Results** In 2020 and 2021, the required colonoscopy capacity without any restrictions was 100,300 colonoscopies. Increasing the cut-off, excluding age-groups and extending the screening interval resulted in a reduction of 11,600-27,000, 10,800-17,500, and 16,100-49,500 colonoscopies, respectively (Table 1). Increasing the cut-off resulted in 400-900 excess CRC cases and 200-500 excess CRC-related deaths from 2020-2050, while excluding age-groups resulted in 200-600 excess CRC cases and 200-500 excess CRC-related deaths. Unexpectedly, extending the screening interval up to 34 months prevented 200-300 more CRC cases and 200-600 more CRC-related deaths, because screening occurred until slightly higher ages due to the initial delay. All measures resulted in LYs lost, but extending the screening interval up to 34 months had the smallest impact.

**Conclusions** A temporary extension of the screening interval to accommodate reduction in available colonoscopy capacity results in the smallest impact on the CRC incidence, mortality and LYs lost.

► **Table 1**

	Reduction in colonoscopy demand 2020-2021	Excess CRC incidence 2020-2050	Excess CRC-related deaths 2020-2050	LYs lost 2020-2050
Increasing the cut-off value: 50-70 µg/g feces	11,600 - 27,000	400 - 900	200 - 500	2,100 - 4,800
Excluding age-groups: 55-, 63-year-olds, or both 63- and 65-year-olds	7,900 - 17,500	200 - 600	200 - 500	2,800 - 5,700
Extending the screening interval: 28-36 months	16,100 - 49,500	(200)* - 400	(600)* - (200)*	900 - 5,200

Abbreviations: CRC, colorectal cancer; LYs, Life Years; µg Hb/g feces, microgram Hemoglobin per gram feces. \*Number between brackets are negative numbers.

## OP87 IMPACT OF COVID-19 OUTBREAK ON GASTRO-INTESTINAL CANCER BURDEN

**Authors** Milluzzo SM<sup>1,2</sup>, Pesatori EV<sup>1,2</sup>, Hassan C<sup>3</sup>, Olivari N<sup>1</sup>, Minelli Grazioli L<sup>1</sup>, Cesaro P<sup>1</sup>, Valerio M<sup>4</sup>, Spada C<sup>1,2</sup>

**Institute** 1 Fondazione Poliambulanza Istituto Ospedaliero, Digestive Endoscopy Unit and Gastroenterology, Brescia, Italy; 2 Fondazione Policlinico Universitario A. Gemelli IRCCS -Università Cattolica del Sacro Cuore, Department of Gastroenterology, Rome, Italy; 3 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 4 Fondazione Poliambulanza Istituto Ospedaliero, Managing Director, Brescia, Italy

**DOI** 10.1055/s-0041-1724346

**Citation:** Milluzzo SM, Pesatori EV, Hassan C et al. OP87 IMPACT OF COVID-19 OUTBREAK ON GASTRO-INTESTINAL CANCER BURDEN. *Endoscopy* 2021; 53: S37.

**Aims** Italy was the first European country to experience COVID-19 outbreak. The aim of this study was to show its impact on the activity of a tertiary care Endoscopy Unit with >18,000 procedures/year.

**Methods** This is a single-center study performed at Fondazione Poliambulanza Istituto Ospedaliero, Brescia, Italy. Our Institution was converted to COVID-19 Hospital from January to April 2020 and only emergency and oncologic procedures were maintained to preserve both patients' and operators' health. Data about outpatients visits and endoscopic examinations performed from January to April 2020 were compared to the same period of 2019.

**Results** A dramatic drop of all activities was shown. In details, overall outpatient visits decreased of -45,89% (1100 vs 2033), including -39,5% (227 vs 375) of IBD and -28,6% (30 vs 42) biliopancreatic visits. Endoscopic examinations also diminished considerably as shown in table 1. Overall, -64,6% of gastro-

intestinal cancers were detected (17 vs 48). A reduction of -77.8% and -80% were obtained in terms of advanced neoplasia (i.e. high-grade dysplasia and villous histology) and adenocarcinomas detected during colonoscopy between the two years (22 vs 100 and 6 vs 30, respectively). Such absolute reduction was not compensated by an increase of relative diagnostic yield, being 8.3% vs 7.9% (22/266 vs 100/1256; Odd Ratio [OR] 1.05) and 2.3% vs 2.4% (6/266 vs 30/1256; OR 0.94) for advanced neoplasia and colorectal cancer, respectively. Although a reduction of -35.3%, a significant improvement was showed comparing diagnostic yield of gastric adenocarcinomas, being 2.1% vs 4.6% (17/814 vs 11/241; OR 0.44), respectively.

**Conclusions** COVID-19 caused a notably decrease of all activities, including screening colonoscopy. This produced a reduction of the total amount of neoplasia detected during endoscopy compared to the same period of the pre-

► **Tab. 1** Impact of COVID-19 on endoscopic examinations

	2019 March- April	2020 March- April	2020 vs 2019 Total	2020 vs 2019 Total %
Colonoscopy (screening)	1.256 (200)	266 (29)	-990 (-171)	-78,8% (-85,5%)
EGD	814	241	-573	-70,4%
EUS	58	32	-26	-44,8%
ERCP	45	23	-22	-48,9%
<b>Total</b>	<b>2.173</b>	<b>562</b>	<b>-1.611</b>	<b>-74,1%</b>

Friday, 26 March 2021

10:00 – 10:45

Challenges in management of ampullary duodenal neoplasms

Room 5

## OP88 ENDOSCOPIC PAPILLECTOMY VS. PANCREATICODUODENECTOMY FOR AMPULLARY LESIONS: A PROPENSITY-SCORED MATCHING ANALYSIS OF THE ESAP STUDY

**Authors** Hollenbach M<sup>1</sup>, Heise C<sup>2</sup>, Abou Ali E<sup>3</sup>, Auriemma F<sup>4</sup>, Gulla A<sup>5</sup>, Regner S<sup>6</sup>, Gaujoux S<sup>7</sup> ESAP study group

**Institute 1** University of Leipzig Medical Center, Division of Gastroenterology, Medical Department II, Leipzig, Germany; **2** Martin-Luther University Halle-Wittenberg, Department of Medicine I – Gastroenterology, Pulmonology, Halle, Germany; **3** Paris Descartes University, Department of gastroenterology, digestive oncology and endoscopy, Cochin Hospital, Paris,

France; **4** Humanitas Clinical and Research Hospital, Rozzano, Digestive Endoscopy Unit, Division of Gastroenterology, Milano, Italy; **5** Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Department of abdominal surgery, Vilnius, Lithuania; **6** Lund University, Department of Clinical Sciences Malmö, Section for Surgery, Lund, Sweden; **7** Médecine Sorbonne Université, Department of Pancreatic and Endocrine Surgery, Pitié-Salpêtrière Hospital, Paris, France

DOI 10.1055/s-0041-1724347

**Citation:** Hollenbach M, Heise C, Abou Ali E et al. OP88 ENDOSCOPIC

PAPILLECTOMY VS. PANCREATICODUODENECTOMY FOR AMPULLARY LESIONS: A PROPENSITY-SCORED MATCHING ANALYSIS OF THE ESAP STUDY. *Endoscopy* 2021; 53: S38.

**Aims** Ampullary lesions (AL) are a rare condition but may be clinically significant by obstruction, jaundice, bleeding or malignant transformation. Main resection techniques comprise the endoscopic papillectomy (EP), the surgical ampullectomy (SA) and pancreaticoduodenectomy (PD). Since consistent comparative data are lacking, we performed a retrospective multicenter center study (Endoscopic-Papillectomy-versus-Surgical-Ampullectomy-versus-Pancreaticoduodenectomy (ESAP)) comparing the most frequent procedures, i.e. EP and PD.

**Methods** On 1330 EP and 1095 PD included in the database, we performed a propensity score matching (nearest-neighbor-method) with regard to age, gender, size and histology of the lesion (adenoma, T<sub>1</sub>- and T<sub>2</sub>-adenocarcinoma), ASA-score and previous treatment. Main outcomes were proportions of complete resection (R0), complications, recurrence and hospital stay. Dispersions between EP and PD group were calculated by means of chi-square-test, Students' t-test and Mann-Whitney-U-test.

**Results** Propensity-score-matching identified 270 pairs of patients. Baseline characteristics age (EP: 66.9y, PD: 70.4y, p=0.315), ASA-score (≥3 EP: 85, PD: 87, p=0.926), histology (non-neoplastic: 29 vs. 27, Adenoma 115 vs. 118, invasive Cancer 114 vs. 134, other: 22 vs. 11, p=0.114) and previous treatment (EP: 6.3%, PD: 9.3%, p=0.261) were comparable. However, we were not able to perfectly match lesion size (EP: 20.8mm, PD: 26.6 mm, p=0.009) and gender (male gender: 48.5% vs. 58.1%, p=0.025). Initial R0-rate was only 50% for EP and 99.3% for PD (p<0.001). However, in all EP-patients who underwent an EP-retreatment (30% of R1 patients), a final R0 was achieved. Complications were significantly higher in PD (≥ moderate: 18.9% vs. 58.9%, 0 vs. 9 deaths, p<0.001) and PD-group revealed a significant longer hospital stay (7.0 vs. 24.5 d, p<0.001). EP-group showed a higher rate of recurrences (29.6% vs. 11.1%, p<0.001).

**Conclusions** In this propensity-score-matched analysis of the largest AL-cohort so far, EP was associated with less complications and a lower initial R0-rate. In most cases, EA-retreatment finally resulted in complete resection.

## OP89 ENDOSCOPIC PAPILLECTOMY

**Authors** Khon E<sup>1</sup>, Nedoluzhko I<sup>1</sup>, Shishin K<sup>1</sup>, Kurushkina N<sup>1</sup>, Shumkina L<sup>1</sup>

**Institut 1** Moscow Clinical Scientific Center, Operative Endoscopy, Moscow, Russian Federation

DOI 10.1055/s-0041-1724348

**Citation:** Khon E, Nedoluzhko I, Shishin K et al. OP89 ENDOSCOPIC PAPILLECTOMY. *Endoscopy* 2021; 53: S38.

**Aims** Adenomas are the most common benign lesions of the ampulla of Vater and have the potential to undergo a malignant transformation which makes complete removal of adenoma essential. Endoscopic papillectomy is increasingly used as an alternative to surgery for benign ampullary tumors. The aim is to evaluate the effectiveness of endoscopic papillectomy.

**Methods** 59 endoscopic snare papillectomy was performed in 58 patients with ampullary tumors from 2014 until 2020. One patient underwent the operation repeatedly. There were 37 women (64%) and 21 men (36%). Inclusion criteria were: tumor diameter less than 4 cm, no evidence of malignancy and no intraductal infiltration more than 1 cm.

**Results** Papillectomy was successfully performed in all cases. En bloc resection was completed in 40 cases (68%), piecemeal in 19 (32%). A pancreatic stent was placed in 46 cases (78%). The early postoperative complication rate is 28.8%, including delayed bleeding (10 cases, 17%), perforation (4 cases, 6.8%), acute pancreatitis (3 cases, 5%). The procedure-related mortality rate is 3,3% (2 cases). Local recurrence occurred in one case (1.6%), 2 years after the endoscopic papillectomy and was removed endoscopically. Final histology showed adenoma in 42 cases (71%), hyperplastic polyp in 3 (5%), papillitis in 4 (7%), neuroendocrine tumor in 3 (5%) and adenocarcinoma in 7 cases (12%). Two patients with adenocarcinoma and one patient with neuroendocrine

tumors were referred to surgery. One patient was referred to chemotherapy due to the cancer dissemination, and two patients due to the R0 resection margins are under endoscopic surveillance and no recurrence has been found to date. The last 4 patients refused any medical treatment in our center.

**Conclusions** Endoscopic papillectomy is an effective treatment for benign ampullary tumors. Compared to surgery, endoscopic papillectomy is associated with lower morbidity and mortality and can be beneficial for certain ampullary tumors.

## OP90 CLINICAL AND ENDOSCOPIC PICTURE OF PERIAMPULLARY TUMOURS AT A TERTIARY CARE HOSPITAL

**Authors** Rithesh GR<sup>1</sup>, Vijay K<sup>1</sup>, Nandeesh H<sup>1</sup>, Deepak S<sup>1</sup>, Aradya H<sup>1</sup>  
**Institut** 1 JSS Academy of Higher Education and Research, Gastroenterology and Hepatology, Mysore, India  
**DOI** 10.1055/s-0041-1724349

**Citation:** Rithesh GR, Vijay K, Nandeesh H et al. OP90 CLINICAL AND ENDOSCOPIC PICTURE OF PERIAMPULLARY TUMOURS AT A TERTIARY CARE HOSPITAL. *Endoscopy* 2021; 53: S39.

**Aims** Periampullary tumour is a clinical condition often encountered by gastroenterologist. There is limited data regarding clinical profile and endoscopic management of patients with periampullary tumour.

**Methods** We retrospectively analyzed the ERCP (Endoscopic retrograde cholangio pancreatography) records of periampullary tumour patients who were referred to Department of Gastroenterology for ERCP over a period of three years from January 2015 to January 2018. Demographic profile, clinical findings and ERCP management were taken into consideration. Statistics used were mean and standard deviation for continuous variables, frequencies and percentages were calculated for categorical Variables were determined.

**Results** We retrospectively analyzed 86 patients who had undergone ERCP for Periampullary tumours from January 2015 to January 2018. Data interpretation revealed, that majority of the cases were between 41 to 50 years (23.6 %). There was a male preponderance (66.3 %). Maximum number of cases were of ampullary growth (46.5 %), followed by lower CBD stricture (32.6 %). The predominant presenting symptom was jaundice (77.9%), followed by abdominal pain (54.6 %). 12 patients (14%) had cholangitis at presentation. Mean bilirubin in the current study ranged from 11.76 to 23.72. CBD cannulation was achieved in 98.8% cases (Selective cannulation 65.1%, precut sphincterotomy 33.7%). Biliary drainage was done using plastic biliary stent (PC) in 84.7% and SEMS (self-expandable metallic stent) in 15.2% cases. Ampullary growth biopsy and biliary brush cytology revealed malignancy in 55% and 35.7% cases respectively. At 3 months, 4 patients with Plastic stent developed block.

**Conclusions** In our study, ampullary growth was the most common type of Periampullary tumour. Cholangitis was present in 14% cases at presentation. ERCP had good success for biliary drainage. Ampullary growth biopsy and biliary brush cytology has sensitivity rate of 50% and 35.7% respectively. Rate of Plastic stent block was low (< 5%).

► **Tab. 1** Association between profile and number of patients

Profile	No.	Percent
Ampullary Growth	40	46.5
Lower CBD Stricture	28	32.6
Ca Head of Pancreas	16	18.6
Duodenal malignancy	2	2.3

## OP91V ANCHORING TECHNIQUE TO ACCESS THE PAPILLARY AREA IN PATIENTS WITH UNREACHABLE SECOND DUODENAL PORTION

**Authors** Arrubla A<sup>1</sup>, Hervas N<sup>1</sup>, Rodriguez I<sup>1</sup>, Carrascosa J<sup>1</sup>, Jusue V<sup>1</sup>, Saldaña C<sup>1</sup>, Fernandez Urien I<sup>1</sup>, Vila JJ<sup>1</sup>  
**Institut** 1 Complejo Hospitalario de Navarra, Endoscopy Unit.  
 Gastroenterology Dpt., Pamplona, Spain  
**DOI** 10.1055/s-0041-1724350

**Citation:** Arrubla A, Hervas N, Rodriguez I et al. OP91V ANCHORING TECHNIQUE TO ACCESS THE PAPILLARY AREA IN PATIENTS WITH UNREACHABLE SECOND DUODENAL PORTION. *Endoscopy* 2021; 53: S39.

We present an access technique to the papillary area in patients with unreachable second duodenal portion (SDP) without stenosis or previous surgery. A 20 mm dilatation balloon is passed over a guidewire to the proximal jejunum and is inflated to hook on a jejunal loop. The duodenoscope is introduced while forcefully retracting the balloon catheter into the working channel. The balloon works as an anchor and allows to reach the SDP. We successfully tried this technique in five patients: 3 with large hiatal hernia, 1 with duodenal deformity for previous peptic ulcer and 1 with anatomical distortion for pancreatic cancer.

## OP92V UNDERWATER ENDOSCOPIC PAPILLECTOMY

**Autor** Rodriguez-D´Jesús A<sup>1</sup>  
**Institut** 1 Hospital Álvaro Cunqueiro, Gastroenterology Service, Vigo, Spain  
**DOI** 10.1055/s-0041-1724351

**Citation:** Rodriguez-D´Jesús A. OP92V UNDERWATER ENDOSCOPIC PAPILLECTOMY. *Endoscopy* 2021; 53: S39.

The endoscopic papillectomy is a safe and effective technique, with a cure rate of > 83%.

**Case** We present a resection variant, using intraluminal water to facilitate resection.

Endoscopic examination reveals a benign-looking lesion in the papillary region. Technique: We proceed to instill abundant intraluminal fluid. This measure facilitates the lesion protrudes into the duodenal lumen, which practically floats on the liquid intraluminal, easily fit inside the loop. The lesion is cut and extracted.

**Conclusion** Underwater resection facilitates the intraluminal exteriorization of the papillary lesion and its subsequent capture with the polypectomy loop, avoiding the need for other mucosal elevation alternatives.

Friday, 26 March 2021 10:00 – 10:45  
**Transduodenal EUS biliary approach:  
 The best way?** Room 6

## OP93 EUS-GUIDED CHOLEDOCHO-DUODENOSTOMY VERSUS ERCP WITH COVERED METALLIC STENTS IN PATIENTS WITH UNRESECTABLE MALIGNANT DISTAL BILIARY OBSTRUCTION. A MULTI-CENTERED RANDOMIZED CONTROLLED TRIAL (DRA-MBO TRIAL)

**Authors** Teoh A<sup>1</sup>, Napoleon B<sup>2</sup>, Kunda R<sup>3</sup>, Arcidiacono P<sup>4</sup>, Kongkam P<sup>5</sup>, Larghi A<sup>6</sup>, Merwe Scd<sup>7</sup>, Jacques J<sup>8</sup>, Legros R<sup>8</sup>, Thawee RE<sup>9</sup>, Kaffes A<sup>10</sup>, Aerts M<sup>11</sup>, Chan S<sup>1</sup>, Chiu P<sup>1</sup>, Fumex F<sup>2</sup>, Messaoudi N<sup>3</sup>, NG K<sup>1</sup>, NG E<sup>1</sup>, Rizzatti G<sup>6</sup>, Saxna P<sup>10</sup>, Lau J<sup>1</sup>

**Institute** 1 The Chinese University of Hong Kong, Surgery, Hong Kong, Hong Kong, SAR of China; 2 Hopital Jean Mermoz, Digestive Endoscopy, Lyon, France; 3 Universitair Ziekenhuis Brussel, Surgery, Brussels, Belgium; 4 Vita Salute San Raffaele University, Pancreato-Biliary Endoscopy and Endosonography Division, Milan, Italy; 5 Chulalongkorn UUniversity and King Chulalongkorn Memorial Hospital, Medicine, Bangkok, Thailand; 6 Fondazione Policlinico Universitario A. Gemelli IRCCS, Endoscopy Unit, Rome, Italy; 7 University Hospital Gasthuisberg, Gastroenterology and Hepatology,



Leuven, Belgium; 8 Dupuytren University Hospital, Gastroenterology, Limoges, France; 9 Rajavithi Hospital, Surgery, Bangkok, Thailand; 10 Royal Prince Alfred Hospital, Gastroenterology, Sydney, Australia; 11 Universitair Ziekenhuis Brussel, Gastroenterology-Hepatology, Brussels, Belgium

DOI 10.1055/s-0041-1724352

**Citation:** Teoh A, Napoleon B, Kunda R et al. OP93 EUS-GUIDED CHOLEDOCHO-DUODENOSTOMY VERSUS ERCP WITH COVERED METALLIC STENTS IN PATIENTS WITH UNRESECTABLE MALIGNANT DISTAL BILIARY OBSTRUCTION. A MULTI-CENTERED RANDOMIZED CONTROLLED TRIAL (DRAMBOTRIAL). *Endoscopy* 2021; 53: S39.

**Aims** EUS – guided choledocho-duodenostomy (ECDS) is an established option for bile duct drainage in unresectable malignant distal common bile duct (CBD) strictures when endoscopic retrograde cholangiopancreatography (ERCP) fails. The aim of the current study is to compare primary ECDS versus ERCP with CSEMS in unresectable malignant distal CBD strictures.

**Methods** This was an international multi-centered randomized controlled study conducted amongst 12 high-volume institutions. Consecutive patients admitted for obstructive jaundice due to unresectable primary malignant distal CBD strictures were recruited. The patients were randomized to receive either ECDS with a cautery enhanced lumen apposing stent (Hot AXIOS, Boston Scientific, Marlborough, USA) or ERCP with CSEMS (Figure 1). The primary outcome was the 1-year stent patency rate. Secondary outcomes included technical success, clinical success, adverse events, re-intervention rates and mortality.

**Results** Between January 2017 to November 2020, 158 patients were recruited in to the study (79 ECDS and 79 ERCP). There were no differences in background demographics (Table 1). The majority of patients suffered from unresectable locally advanced pancreatic adenocarcinoma. ECDS was associated with significantly higher technical success (93.7% vs 77.2%,  $P = 0.007$ ) whilst clinical success as per intention to treat were similar. The mean (S.D.) procedural time was also significantly faster in the ECDS arm [15.57 (15.91) vs 670 28.67 (18.89) minutes,  $P < 0.001$ ]. Whilst no difference in hospital stay (6 IQR (2-10) vs 4.5 (IQR 1 – 10) days,  $P = 0.272$ ), 30-day adverse events rates (19.2% vs 17.6%,  $P = 0.812$ ), 30-day mortality rates (5.1% vs 6.5%,  $P = 0.744$ ) and 1-year stent dysfunction rates (8.9% vs 8.9%,  $P = 1$ ) were observed.

**Conclusions** ECDS is associated with some advantages over ERCP in drainage of unresectable malignant distal CBD obstruction. The procedure should be considered an option as the primary drainage procedure for these patients.

## OP94 EFFICACY AND SAFETY OF EUS-GUIDED TRANSMURAL GALLBLADDER DRAINAGE IN MALIGNANT BILIARY OBSTRUCTION USING AN ELECTROCAUTERY-ENHANCED LUMEN APPOSING METAL STENT: A FRENCH MULTICENTER STUDY

**Authors** Lambin T<sup>1,2,3</sup>, Branche J<sup>1</sup>, Privat J<sup>4</sup>, Bourgaux JF<sup>5</sup>, Koch S<sup>6</sup>, Palazzo M<sup>7</sup>, Chaput U<sup>8</sup>, Ponchon T<sup>3,2</sup>, Pioche M<sup>3,9</sup>, Grandval P<sup>10</sup>, Gérard R<sup>1</sup>

**Institute** 1 Claude Huriez Hospital, University of Lille, Department of Gastroenterology, Lille, France; 2 Inserm U 1032, Labtau, Lyon, France; 3 Edouard Herriot Hospital, Gastroenterology and Endoscopy Unit, Pavillon L, Lyon, France; 4 CH Jacques Lacarin, Department of Gastroenterology, Vichy, France; 5 Hôpital Carêmeau, Department of Gastroenterology, Nîmes, France; 6 University Hospital of Besançon, Department of Gastroenterology, Besançon, France; 7 AP-HP, Hôpital Beaujon, Endoscopy Unit, Clichy, France; 8 Sorbonne University, Endoscopy Unit, AP-HP, Hôpital Saint-Antoine, Paris, France; 9 Inserm U1032, Labtau, Lyon, France; 10 AP-HM Hôpital de la Timone, Digestive Endoscopy and Gastroenterology Department, Marseille, France

DOI 10.1055/s-0041-1724353

**Citation:** Lambin T, Branche J, Privat J et al. OP94 EFFICACY AND SAFETY OF EUS-GUIDED TRANSMURAL GALLBLADDER DRAINAGE IN MALIGNANT BILIARY

OBSTRUCTION USING AN ELECTROCAUTERY-ENHANCED LUMEN APPOSING METAL STENT: A FRENCH MULTICENTER STUDY. *Endoscopy* 2021; 53: S40.

**Aims** In case of malignant obstruction of the distal biliary duct, electrocautery-enhanced lumen apposing metal stent (EC-LAMS) allows either endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) or choledochoduodenostomy (EUS-CDS) if endoscopic retrograde cholangiopancreatography (ERCP) is not feasible. EUS-CDS is associated with less adverse events than EUS-HGS but can be challenging. Thus, a simple alternative would be welcomed. We aim to assess the efficacy and safety of EUS-guided transmural gallbladder drainage using an EC-LAMS in malignant distal biliary obstruction.

**Methods** We performed a French multicentric retrospective cohort study including adult patients with jaundice due to a malignant distal biliary obstruction who failed a previous ERCP (or ERCP was not possible), and who underwent EUS-guided transmural gallbladder drainage with an EC-LAMS. The primary outcome was the clinical success of the transmural gallbladder drainage using an EC-LAMS.

**Results** From July 2016 to July 2020, twenty-eight patients were included. Mean duration of follow-up from EC-LAMS procedure until last news was 3.6 +/- 5.0 months. Mean bilirubin value at inclusion was 185.5 +/- 146.2 umol/L. Etiology of biliary obstruction was as follows: pancreatic adenocarcinoma in 19 (67.9%) patients, cholangiocarcinoma in 4 (14.2%) patients, other malignancies in five (17.9%) patients. Clinical success was obtained in 22 (78.6%) patients, and technical success was achieved in all patients. No complication occurred during the procedure. Three patients (10.7%) had an adverse event within 30 days after the procedure: one stent obstruction, one cholangitis, and one septic choc. During follow-up, 4 (14.3%) patients underwent another biliary drainage for a recurrence of biliary event after a mean time of 25.8 +/- 19.9 days.

**Conclusions** In our study, EUS-guided transmural gallbladder drainage was clinically efficient in 78.6% of the patients with malignant distal biliary obstruction with few adverse events. This technique could be considered in case of ERCP not feasible.

## OP95 IMPACT OF INTERVENTIONAL BILIARY EUS (EUS-BD) ON OUTCOMES OF BILIARY DRAINAGE IN A TERTIARY CARE SETTING

**Authors** Dhir V<sup>1</sup>, Udawat P<sup>1</sup>, Shah R<sup>1</sup>

**Institut** 1 Institute of Digestive and Liver Care, SL Raheja Hospital, Gastroenterology, Mumbai, India

DOI 10.1055/s-0041-1724354

**Citation:** Dhir V, Udawat P, Shah R. OP95 IMPACT OF INTERVENTIONAL BILIARY EUS (EUS-BD) ON OUTCOMES OF BILIARY DRAINAGE IN A TERTIARY CARE SETTING. *Endoscopy* 2021; 53: S40.

**Aims** To assess whether EUS-BD has affected the outcomes of biliary drainage in terms of success, adverse events, costs, and duration of hospitalization. The primary end point was rate of successful endoscopic drainage (ERCP+EUS-BD). The secondary endpoints were adverse events, duration of hospitalization, and procedure costs related to secondary procedures.

**Methods** EUS-BD was introduced at our centre in 2009. We analyzed obstructive jaundice patients over two six month periods, in 2008 (January 2008 to June 2008) and 2019 (June to December 2019). The indication, primary procedure, success, secondary procedure, and adverse events were noted. Additional Procedure costs of secondary procedures and duration of hospitalization were calculated.

**Results** Of 239 patients in 2008, 113 patient had benign obstruction, and 126 had malignant obstruction. Of 346 patients in 2019, 162 had benign obstruction, and 184 had malignant obstruction. In benign group there was no difference in endoscopy success rate between 2008 (113,100%) and 2019 (162,100%). In the malignant group, Endoscopic biliary drainage (ERCP+EUS-BD) was significantly more successful in 2019 (164, 98.9%) compared with 2008 (117,92.8%,  $p = 0.008$ ). For malignant obstruction in 2008, 117(92.8%) had successful ERCP whilst 9 patients (7.4%) underwent PTBD. In 2019, 164

(90.1%) had successful ERCP, 18(9.7%) patients had EUS-BD, 2 patients (1%) had PTBD. In 2019 significantly less adverse events were noted 6.5% (pancreatitis-4, cholangitis-5, bleeding-3) versus 13.5% (pancreatitis-6, cholangitis-8, bleeding-3) in 2008 (P=0.047). The duration of hospital stay was 6.4±2.19 days in PTBD patients versus 1.6±0.49 days in EUS-BD patients (p = 0.001), and additional procedure cost was INR173166±3816 for PTBD group versus INR 125923 ±2798 for EUS-BD group (P=0.0001).

**Conclusions** For malignant biliary obstruction, EUS-BD increases the success rate of endoscopic biliary drainage, and reduces the need for PTBD. EUS-BD had lesser adverse events, duration of hospitalization, and procedure costs compared to PTBD. No significant change was observed for benign biliary obstruction.

## OP96 EUS GUIDED CHOLEDOCHODUODENOSTOMY WITH ELECTROCAUTERY ENHANCED LUMEN APPOSING METAL STENTS IN THE TREATMENT OF MALIGNANT DISTAL BILIARY OBSTRUCTION: MULTI-CENTRE COLLABORATION FROM THE UK AND IRELAND

**Authors** On W<sup>1</sup>, Paranandi B<sup>1</sup>, Smith AM<sup>1</sup>, Young A<sup>1</sup>, Pine J<sup>1</sup>, Venkatachalapathy SV<sup>2</sup>, James MW<sup>2</sup>, Aithal GP<sup>2</sup>, Varbobitis I<sup>2</sup>, Cheriyan D<sup>3</sup>, McDonald C<sup>3</sup>, Leeds JS<sup>4</sup>, Nayar M<sup>4</sup>, Oppong K<sup>4</sup>, Geraghty J<sup>5</sup>, Devlin J<sup>6</sup>, Ahmed W<sup>6</sup>, Scott R<sup>7</sup>, Wong T<sup>8</sup>, Huggett MT<sup>1</sup>

**Institute** 1 Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom; 2 Nottingham University and Nottingham University Hospitals NHS Trust, Queen's Medical Centre, Nottingham Digestive Diseases Centre (NDDC) and NIHR Nottingham Biomedical Research Centre (BRC), Nottingham, United Kingdom; 3 Beaumont Hospital & RCSI, Dublin, Ireland; 4 The Newcastle Upon Tyne Hospitals NHS Foundation Trust, Newcastle, United Kingdom; 5 Manchester University NHS Foundation Trust, Manchester, United Kingdom; 6 King's College Hospital NHS Foundation Trust, London, United Kingdom; 7 Belfast Health and Social Care Trust, Belfast, Ireland; 8 Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

DOI 10.1055/s-0041-1724355

**Citation:** On W, Paranandi B, Smith AM et al. OP96 EUS GUIDED CHOLEDOCHODUODENOSTOMY WITH ELECTROCAUTERY ENHANCED LUMEN APPOSING METAL STENTS IN THE TREATMENT OF MALIGNANT DISTAL BILIARY OBSTRUCTION: MULTI-CENTRE COLLABORATION FROM THE UK AND IRELAND. *Endoscopy* 2021; 53: S41.

**Aims** Endoscopic ultrasound guided choledochoduodenostomy (EUS-CDD) with electrocautery enhanced lumen apposing metal stents (EC-LAMS) has recently emerged as a viable option in the management of patients with malignant distal biliary obstruction (MDBO). We conducted a multi-centre collaboration from the UK and Ireland with an aim to analyse the pooled efficacy, safety and long term outcomes of EUS-CDD for treatment of MDBO.

**Methods** Consecutive patients with MDBO who underwent EUS-CDD with EC-LAMS at 8 tertiary hepatopancreatobiliary institutions between September 2016 and September 2020 were retrospectively analysed. Recorded variables included patient demographics, procedural characteristics and follow-up data.

**Results** 112 patients (59 male) were identified. The mean age was 72 years old (range 46 - 94 years old). Pancreatic adenocarcinoma was the commonest underlying malignancy in 63.4% (n = 71). The indications for EUS-CDD were: an inaccessible papilla (n = 49), tumour infiltration of papilla (n = 29) and unsuccessful biliary cannulation/stricture impassable with guidewire (n = 34). Technical success was achieved in 91.1% (n = 102) of patients. Additional stenting with plastic pigtailed through the EC-LAMS was performed in 26 patients at the discretion of the endoscopist to augment biliary drainage. Data for clinical success (reduction of serum bilirubin to ≤50% of original value at day 7) was available for 90 patients and was achieved in 94.4% of these (n = 84). The adverse event rate was 16.9% (n = 19) and further details are summarised in the table. The biliary re-intervention rate was 8.1% (n=8) in 99 patients with successful EUS-CDD and sufficient data (3 lost to follow-up), over a median follow-up of

70 days (range 3 - 761 days). Eight patients underwent attempted surgical resection of their primary tumour and in those who did, resection and formation of hepaticojejunostomy was successful.

**Conclusions** We present the first collaborative data from the UK and Ireland demonstrating EUS-CDD in MDBO to be efficacious with a reasonable safety profile.

► Tab. 1

Severity of adverse event	Adverse event description
Mild (n = 6)	<ul style="list-style-type: none"> <li>Cholangitis with no stent occlusion treated with antibiotics (n = 5)</li> </ul>
	<ul style="list-style-type: none"> <li>Pneumoperitoneum post stent deployment; bridged with metal stent with no post-procedural clinical consequence (n = 1)</li> </ul>
Moderate (n = 11)	<ul style="list-style-type: none"> <li>Cholangitis and stent occlusion requiring re-intervention (n = 6)</li> </ul>
	<ul style="list-style-type: none"> <li>Stent migration requiring re-intervention (n = 2)</li> </ul>
	<ul style="list-style-type: none"> <li>Stent occlusion without cholangitis requiring re-intervention (n = 1)</li> </ul>
	<ul style="list-style-type: none"> <li>Bile leak due to malposition of stent requiring re-intervention (n = 1)</li> </ul>
	<ul style="list-style-type: none"> <li>Bile leak due to maldeployment of stent; managed conservatively (n = 1)</li> </ul>
Severe (n = 2)	<ul style="list-style-type: none"> <li>Duodenal perforation requiring laparotomy (n = 2)</li> </ul>

## OP97 EUS-GUIDED CHOLEDOCHODUODENOSTOMY USING A LUMEN-APPPOSING METAL STENT FOR MALIGNANT DISTAL BILIARY OBSTRUCTION: A RETROSPECTIVE MULTICENTER ANALYSIS

**Authors** Fugazza A<sup>1</sup>, Fabbri C<sup>2</sup>, Di Mitri R<sup>3</sup>, Petrone MC<sup>4</sup>, Colombo M<sup>1</sup>, Ballarè M<sup>5</sup>, Cugia L<sup>6</sup>, Amato A<sup>7</sup>, Forti E<sup>8</sup>, De Nucci G<sup>9</sup>, Manno M<sup>10</sup>, Pollino V<sup>11</sup>, Binda C<sup>2</sup>, Macchiarelli R<sup>12</sup>, Leone N<sup>13</sup>, Badas R<sup>14</sup>, Lovera M<sup>15</sup>, Armellini E<sup>16</sup>, Redaelli A<sup>17</sup>, Mangiavillano B<sup>18</sup>, Brancaccio ML<sup>19</sup>, Attili F<sup>20</sup>, Togliani T<sup>21</sup>, Aragona G<sup>22</sup>, Conte E<sup>3</sup>, Maida M<sup>23</sup>, Sinagra E<sup>24</sup>, Repici A<sup>1</sup>, Tarantino I<sup>25</sup>, Anderloni A<sup>1</sup>

**Institute** 1 Humanitas Clinical and Research Center - IRCCS, Digestive Endoscopy Unit, Rozzano, Italy; 2 Forli-Cesena Hospital, Gastroenterology and Digestive Endoscopy Unit, Forli-Cesena, Italy; 3 ARNAS Civico Hospital, Gastroenterology and Endoscopy Unit, Palermo, Italy; 4 San Raffaele Scientific Institute - IRCCS, PancreatoBiliary Endoscopy and EUS Division, Milano, Italy; 5 Maggiore della Carità Hospital, Department of Gastroenterology, Novara, Italy; 6 Azienda Ospedaliera Universitaria Sassari, Gastroenterology and Digestive Endoscopy Department, Sassari, Italy; 7 Valduce Hospital, Department of Gastroenterology, Como, Italy; 8 Ospedale Ca' Granda Niguarda, Digestive and Interventional Endoscopy Unit, Milano, Italy;

9 Guido Salvini Hospital, Department of Gastroenterology, Garbagnate Milanese, Italy; 10 Carpi Hospital, Gastroenterology and Digestive Endoscopy Unit, Carpi, Italy; 11 Brotzu Hospital, Department of Endoscopic Surgery, Cagliari, Italy; 12 Policlinico S. Maria alle Scotte, Gastroenterology Unit, Siena, Italy; 13 Humanitas - Gradenigo, Digestive Endoscopy Unit, Torino, Italy; 14 University Hospital, Digestive Endoscopy Unit, Cagliari, Italy; 15 Fondazione Poliambulanza Istituto Ospedaliero, Digestive Endoscopy Unit, Brescia, Italy; 16 ASST Bergamo Est, Digestive Endoscopy Unit, Seriate, Italy; 17 San Gerardo Hospital, Gastroenterology and Endoscopy Unit, Monza, Italy; 18 Humanitas - Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy; 19 S. Maria delle Croci Hospital, Division of Gastroenterology, Ravenna, Italy; 20 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Digestive Endoscopy Unit, Roma, Italy; 21 ASST Carlo Poma, Gastroenterology and Endoscopy Unit, Mantova, Italy; 22 Guglielmo da Saliceto Hospital, Department of Internal Medicine, Piacenza, Italy; 23 S. Elia-Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 24 Fondazione Istituto San Raffaele Giglio, Gastroenterology and Endoscopy Unit, Cefalù, Italy; 25 IRCCS-ISMETT, Endoscopy Service, Department of Diagnostic and Therapeutic Services, Palermo, Italy  
DOI 10.1055/s-0041-1724356

**Citation:** Fugazza A, Fabbri C, Di Mitri R et al. OP97 EUS-GUIDED CHOLEDOCHODUODENOSTOMY USING A LUMEN-APPPOSING METAL STENT FOR MALIGNANT DISTAL BILIARY OBSTRUCTION: A RETROSPECTIVE MULTICENTER ANALYSIS. *Endoscopy* 2021; 53: S41.

**Aims** Endoscopic ultrasound-guided choledochoduodenostomy (EUS-CDS) with lumen apposing metal stent (LAMS) has emerged as a procedure with encouraging results in terms of safety and effectiveness in patients with malignant distal biliary obstruction and failed endoscopic retrograde cholangiopancreatography (ERCP).

**Methods** This is a multicenter, retrospective analysis including all cases of EUS-CDS with LAMS performed in patients with malignant distal biliary obstruction and failed ERCP in 23 Italian Centers from February 2015 to July 2020. Primary endpoints were technical and clinical success. Secondary endpoint was the adverse events (AEs) rate.

**Results** A total of 256 patients (55.1% males) with a mean age of 73.6 ± 12.4 were included in the study. The most common etiology of biliary stricture was pancreatic adenocarcinoma (75.4%), followed by ampullary cancer (8.6%) and cholangiocarcinoma (7.0%). The common bile duct median diameter was 17.0 ± 4.0 mm. Technical and clinical success were achieved in 93.0% and 89.5% of cases respectively, with a mean bilirubin reduction at two weeks of 73%. Median procedure time was 28.0 minutes. The mean follow-up was 148.1 days. Forty-nine AEs (13 mild, 28 moderate and 8 severe) occurred in 46 patients (18%) and were classified as intraprocedural 21 (42.9%), early < 15 days 10 (20.4%), delayed > 15 days 18 (37.6%). No fatal AE occurred.

**Conclusions** The results of our study show that EUS-guided biliary drainage with LAMS in case of malignant distal biliary obstruction in patients with failed ERCP represents a viable alternative in terms of effectiveness, safety and long-term result with an acceptable adverse event rate. To the best of our knowledge this is the largest study in the literature concerning this procedure.

Friday, 26 March 2021

11:00 – 11:45

Endoscopic management of leaks and fistula

Room 5

## OP98 ENDOLUMINAL VACUUM THERAPY USING A NEW “FISTULA SPONGE” IN SMALL DEFECTS OF THE UPPER GASTROINTESTINAL TRACT – A COMPARATIVE, SINGLE CENTER STUDY

**Authors** Ellrichmann M<sup>1</sup>, Hoffmann J<sup>2</sup>, Kataev V<sup>1</sup>, Richter F<sup>2</sup>, Egberts JH<sup>2</sup>, Schreiber S<sup>1</sup>, Becker T<sup>2</sup>, von Schoenfels W<sup>2</sup>, Reichert B<sup>2</sup>  
**Institute** 1 University Medical Center Schleswig-Holstein, Campus Kiel, Interdisciplinary Endoscopy, Medical Department 1, Kiel,

Germany; 2 University Medical Center Schleswig-Holstein, Department of General, Visceral-, Thoracic-, Transplantation- and Pediatric Surgery, Kiel, Germany

DOI 10.1055/s-0041-1724357

**Citation:** Ellrichmann M, Hoffmann J, Kataev V et al. OP98 ENDOLUMINAL VACUUM THERAPY USING A NEW “FISTULA SPONGE” IN SMALL DEFECTS OF THE UPPER GASTROINTESTINAL TRACT – A COMPARATIVE, SINGLE CENTER STUDY. *Endoscopy* 2021; 53: S42.

**Aims** Anastomotic insufficiencies (AI) and perforations of the upper gastrointestinal tract (uGIT) result in high morbidity and mortality. Besides surgical revision and endoscopic stent placement the endoluminal vacuum therapy (EVT) has been established as an additional strategy. So far, the Eso-Sponge is the only licensed EVT system with limitations in very small defects. Therefore, a fistula sponge (FS) was established in our center for the treatment of small defects of the uGIT as a new therapeutic approach. To evaluate success rates, indications and complications of both EVT options in a retrospective, single-center trial.

**Methods** Between 01/2018 and 12/2020 all patients undergoing either a FS-EVT or conventional EVT (cEVT) with Eso-Sponge (Braun Melsungen, Germany) due to AI or perforation of the uGIT were recorded. Following criteria were evaluated: indication, diameter of leakage, therapy success and complications. FSs were prepared using a nasogastric tube (6-16Ch diameter) and a porous drainage film (Suprasorb CNP, Lohmann&Rauscher, Germany) (length 1 – 6 cm) sutured to the distal tip.

**Results** N = 72 patients were included in this analysis (FS-EVT N = 20; cEVT N = 52). FS-EVT was performed in 60% suffering from AI (cEVT = 68%) and 40% from perforation (cEVT = 32%; p > 0.05). After 6.2 ± 3.3d of treatment FSs were exchanged every three days in average, comparable data were obtained for cEVT. The mean diameter of the defect was 9 mm in the FS-EVT group compared to 24 mm in cEVT (p < 0.001), the depth of the leakage showed no significant difference (46 mm for both groups). Therapeutic success (development of granulation tissue, resolution of the leak) was achieved in 90% (FS-EVT) and 91% (cEVT) respectively (p > 0.05).

**Conclusions** EVT comprises an extraordinary treatment option of transmural defects of the uGIT. In clinical practice fistulas < 10 mm with large abscess formations exhibit a special challenge, since intraluminal cEVT normally fails. In these cases the concept of extraluminal FS placement is safe and effective.

## OP99V WORKING UNDER PRESSURE - INSUFFLATION-INDUCED GASTRIC BAROTRAUMA DURING ESOPHAGEAL ESD

**Authors** Persyn D<sup>1,2</sup>, Dewulf D<sup>1,3</sup>, Bisschops R<sup>1</sup>

**Institute** 1 University Hospitals Leuven, Gastroenterology and Hepatology, Leuven, Belgium; 2 AZ Damiaan, Gastroenterology and Hepatology, Oostende, Belgium; 3 AZ Delta, Gastroenterology and Hepatology, Roeselare, Belgium  
DOI 10.1055/s-0041-1724358

**Citation:** Persyn D, Dewulf D, Bisschops R. OP99V WORKING UNDER PRESSURE - INSUFFLATION-INDUCED GASTRIC BAROTRAUMA DURING ESOPHAGEAL ESD. *Endoscopy* 2021; 53: S42.

A 64-year-old female underwent endoscopic submucosal dissection (ESD) for esophageal squamous cell carcinoma (cT1N0M0). During follow-up a stricture developed, managed with sequential balloon dilation. We also identified two metachronic lesions for which a second ESD was performed immediately after dilatation of the esophageal stricture.

The patient developed postoperative abdominal pain. Chest X-ray revealed a pneumoperitoneum. A linear perforation of 2cm in the lesser curvature of the gastric upper body was successfully closed using six hemoclips. Insufflation-induced gastric barotrauma is exceptionally rare. Air trapping by tight apposition of the endoscope at the proximal esophageal stricture is the most likely causative mechanism.

## OP100 ENDOSCOPIC VACUUM THERAPY AS TREATMENT OPTION IN PATIENTS WITH GASTROINTESTINAL ANASTOMOTIC LEAKAGES

**Authors** Pyatakova A<sup>1</sup>, Shishin K<sup>1</sup>, Nedoluzhko I<sup>1</sup>, Shumkina L<sup>1</sup>, Kurushkina N<sup>1</sup>

**Institut** 1 Moscow Clinical Scientific Center, Operative Endoscopy, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724359

**Citation:** Pyatakova A, Shishin K, Nedoluzhko I et al. OP100 ENDOSCOPIC VACUUM THERAPY AS TREATMENT OPTION IN PATIENTS WITH GASTROINTESTINAL ANASTOMOTIC LEAKAGES. *Endoscopy* 2021; 53: S43.

**Aims** Anastomotic leakage and associated mediastinitis and sepsis are serious complications after major abdominal interventions. The mortality rate in this group of patients measures up to 30%. Nevertheless, traditional curative surgical interventions lead to an increase in mortality up to 64%, which makes minimally invasive technologies beneficial.

The treatment strategy of a patient with anastomotic leakage aims to several problems solution: drainage and sanitation of the leakage cavity, nutritional support, closure of the perforation, prevention, and treatment of purulent complications.

Since 2006, a new method of endoscopic vacuum therapy in the management of anastomotic leaks has become available in clinical practice.

**Methods** From 2015 to 2020 years, anastomotic leakage was diagnosed in 12 patients. This involved 9 patients with esophagogastric anastomotic leakage and 3 patients with esophagojejunal leakage. The average age was 67.5 years. The size of anastomotic perforation ranged from 0.8 cm to 3 cm.

Vacuum therapy was used on the day of diagnosis of the leakage, except from the very first patient. In that case the therapy was applied on the 87th day after ineffective treatment. The patient underwent three sessions of endoscopic stenting combined with adequate drainage of the mediastinum.

**Results** 57 procedures were performed totally: the average number of replacements was 4 (1-7 times), the interval between procedures was 6 days (3-13 days), the duration of treatment was 13 days (1-66 days). 10 patients were treated successfully (75%).

There were two lethal outcomes due to progressive multiple organ failure in comorbid patients.

**Conclusions** Our experience showed that endoscopic vacuum therapy as a successful and economically justified method of leakage treatment. Although it demands appropriate skills, the technique is comparatively simple and feasible.

## OP101V ENDOSCOPIC MANAGEMENT OF ANASTOMOTIC LEAK AFTER RESECTIVE SURGERY FOR COLONIC-INFILTRATING PANCREATIC CANCER

**Authors** Di Mitri R<sup>1</sup>, Bonaccorso A<sup>1</sup>, Mocciaro F<sup>1</sup>, Conte E<sup>1</sup>, Amata M<sup>1</sup>, Lo Mastro M<sup>1</sup>, Marchesa P<sup>2</sup>, Scimeca D<sup>1</sup>

**Institute** 1 ARNAS Civico - Di Cristina - Benfratelli Hospital, Gastroenterology and Endoscopy Unit, Palermo, Italy; 2 ARNAS Civico - Di Cristina - Benfratelli Hospital, Oncologic Surgery Unit, Palermo, Italy

**DOI** 10.1055/s-0041-1724360

**Citation:** Di Mitri R, Bonaccorso A, Mocciaro F et al. OP101V ENDOSCOPIC MANAGEMENT OF ANASTOMOTIC LEAK AFTER RESECTIVE SURGERY FOR COLONIC-INFILTRATING PANCREATIC CANCER. *Endoscopy* 2021; 53: S43.

A 39-year-old man underwent colonic resection and distal splenopancreasectomy for colonic-infiltrating pancreatic cancer. The patient experienced fever and abdominal pain 5 days after surgery. CT-scan documented a 10cm intra-abdominal collection in splenic loggia. Endoscopy showed a large fistulous orifice opening beyond the colo-colonic junction with wide access to the peri-anastomotic cavity. We placed two double-pigtail stent across the leak. Size collection progressively reduced and the pig-tails were finally removed after 5

weeks. Endoscopy at 6 months showed a completely regular anastomosis. Stent placement, promoting granulation-tissue formation, allowed to treat successfully anastomotic leak with conservative approach, without needing of a protective ileostomy.

## OP102 ENDOSCOPIC MANAGEMENT OF ANASTOMOTIC LEAKS FOLLOWING ESOPHAGECTOMY FOR ESOPHAGEAL CANCER

**Authors** Ortigão R<sup>1</sup>, Pereira B<sup>2</sup>, Silva R<sup>1</sup>, Bastos P<sup>1</sup>, Pimentel-Nunes P<sup>1,3</sup>, Faria F<sup>2</sup>, Dinis-Ribeiro M<sup>1,3</sup>, Libânio D<sup>1,3</sup>

**Institute** 1 Oncology Institute of Porto, Gastroenterology Department, Porto, Portugal; 2 Oncology Institute of Porto, Intensive Care Unit, Porto, Portugal; 3 Faculty of Medicine, University of Porto, MEDCIDS, Porto, Portugal  
**DOI** 10.1055/s-0041-1724361

**Citation:** Ortigão R, Pereira B, Silva R et al. OP102 ENDOSCOPIC MANAGEMENT OF ANASTOMOTIC LEAKS FOLLOWING ESOPHAGECTOMY FOR ESOPHAGEAL CANCER. *Endoscopy* 2021; 53: S43.

**Aims** Anastomotic dehiscence after esophagectomy is associated with high morbimortality and impaired quality of life. The aim of this study was to evaluate the endoscopic treatment for esophageal anastomotic leakage (EAL) following esophagectomy for cancer.

**Methods** We retrospectively analyzed consecutive patients who undergone endoscopic treatment for EAL after esophagectomy for esophageal and gastroesophageal junction cancer at a tertiary oncology hospital between 2014 and 2019.

**Results** Eleven patients underwent endoscopic treatment for EAL (10 as first approach, 1 after failure of surgical treatment). The extent of esophageal dehiscence was <25% of the anastomotic circumference in 7 patients and between 25 and 50% in 4 patients. Median time from esophagectomy to EAL diagnosis was 5 days. Considering patients with endoscopic treatment as first approach, self-expandable metal stents (SEMS) were used in 6 patients, through-the-scope endoclips (TTS) in 2 patients, over-the-scope clip in 1 patient and 1 patient received TTS endoclip and SEMS. Technical and clinical success occurred in 9/10. One patient needed post-endoscopy surgical intervention and died during hospitalization. Complications related to stent insertion occurred in 4 patients (57.1%): 1 case of stent migration and 3 cases of esophageal stricture, all manageable with endoscopic treatments. Nine patients were discharged under oral intake (median time to oral intake of 10 days), after a median length of intensive care and general ward stay of 4 days (interquartile range 3-13.5) and 36 days (interquartile range 21-56.5), respectively. Endoscopic vacuum therapy was used in 1 patient after failure of surgical reintervention and endoscopic stent treatment. Thirteen sponges were used and the treatment lasted 31 days with leak healing. In-hospital mortality rate after endoscopic treatment was 9,1%.

**Conclusions** Endoscopic treatment is a reliable and efficient approach to the management of EAL, providing timely oral nutrition and avoiding the morbimortality of surgical reintervention.

Friday, 26 March 2021

11:00 – 11:45

Optimising EMR for large colorectal polyps

Room 6

## OP103 UNDERWATER- VERSUS CONVENTIONAL ENDOSCOPIC MUCOSAL RESECTION OF LARGE SESSILE OR FLAT COLONIC POLYPS: RESULTS OF A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

**Authors** Nagl S<sup>1</sup>, Ebigbo A<sup>1</sup>, Goelder SK<sup>1</sup>, Neuhaus L<sup>1</sup>, Roemmele C<sup>1</sup>, Weber T<sup>1</sup>, Braun G<sup>1</sup>, Probst A<sup>1</sup>, Schnoy E<sup>1</sup>, Messmann H<sup>1</sup>

**Institut** 1 University Hospital of Augsburg, Gastroenterology, Augsburg, Germany



DOI 10.1055/s-0041-1724362

**Citation:** Nagl S, Ebigo A, Goelder SK et al. OP103 UNDERWATER- VERSUS CONVENTIONAL ENDOSCOPIC MUCOSAL RESECTION OF LARGE SESSILE OR FLAT COLONIC POLYPS: RESULTS OF A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL. *Endoscopy* 2021; 53: S43.

**Aims** Conventional endoscopic mucosal resection (CEMR) with submucosal injection is the current standard for the resection of large, non-malignant colonic polyps. Underwater EMR (UEMR) has been shown to be more effective regarding R0 resection than CEMR for small and intermediate size colonic polyps. In this study we prospectively investigated whether UEMR is also superior to CEMR for large sessile or flat colonic polyps between 20 mm and 40 mm.

**Methods** In this randomized controlled study, patients with sessile or flat colonic lesions between 20 and 40 mm in size were randomly assigned to UEMR or CEMR. We analysed outcomes of 78 colonic lesions in the UEMR group and 71 in the CEMR group with regards to en bloc and R0 resection rate, recurrence rate, number of resected pieces, complication rate and resection time. R0 resection was defined as en bloc resection with histologically confirmed negative resection margins.

**Results** En bloc resection rates were 33,3% (UEMR) vs 19,7% (CEMR) ( $p = .0670$ ). The proportions of R0 resections were 32,1% (UEMR) vs 16,9% (CEMR) ( $p = .0378$ ). In case of piecemeal resection, UEMR was performed with significantly fewer pieces compared to CEMR (2-3 pieces: 75,0% UEMR vs 33,3% CEMR) ( $p = .0001$ ). 6-month follow up data are so far available for 111 patients. Recurrence rate and resection time were lower in the UEMR group but did not achieve significance, 12,2% vs 19,4% ( $p = .4378$ ) and 11 minutes vs 18 minutes, respectively. Periinterventional bleeding was also equal in both groups (23,1% UEMR vs 15,5% CEMR) ( $p = .3018$ ). No perforation occurred in either groups.

**Conclusions** UEMR shows a significantly higher R0 resection rate for large colonic lesions without increasing adverse events or procedure time. Piecemeal UEMR can be performed with significantly fewer pieces compared to piecemeal CEMR. In the preliminary 6-months follow-up data, recurrence rate did not show any significant difference. Final results will be presented subsequently.

## OP104 SAFETY AND EFFICACY OF HOT VERSUS COLD AVULSION FOR TREATMENT OF RESIDUAL, NON-LIFTING COLONIC POLYPS DURING EMR PROCEDURE

**Authors** Senada PA<sup>1</sup>, Pohl H<sup>2</sup>, Raimondo M<sup>3</sup>, Gomez V<sup>3</sup>, Brahmabhatt B<sup>3</sup>, Bouras E<sup>3</sup>, Gavric A<sup>4</sup>, Yang DJ<sup>5</sup>, Singh A<sup>6</sup>, Ngamruengphong S<sup>7</sup>, Gill JA<sup>8</sup>, von Renteln D<sup>9</sup>, Gordon S<sup>10</sup>, Wallace MB<sup>1</sup> Large Polyp Study Consortium  
**Institute** 1 Mayo Clinic, Department of Gastroenterology and Hepatology, Jacksonville, United States; 2 Dartmouth Geisel School of Medicine, Hanover, United States; 3 Mayo Clinic, Jacksonville, United States; 4 University Medical Center, Ljubljana, Slovenia; 5 University of Florida, Gainesville, United States; 6 Rush University Medical Center, Chicago, United States; 7 Johns Hopkins Hospital, Division of Gastroenterology and Hepatology, Baltimore, United States; 8 James A Haley VA, University of South Florida, Tampa, United States; 9 University of Montreal Medical Center (CHUM) and Research Center (CRCHUM), Montreal, Canada; 10 Dartmouth Hitchcock Medical Center, Lebanon, United States

DOI 10.1055/s-0041-1724363

**Citation:** Senada PA, Pohl H, Raimondo M et al. OP104 SAFETY AND EFFICACY OF HOT VERSUS COLD AVULSION FOR TREATMENT OF RESIDUAL, NON-LIFTING COLONIC POLYPS DURING EMR PROCEDURE. *Endoscopy* 2021; 53: S44.

**Aims** Endoscopic mucosal resection (EMR) of removal of large ( $\geq 20$ mm) colorectal polyps may be challenging in the presence of submucosal fibrosis. Avulsion with a biopsy forceps has been used to treat fibrotic areas, either with (hot) or without electrocautery (cold). We aimed to compare safety and efficacy of hot and cold avulsion to remove residual polyp during EMR.

**Methods** We conducted a secondary analysis of data from three different prospective multicenter studies which evaluated the efficacy and safety of EMR

procedures that required either hot or cold avulsion to treat residual tissue during lesion resection.

**Results** 277 (35.4% female) patients underwent EMR of 288 large colorectal polyps that required either hot ( $n=140$ ) or cold ( $n=148$ ) avulsion. Patients who underwent hot avulsion less frequently used antithrombotic medications, had slightly smaller polyps (median size 32 vs 30 mm), and a higher proportion of polyps with prior resection attempts. Other characteristics were comparable. There was no difference between hot and cold avulsion groups in the rate of immediate bleeding (23.6% vs. 17.6%) or the rate of serious adverse events (7.4% vs. 7.8%) (► **table**). Both methods had a similar neoplasia recurrence rate during first surveillance colonoscopy (21.8% vs. 22.7%). When accounting for baseline differences in multivariate analysis, avulsion method was not associated with recurrent neoplasia (OR=1.35 95% CI 0.68-2.66,  $p = 0.39$ ).

**Conclusions** To our knowledge this is largest study to date comparing hot and cold avulsion to remove residual tissue during EMR of large laterally spreading colorectal lesions. Safety and efficacy outcomes were similar between the two techniques. The higher recurrence rates compared to previous studies emphasize the challenges with resecting non-lifting tissue. The results suggest that choice of technique can be based on endoscopist preference.

► **Tab. 1**

	Hot avulsion (140 polyps in 136 patients)	Cold avulsion (148 polyps in 141 patients)	p-value
Bleeding during resection requiring intervention, n (%)	33 (23.6)	26 (17.6)	0.2
Severe adverse events, n (%)	10 (7.4)	11 (7.8)	0.2
-Bleeding, n (%)	9 (6.6)	6 (4.2)	
-Perforation, n (%)	0	2 (1.4)	
-Other, n (%)	1 (0.7)	3 (2.1)	
Recurrence at 1st surveillance colonoscopy, n/N (%)	24/110 (21.8)	25/110 (22.7)	0.8

## OP105V CAECAL LATERALLY SPREADING TUMOUR INVOLVING THE APPENDICEAL ORIFICE: THE CHALLENGES OF ENDOSCOPIC RESECTION

**Authors** Garrido M<sup>1</sup>, Alves Silva J<sup>1</sup>, Rocha M<sup>1</sup>, Pedroto I<sup>1</sup>, Küttner-Magalhães R<sup>1</sup>

**Institut** 1 Centro Hospitalar Universitário do Porto, Gastroenterology, Porto, Portugal

DOI 10.1055/s-0041-1724364

**Citation:** Garrido M, Alves Silva J, Rocha M et al. OP105V CAECAL LATERALLY SPREADING TUMOUR INVOLVING THE APPENDICEAL ORIFICE: THE CHALLENGES OF ENDOSCOPIC RESECTION. *Endoscopy* 2021; 53: S44.

A 78-year-old female, with no medical/surgical history, was referred because of a granular laterally spreading tumour (LST-G), NICE type 2, extensively involving the cecum and >50 % of the appendiceal orifice (AO), with deep extension in the appendiceal lumen.

Complete piecemeal endoscopic mucosal resection (EMR) was achieved using underwater cold snare and forceps avulsion techniques for the AO, followed by standard and underwater hot snare EMR of the remaining lesion. Histology revealed a low-grade tubulovillous adenoma.

We aim to discuss the challenges and techniques of EMR of LSTs involving the AO, as an alternative to full thickness resection or surgery.

## OP106 ENDOSCOPIC MUCOSAL RESECTION OF COLORECTAL POLYPS: RESULTS, ADVERSE EVENTS AND TWO-YEAR OUTCOME

**Authors** Chaoui I<sup>1</sup>, Demedts I<sup>1</sup>, Roelandt P<sup>1</sup>, Willekens H<sup>1</sup>, Bisschops R<sup>1</sup>

**Institut** 1 KU Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium

**DOI** 10.1055/s-0041-1724365

**Citation:** Chaoui I, Demedts I, Roelandt P et al. OP106 ENDOSCOPIC MUCOSAL RESECTION OF COLORECTAL POLYPS: RESULTS, ADVERSE EVENTS AND TWO-YEAR OUTCOME. *Endoscopy* 2021; 53: S45.

**Aims** Endoscopic mucosal resection (EMR) is the first-line treatment for large sessile and flat colorectal polyps in Western centres. However, adenoma recurrence after EMR continues to be a challenge. The aim of this study is to assess the efficacy, safety and recurrence rate of EMR in a tertiary centre and to identify risk factors associated with local recurrence during first surveillance endoscopy (SE1).

**Methods** We performed a retrospective study of 165 sessile and flat colorectal lesions measuring  $\geq 15$  mm, treated by EMR from October 2017 to October 2019. Colonoscopy and pathology reports were reviewed to identify recurrence. We used multivariate logistic regression to identify independent risk factors for recurrence at SE1.

**Results** EMR was performed for 165 colorectal polyps in 142 patients and successful resection was achieved in 158 cases (95.2%). SE1 data was available for 117 of 135 eligible cases (86.7%) after a median time of 6.2 months (IQR 5-9.9), and showed recurrent adenoma in 19 cases (16.2%). Recurrence was mainly treated endoscopically (78.9%). Three patients (15.8%) underwent surgery and one elected a conservative approach. Independent risk factors for recurrence at SE1 were lesion size  $\geq 40$  mm (odds ratio [OR] 4.03;  $p = 0.018$ ) and presence of high-grade dysplasia (OR 3.89;  $p = 0.034$ ). Early adverse event occurred in 4 patients (2.4%) and consisted of 3 bleeding complications and 1 perforation. Twelve patients (7.2%) presented with delayed bleeding of which 3 required transfusion, with radiological intervention in one case. All other complications were managed either conservatively ( $n = 8$ ) or endoscopically ( $n = 5$ ).

**Conclusions** EMR is a safe and effective treatment for large sessile and flat colorectal lesions with low recurrence rates. Lesion size  $\geq 40$  mm and presence of HGD were identified as risk factors for early recurrence, highlighting the importance of compliance to follow-up in these cases.

## OP107 ENDOSCOPIC SURVEILLANCE OF PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION OF COLORECTAL LESIONS: SHOULD WE STRATIFY?

**Authors** João M<sup>1</sup>, Taveira F<sup>1</sup>, Areia M<sup>1</sup>, Alves S<sup>1</sup>, Brito D<sup>1</sup>, Saraiva S<sup>1</sup>, Elvas L<sup>1</sup>, Cadime AT<sup>1</sup>

**Institut** 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724366

**Citation:** João M, Taveira F, Areia M et al. OP107 ENDOSCOPIC SURVEILLANCE

OF PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION OF COLORECTAL LESIONS: SHOULD WE STRATIFY? *Endoscopy* 2021; 53: S45.

**Aims** Recurrence rates up to 24% after piecemeal endoscopic resection (pEMRc) of colorectal lesions  $>20$  mm provides the rationale to recommend a standardized surveillance program. We intended to assess endoscopic recurrence rate and its predictors over 5 years of follow-up and to determine safety of a personalized surveillance strategy based on risk factors.

**Methods** Single centre prospective cohort study of colorectal lesions submitted to pEMRc since 2009 with a minimal follow-up of 5 years. Demographic, endoscopic and histologic data were retrieved from medical records. Risk factors for early and late recurrence were evaluated by multivariate regression. SERT score was applied to evaluated recurrence risk. Area under the curve (AUC) was calculated to evaluate SERT score as recurrence predictor.

**Results** A total of 188 patients were included, corresponding to 205 lesions [male gender: 64% ( $n=121$ ); median age: 70 (12)]. Mean follow-up time was 55 (12.7) months. Lesion median size was 30 (15) mm. Most lesions were located at the ascending colon ( $n=105$ ; 52%), 86% ( $n=176$ ) were granular homogeneous laterally spreading tumours and 47% ( $n=96$ ) had high-grade dysplasia. Six, 18, 36 and 60 months recurrence rates were 17%, 6%, 1.5% and 0%. Lesion size  $\geq 40$  mm (OR 3.3, 95%CI: 1.3-8.5) and difficult access (OR 1.8, 95%CI: 1.1-2.8) were predictors of 6 months recurrence. SERT=0 was a negative predictor for 6 months recurrence (OR 0.2, 95%CI: 0.1-0.6). Only high-grade dysplasia (OR 4, 95%CI 1.1-15) was identified as predictor for eighteen months recurrence. SERT score was able to predict recurrence with an AUC of 0.76 (0.68-0.84).

**Conclusions** Current surveillance protocol for colorectal lesions resected by pEMRc is effective. However, SERT=0 lesions could safely undergo first surveillance at 18 months. These conclusions are in line with previous published data and could reduce the burden of pEMR on patients and health systems.

Friday, 26 March 2021

12:00 – 12:45

EUS gastroenterostomy: A new gold standard for managing gastric outlet obstruction?

Room 5

## OP108 EUS-GUIDED GASTROENTEROSTOMY (EUS-GE) FOR GASTRIC OUTLET OBSTRUCTION (GOO) WITH A LUMEN-APPPOSING METAL STENT (LAMS): PROSPECTIVE MULTICENTER PROCEDURAL STANDARDIZATION OF THE PARALLEL ENTERAL CATHETER (PEC) METHOD

**Authors** Chavarría C<sup>1</sup>, Martín-Álvarez V<sup>1</sup>, Aparicio JR<sup>2</sup>, Subtil JC<sup>3</sup>, García Alonso FJ<sup>1</sup>, Vila JJ<sup>4</sup>, Martínez-Moreno B<sup>2</sup>, Busto Bea V<sup>4</sup>, de la Serna-Higuera C<sup>1</sup>, Perez-Miranda M<sup>1</sup>

**Institute** 1 Hospital Universitario Río Hortega, Gastroenterology, Valladolid, Spain; 2 Hospital General Universitario de Alicante, Gastroenterology, Alicante, Spain; 3 Clínica Universitaria de Navarra, Gastroenterology, Navarra, Spain; 4 Complejo Hospitalario de Navarra, Gastroenterology, Pamplona, Spain  
**DOI** 10.1055/s-0041-1724367

**Citation:** Chavarría C, Martín-Álvarez V, Aparicio JR et al. OP108 EUS-GUIDED GASTROENTEROSTOMY (EUS-GE) FOR GASTRIC OUTLET OBSTRUCTION (GOO) WITH A LUMEN-APPPOSING METAL STENT (LAMS): PROSPECTIVE MULTICENTER PROCEDURAL STANDARDIZATION OF THE PARALLEL ENTERAL CATHETER (PEC) METHOD. *Endoscopy* 2021; 53: S45.

**Aims** Several EUS-GE techniques are available. Fluid instillation into the small bowel using a nasobiliary drain as a PEC during transgastric LAMS insertion under EUS is simple but not yet standardized. We aimed at standardizing the PEC method for EUS-GE.

**Methods** Prospective IRB-approved multicenter study including consecutive consenting patients with unresectable malignant GOO undergoing primary EUS-GE between August 2019-November 2020. The PEC method involves 4

steps predefined as essential: 1) Over-the-wire, through-the-scope 7-8.5F nasobiliary drain placement distal to the stricture; 2) Over-the-catheter endoscope exchange with parallel echoendoscope gastric intubation; 3) Small bowel distention via PEC fluid instillation and targeting under EUS with fluoroscopy; 4) free-hand cautery-enhanced LAMS placement. Variables related to essential steps included procedure time, injected fluid volume and targeted small bowel diameter. Variations in non-essential steps were recorded and the dominant strategy defined. Adverse events (AE) were graded per ASGE. Clinical success defined as GOO Scoring System  $\geq 2$  at 30 days.

**Results** Six endoscopists performed EUS-GE in 38 patients: 53% male; median (IQR) age 77.3 (65.3-84.4) years. Overall technical success was achieved in 37 (97.4%) with a median (IQR) procedure duration of 24 (17.5-37.1)-minutes. The failed case resulted from small bowel misidentification and subsequent gastro-colostomy requiring endoscopic LAMS removal and clip-closure one week later (moderately severe AE). Stepwise technical success was obtained in all 4 essential steps of the PEC method by all operators in all patients, except step 3 in the failed case (99.3% stepwise technical success). Median (IQR) instilled fluid volume was 415 (240-530)-ml and median (IQR) targeted small bowel diameter was 27 (22-30)-mm. Variations in nonessential steps across operators are summarized in Table-1.

**Conclusions** When prospectively assessed, the PEC method for EUS-GE was consistently reproducible across operators with varying levels of experience and associated with high technical success rates and relatively short procedure times.

► Tab. 1

	Dominant Strategy	Variation 1	Variation 2
<b>Instilled Fluid</b> Single = water or SS Dual = SS + MB Triple = SS + MB + contrast	Triple (78.9%)	Single (7.9%)	Dual (13.2%)
<b>Instillation Method</b>	Pump (57.9%)	Syringe (31.6%)	Water tap adaptor (10.5%)
<b>LAMS diameter</b>	20-mm (68.4%)	15-mm (31.6%)	N/A.
<b>LAMS balloon dilation</b>	No (71.1%)	Yes (28.9%)	N/A.

## OP109 ENTERAL STENT PLACEMENT VERSUS EUS-GUIDED GASTROENTEROSTOMY FOR PALLIATION OF MALIGNANT GASTRIC OUTLET OBSTRUCTION: A COMPARATIVE SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Boghossian MB<sup>1</sup>, Funari MP<sup>1</sup>, de Moura DTH<sup>1</sup>, McCarty TR<sup>2</sup>, Sagae VMT<sup>1</sup>, Chen YI<sup>3</sup>, Mendieta PJO<sup>1</sup>, Neto FLP<sup>1</sup>, Ribeiro IB<sup>1</sup>, Cheng S<sup>1</sup>, Bernardo WM<sup>1</sup>, de Moura EGH<sup>1</sup>

**Institute** 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 Harvard Medical School - Brigham and Women's Hospital, Division of Gastroenterology, Hepatology and Endoscopy, Boston, United States; 3 McGill University Health Centre, Division of Gastroenterology & Hepatology, Montreal, Canada

DOI 10.1055/s-0041-1724368

**Citation:** Boghossian MB, Funari MP, de Moura DTH et al. OP109 ENTERAL STENT PLACEMENT VERSUS EUS-GUIDED GASTROENTEROSTOMY FOR PALLIATION OF MALIGNANT GASTRIC OUTLET OBSTRUCTION: A COMPARATIVE SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S46.

**Aims** Malignant gastric outlet obstruction (GOO) is associated with significant morbidity and decreased quality of life. Therefore, effective palliative treatment is critically important. This the first systematic review and meta-analysis to compare enteral stenting (ES) versus endoscopic ultrasound-guided gastroenterostomy (EUS-GE) for palliation of malignant GOO in terms of efficacy and safety.

**Methods** Searches were performed on MEDLINE, Central Cochrane, EMBASE, LILACS, and gray literature with no restrictions regarding the year of publication or language, to identify studies comparing ES versus EUS-GE for palliation of malignant GOO. Evaluated outcomes were: technical success, clinical success, length of hospital stay, severe adverse events, stent obstruction, stent obstruction due to tumor growth, symptom recurrence and re-intervention, and 30-day all-cause mortality.

**Results** Three studies with a total of 242 patients were included. The EUS-GE group demonstrated higher clinical success (RD -0.14, CI -0.25,- 0.03; P = 0.01), less severe adverse events (RD 0.39, CI 0.18-0.82; P = 0.01), lower rates of stent obstruction (RD -0,2, CI -0,29,-0,12; P < 0.00001), stent obstruction due to tumor growth (RD -0,14, CI -0,21,-0,06; P 0.0002), and symptom recurrence and re-intervention (RD -0.20, CI -0.31,-0.08; P = 0.0009). There was no statistical difference between the groups regarding technical success, length of hospital stay, and 30-day all-cause mortality. The results are summarized in ►Table 1.

►Table 1.

**Conclusions** EUS-GE is superior to ES for malignant GOO palliation regarding clinical success, symptom recurrence and re-intervention, severe adverse events, stent obstruction, and stent obstruction due to tumor growth.

►Tab. 1 Synthesis of results for each outcome (EUS-GE x ES).

OUTCOMES	OVERALL ANALYSIS (RESPECTIVELY)
<b>Technical success, and clinical success</b>	<b>RD = 0.01</b> (95% CI: -0.06, 0.04; P = 0.68); <b>RD = 0.14</b> , (95% CI -0.25,- 0.03; P = 0.01)
<b>Length of hospital stay, and severe adverse events</b>	<b>RD = 1.42</b> (95% CI: -0.31; 3.14; P = 0.11.); <b>RD = 0.39</b> , (95% CI 0.18-0.82; P = 0.01)
<b>Stent obstruction, and stent obstruction due to tumor growth</b>	<b>RD = -0,20</b> , (95% CI -0,29,-0,12; P = < 0.00001); <b>RD = -0,14</b> , (95% CI -0,21,-0,06; P = 0.0002)
<b>Symptom recurrence and re-intervention, and 30-day all-cause mortality</b>	<b>RD = -0.20</b> , (95% CI -0.31,-0.08; P = 0.0009); <b>RD = 0.22</b> , (95% CI 0.03, 1.71; P = 0.15)

## OP110 PROSPECTIVE AND MULTICENTER EVALUATION OF THE IMPACT OF EUS-GUIDED GASTROENTEROSTOMY (EUS-GE) ON THE QUALITY OF LIFE OF PATIENTS WITH MALIGNANT GASTRIC OUTLET OBSTRUCTION (GOO)

**Authors** Garcia Alonso FJ<sup>1</sup>, Martín-Álvarez V<sup>1</sup>, Chavarria C<sup>1</sup>, Aparicio JR<sup>2</sup>, Martínez-Moreno B<sup>2</sup>, Subtil JC<sup>3</sup>, Vila JJ<sup>4</sup>, Busto Bea V<sup>4</sup>, de la Serna-Higuera C<sup>1</sup>, Perez-Miranda M<sup>1</sup>

**Institute 1** Hospital Universitario Río Hortega, Gastroenterology, Valladolid, Spain; **2** Hospital General Universitario de Alicante, Instituto de Investigación Sanitaria y Biomédica de Alicante, ISABIAL, Gastroenterology, Alicante, Spain; **3** Clínica Universidad de Navarra, Pamplona, Spain; **4** Complejo Hospitalario de Navarra, Gastroenterology, Pamplona, Spain  
 DOI 10.1055/s-0041-1724369

**Citation:** Garcia Alonso FJ, Martín-Álvarez V, Chavarria C et al. OP110 PROSPECTIVE AND MULTICENTER EVALUATION OF THE IMPACT OF EUS-GUIDED GASTROENTEROSTOMY (EUS-GE) ON THE QUALITY OF LIFE OF PATIENTS WITH MALIGNANT GASTRIC OUTLET OBSTRUCTION (GOO). *Endoscopy* 2021; 53: S46.

**Aims** EUS-guided gastroenterostomy is emerging as an alternative for GOO. To date no studies have assessed the effect of EUS-GE on patients' quality of life (QoL).

**Methods** Prospective multicenter study including consecutive patients with unresectable malignant GOO undergoing primary EUS-GE performed by the orojejunal catheter method. The European Organization for Research and Treatment of Cancer (EORTC) questionnaire EORTC-QLQ-C30 was used to assess QoL at baseline and 1 month after the procedure with scores ranging from 0 to 100. Oral intake was assessed using the Gastric Outlet Obstruction Scoring System (GOOSS). Differences between the different outcomes of the EORTC-QLQ-C30 were assessed using linear mixed models with fixed effects for baseline values, and interaction with oncological treatment.

**Results** A total of 38 patients from 4 centers, including 20 (52.6%) males, with a median age of 77.3 years (IQR: 65.3-84.4) were included between August 2019-November 2020. Most frequent diagnoses were gastric (n=14;36.8%) and pancreatic adenocarcinoma (n=11;29%); twenty-two (57.9%) presented metastatic disease. Before EUS-GE, 20 (52.6%) tolerated no oral intake, 11 were on liquids only and 7 (18.4%) were on a soft diet.

Median time until discharge was 5 days (IQR: 2-6). Thirty days after the procedure, 81[MJP1].5% reached clinical success (GOOSS ≥2). Overall, 51.6% of patients received post-procedure palliative chemotherapy.

Overall, global health status improved after EUS-GE (Initial score: 33.3 (16.7-66.6), Final score: 66.6 (33.3-83.3), p=0.01). ▶ **Table 1** includes all functional scales, where no relevant changes were observed. Statistically significant improvements were seen in appetite loss (Initial: 66.6 (0-100), final: 0 (0-66.7), p=0.02), pain (Initial: 33.3 (0-66.7), final: 0 (0-16.7), p=0.02), and nausea and vomiting (Initial 50 (25-100), final 0 (0-16.7), p<0.001).

**Conclusions** EUS-GE allowed a soft/normal diet in 81.5% of patients and significantly improved the global health status score at one month. Significant reductions in pain, loss of appetite and nausea/vomiting were noted.

▶ **Tab. 1**

Physical functioning, med (IQR)	73.3 (33.3-96.7)	73.3 (33.3-86.7)	p = 0.77
Role functioning, med (IQR)	33.3 (16.7-66.7)	66.6 (33.3-100)	p = 0.09
Emotional functioning, med (IQR)	70.8 (41.7-83.3)	83.3 (75-100)	p = 0.06
Cognitive functioning, med (IQR)	83.3 (66.7-100)	100 (66.7-100)	p = 0.31
Social functioning, med (IQR)	58.3 (33.3-91.7)	66.7 (33.3-100)	p = 0.62

## OP111 EUS GUIDED GASTROJEJUNOSTOMY FOR THE MANAGEMENT OF GASTRIC OUTLET OBSTRUCTION: A SINGLE CENTRE EXPERIENCE

**Authors** On W<sup>1</sup>, Huggett MT<sup>1</sup>, Paranandi B<sup>1</sup>

**Institut 1** Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom  
 DOI 10.1055/s-0041-1724370

**Citation:** On W, Huggett MT, Paranandi B. OP111 EUS GUIDED GASTROJEJUNOSTOMY FOR THE MANAGEMENT OF GASTRIC OUTLET OBSTRUCTION: A SINGLE CENTRE EXPERIENCE. *Endoscopy* 2021; 53: S47.

**Aims** There are various modalities of management of gastric outlet obstruction (GOO) namely endoscopic enteral stenting, surgical bypass or placement of a venting gastrostomy tube. Endoscopic ultrasound guided gastrojejunostomy (EUS-GJ) via placement of a lumen apposing metal stent has recently emerged as a viable and effective method of managing GOO. We aimed to describe the procedural characteristics, technical and clinical outcomes in patients who underwent EUS-GJ at our institution.

**Methods** A prospectively collected database of consecutive EUS-GJ procedures from August 2018 to October 2020 at our institution was reviewed retrospectively. All procedures were performed by two expert pancreaticobiliary endoscopists. Recorded variables included patient demographics, technical success, clinical success, adverse events, 30-day all cause mortality and follow-up duration.

**Results** Sixteen patients (9 males) with a mean age of 64.5 years old (range 48 – 80 years old) were identified. Malignancy was the predominant aetiology of GOO in our patient cohort (81.3%, n=13). The technical success rate (defined as fluoroscopic and endoscopic confirmation of adequate stent deployment and positioning) was 93.8% (n=15), in whom the clinical success rate (defined as toleration of at least liquid diet without vomiting before discharge) was 100%. In the solitary case of technical failure, dislodgement occurred during balloon dilatation of the stent, the defect was endoscopically closed with clips and a duodenal stent was placed. The patient did not experience any adverse consequences post-procedure. Nine patients who required intravenous parenteral nutrition pre-procedure were successfully weaned off following EUS-GJ. The median follow-up was 109 days (range 5 – 383 days). No adverse events were encountered. One patient required re-intervention at day 70. 30-day all cause mortality was 6.3% (n=1) and the death was due to malignant disease progression.

**Conclusions** EUS-GJ is an effective and safe procedure for the management of GOO. It should be considered in appropriately selected patients if there is available expertise.

## OP112V EUS-GUIDED GASTROJEJUNOSTOMY AS A RESCUE THERAPY IN A PATIENT WITH MULTIPLE PREVIOUS PROCEDURES

**Authors** Perez-Cuadrado Robles E<sup>1</sup>, Perrod G<sup>1</sup>, Benosman H<sup>1</sup>, Ragot E<sup>2</sup>, Gallois C<sup>3</sup>, Cellier C<sup>1</sup>, Rahmi G<sup>1</sup>

**Institute 1** Georges-Pompidou European Hospital, Gastroenterology, Paris, France; **2** Georges-Pompidou European Hospital, Surgery, Paris, France; **3** Georges-Pompidou European Hospital, Oncology, Paris, France  
 DOI 10.1055/s-0041-1724371

**Citation:** Perez-Cuadrado Robles E, Perrod G, Benosman H et al. OP112V EUS-GUIDED GASTROJEJUNOSTOMY AS A RESCUE THERAPY IN A PATIENT WITH MULTIPLE PREVIOUS PROCEDURES. *Endoscopy* 2021; 53: S47.

A 57-years-old female presenting with a pancreatic cancer presented with gastric outlet obstruction. She has a previous duodenal stent and hepaticogastrostomy. A surgical jejunostomy was also carried out, but the improvement was moderate. The proximal jejunal loops were fixed and the long duodenal stent covered almost all the angle of Treitz. A double contrast injection was performed through a jejunal canula and the surgical jejunostomy. A direct endoscopic ultrasound guided gastrojejunostomy technique by using a 20mm lumen-



apposing metal stent (HotAxios) was performed without complications. The patient tolerated an oral solid intake. An abdominal CT confirmed the permeability of the gastrojejunostomy.

Friday, 26 March 2021  
Optimising outcomes of ERCP

12:00 – 12:45  
Room 6

### OP113 INFLUENCE OF THE NUMBER OF ENDOSCOPISTS PERFORMING ERCP ON THE OUTCOMES OF THE PROCEDURE

**Authors** Arrubla A<sup>1</sup>, Rodríguez Mendiluce I<sup>1</sup>, Hervas N<sup>1</sup>, Carrascosa J<sup>1</sup>, Jusue V<sup>1</sup>, Estremera F<sup>1</sup>, Uribarri L<sup>1</sup>, Busto V<sup>1</sup>, Gomez M<sup>1</sup>, Fernandez Urien I<sup>1</sup>, Albeniz E<sup>1</sup>, Vila JJ<sup>1</sup>

**Institut 1** Complejo Hospitalario de Navarra, Endoscopy Unit.

Gastroenterology Dpt., Pamplona, Spain

DOI 10.1055/s-0041-1724372

**Citation:** Arrubla A, Rodríguez Mendiluce I, Hervas N et al. OP113 INFLUENCE OF THE NUMBER OF ENDOSCOPISTS PERFORMING ERCP ON THE OUTCOMES OF THE PROCEDURE. *Endoscopy* 2021; 53: S48.

**Aims** To evaluate the impact of the number of endoscopists performing ERCP on the outcomes of this procedure in our hospital.

**Methods** From september 2013 until august 2015 ERCP was performed by 5 endoscopists in our hospital (period I), from september 2015 until december 2017 by 4 (period II) and from January 2018 until june 2020 by 3 (period III). A retrospective analysis of a prospectively filled database comparing the outcomes of ERCP in those periods was made. Patients with biliary ERCP and native papilla were included. EUS guided biliary drainage procedures were excluded. The main variables compared were cannulation and adverse effects (AE) rates. The higher complexity of the procedure according to the ASGE classification was measured, considering levels III and IV as high complex procedures. Individual outcomes of the endoscopists were analyzed.

**Results** A total of 2156 patients fulfilled inclusion criteria: 727 (period I), 972 (period II) and 862 (period III). Patients mean age was 70.71 ± 15.9, 70.32 ± 15.6 and 71.32 ± 15.4, respectively (p>0.05). Combined ERCP and diagnostic EUS were performed in 8.1%, 14.9% and 20.15%, respectively (p<0.05). The proportion of high complex procedures was 12%, 14.8% and 27% (p < 0.0001), respectively. The cannulation rate was significantly higher in periods II and III: 92.4% vs 93.3% vs 93% (p=0.037). The AE rate was 13.8%, 12.6% and 10.3% (p>0.05). Post-ERCP pancreatitis rate was significantly lower in period III: 8.5%, 7.3% and 5% (p=0.01). Only two endoscopists participated in all periods (► **Table I**).

With logistic regression, the cannulation and post-ERCP pancreatitis rates remained significantly better in period III after adjusting for sex, complexity and endoscopist.

**Conclusions** The lower number of endoscopists performing ERCP was associated with a higher rate of cannulation and a lower rate of post-ERCP pancreatitis, despite the greater complexity of the procedures. These beneficial effects seems to difer between endoscopists.

### OP114 UNCOMMON BILIARY COMPLICATIONS IN LIVER TRANSPLANT RECIPIENTS: AN OBSERVATIONAL ANALYSIS OVER 16 YEARS

**Authors** Fernandez-Simon A<sup>1</sup>, Vilagrasa-Vilella A<sup>1</sup>, Bofill A<sup>1</sup>, Chavez-Rivera K<sup>1</sup>, Cordova H<sup>1,2,3</sup>, Sendino O<sup>1,2,3</sup>, Cardenas A<sup>4,1,2,3</sup>

**Institute 1** Institut Clínic de Malalties Digestives i Metabòliques, Hospital Clínic, Endoscopy Unit. Gastroenterology Department, Barcelona, Spain;

**2** Institut d'Investigacions Biomèdiques August Pi-Sunyer (IDIBAPS), Barcelona, Spain;

**3** Ciber de Enfermedades Hepáticas y Digestivas (CIBEREHD), Barcelona, Spain;

**4** Institut Clínic de Malalties Digestives i Metabòliques, Hospital Clínic, Liver Transplant Unit. Hepatology Department, Barcelona, Spain

DOI 10.1055/s-0041-1724373

DOI 10.1055/s-0041-1724373

**Citation:** Fernandez-Simon A, Vilagrasa-Vilella A, Bofill A et al. OP114 UNCOMMON BILIARY COMPLICATIONS IN LIVER TRANSPLANT RECIPIENTS: AN OBSERVATIONAL ANALYSIS OVER 16 YEARS. *Endoscopy* 2021; 53: S48.

**Aims** Biliary complications are an important cause of morbidity and mortality in liver transplant (LT) recipients. The majority of these complications are due to strictures and leaks. However, other less frequent complications, such as papillary stenosis, biloma, hemobilia and functional biliary sphincter disorder (FBSD), have been poorly studied. The aim of this analysis is to describe the prevalence, risk factors and outcome of these infrequent biliary complications.

**Methods** We reviewed all endoscopic retrograde cholangiopancreatographies (ERCP) performed in LT recipients from 01/2003 to 12/2020. We included all LT patients with duct-to-duct anastomosis that developed biliary complications. Information on clinical and endoscopic findings was obtained from electronic health records and endoscopy databases.

**Results** 911 ERCP's were performed in 332 LT patients during the study period. Of these, 303 had post-LT biliary complications, while 29 patients presented non-biliary complications (i.e pancreatitis, pancreatic stones), 73% were men with a mean age of 64, 23 ±10,86 years. Two hundred forty-two patients (80%) had common complications (anastomotic/non-anastomotic strictures, biliary leaks and biliary stones or sludge). Sixty-one patients (20%) presented uncommon complications such as papillary stenosis, bilomas, hemobilia and biliary casts. Underlying liver disease was HCV in 48%, alcohol (17%), HBV (9%), fulminant hepatitis (8%), primary biliary cirrhosis (3%) and primary sclerosing cholangitis (0.4%). Age, gender, type of transplant, and underlying liver disease were compared between patients with common complications and uncommon complications. No significant differences were observed between the two groups. Interestingly failed cannulation was observed in 7% of patients in common biliary complications group vs 36% of patients with uncommon biliary complications (p<0.01).

**Conclusions** Approximately 20% of LT recipients develop uncommon biliary complications. No significant differences in risk factors or outcome were found between patients with common and uncommon biliary complications after LT.

### OP115 USEFULNESS OF ERCP BILE ASPIRATED CULTURE IN PATIENTS WITH ACUTE CHOLANGITIS

**Authors** Burciu C<sup>1</sup>, Sporea I<sup>1</sup>, Ratiu I<sup>1</sup>, Moga T<sup>1</sup>, Bende F<sup>1</sup>, AM Ghiuchici<sup>1</sup>, Mare R<sup>1</sup>, Miutescu B<sup>1</sup>

**Institut 1** Victor Babes University of Medicine and Pharmacy, Gastroenterology and Hepatology, Timisoara, Romania

DOI 10.1055/s-0041-1724374

**Citation:** Burciu C, Sporea I, Ratiu I et al. OP115 USEFULNESS OF ERCP BILE ASPIRATED CULTURE IN PATIENTS WITH ACUTE CHOLANGITIS. *Endoscopy* 2021; 53: S48.

► **Tab. 1**

Endoscopist	ERCP, n (I vs II vs III, p)	Cannulation Rate (%)	Total AE Rate (%)	Post-ERCP Pancreatitis Rate
Endoscopist 1	113 vs 326 vs 353, p = 0.001	89.4% vs 95.4% vs 96%, p = 0.01	11.5% vs 12% vs 8.2%, p = 0.243	5.3% vs 5.2% vs 3.4%, p = 0.456
Endoscopist 2	109 vs 251 vs 265, p = 0.02	93.6% vs 92% vs 94.7%, p = 0.468	13.8% vs 12% vs 15.5%, p = 0.5	9.2% vs 8.4% vs 8.7%, p = 0.9

**Aims** Targeted antimicrobial therapy can favour good clinical outcomes and can avoid recurrence of infection and early stent occlusion in patients with acute cholangitis. This study compares the microbial yield of blood cultures and bile aspirate cultures in patients with ascending cholangitis.

**Methods** We reviewed the medical records of patients suspected of acute cholangitis in our Endoscopy Department between June 2018 and December 2020. All patients underwent ERCP and bile culture was aspirated during the procedure. We divided the patients according to their severity of cholangitis from 2018 Tokyo Guidelines (TG18) and the microorganism found in the bile culture. Finally, we compared the bile culture findings with the blood culture.

**Results** 128 patients were included in this study, with a mean age of  $69.5 \pm 14.1$  years old. The male to female ratio was 1.06. Bile culture was sterile in 28/128 (21.9%). *E. Coli* was involved in 54/100 (54%), *Klebsiella* in 31/100 (31%) and *Enterococcus* in 16/100 (16%) of the cases. Cultures from the biliary aspirate grew single organism in 63 patients (63%), two organisms in 31 patients (31%) and three organisms in 6 patients (6%). The sterile bile culture rate decreased with the increasing severity of acute cholangitis: TG18 grade I (mild) 7/30 (23.3%) vs. grade II (moderate) 15/67 (22.4%) vs grade III (severe) 6/31 (19.4%). Two organisms or more were found in 56% of severe (grade III) acute cholangitis compared to mild and moderate cases, 30.4% and 29.2%, respectively. 24 patients had positive blood and bile culture. 17/24 (70.8%) had involved the same organism and 7/24 (29.2%) had different microorganisms involved. More than half of the sterile blood cultures (60.3%) are positive in bile culture.

**Conclusions** ERCP guided bile culture is a reliable tool for targeted antimicrobial therapy with a higher sensitivity when compared to blood culture.

## OP116 TIMING OF ADMISSION AND ENDOSCOPIC DRAINAGE IN PATIENTS WITH ACUTE CHOLANGITIS: WEEKDAY VERSUS WEEKEND

**Authors** [Burciu C<sup>1</sup>](#), [Sporea I<sup>1</sup>](#), [Ratiu I<sup>1</sup>](#), [Moga T<sup>1</sup>](#), [Bende F<sup>1</sup>](#), [AM Ghiuchici<sup>1</sup>](#), [Mare R<sup>1</sup>](#), [Miutescu B<sup>1</sup>](#)

**Institut** 1 Victor Babes University of Medicine and Pharmacy, Gastroenterology and Hepatology, Timisoara, Romania

**DOI** 10.1055/s-0041-1724375

**Citation:** Burciu C, Sporea I, Ratiu I et al. OP116 TIMING OF ADMISSION AND ENDOSCOPIC DRAINAGE IN PATIENTS WITH ACUTE CHOLANGITIS: WEEKDAY VERSUS WEEKEND. *Endoscopy* 2021; 53: S49.

**Aims** Acute cholangitis is a complication secondary to biliary obstruction and endoscopic retrograde cholangiopancreatography (ERCP) is the first-line procedure that can ensure biliary drainage. We aimed to determine the association between timing of hospital admission, ERCP (procedure day), length of hospital stay (LOHS) and mortality in patients diagnosed with acute cholangitis.

**Methods** We retrospectively investigated 128 patients with acute cholangitis between June 2018 and December 2020 at the Gastroenterology Department of the Timis Emergency County Hospital, Romania. All patients underwent ERCP. Patients were divided in two groups according to the timing of hospital admission, weekdays (WD) and weekend (WE) days group. We assessed their severity according to the 2018 Tokyo Guideline (TG18) criteria, and we analyzed the outcomes of mortality and length of hospital stay (LOHS).

**Results** A total of 128 patients were included in this study, with a mean age of  $69.5 \pm 14.1$  years old. The male to female ratio was 1.06. The majority of

them, 51.6% (66/128), had a benign obstruction. According to TG18, more than half of the patients (52.3%) had grade II (moderate) cholangitis and 31/128 (24.2%) patients had grade III (severe) cholangitis. Admission rate was significantly higher in the WD group compared to WE group, 64.8% vs. 35.2%, ( $p < 0.001$ ). Early ERCP (< 48 hours) was performed in 63/83 (75.9%) of patients from the WD group compared to 19/45 (42.2%) from the WE group ( $p < 0.001$ ). Late ERCP (>72 hours) had a significantly higher rate in the WE group compared to the WD group, 25/45 (55.6%) vs. 17/83 (20.8%),  $p = 0.0001$ . LOHS was higher for patients admitted during weekend, but the mortality rate had no statistically significant differences among the two groups.

**Conclusions** Timing of admission in patients for acute cholangitis is associated with LOHS, but not with inpatient mortality. Early ERCP predicts a shorter LOHS.

## OP117 PREDICTING CLINICAL OUTCOMES IN ACUTE GALLSTONE CHOLANGITIS: ARE TOKYO 2018 CRITERIA THE ANSWER?

**Authors** [Sequeira C<sup>1</sup>](#), [Costa Santos I<sup>1</sup>](#), [Coelho M<sup>1</sup>](#), [Dantas E<sup>1</sup>](#), [Mangualde J<sup>1</sup>](#), [Freire R<sup>1</sup>](#), [AP Oliveira<sup>1</sup>](#)

**Institut** 1 Setubal Hospital Center, Gastroenterology, Setubal, Portugal

**DOI** 10.1055/s-0041-1724376

**Citation:** Sequeira C, Costa Santos I, Coelho M et al. OP117 PREDICTING CLINICAL OUTCOMES IN ACUTE GALLSTONE CHOLANGITIS: ARE TOKYO 2018 CRITERIA THE ANSWER?. *Endoscopy* 2021; 53: S49.

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) has a pivotal role in the management of acute gallstone cholangitis (AGC), although timing is controversial. Tokyo 2018 Criteria (TC2018) allow severity categorisation, however stratifying the risk to determine ideal "Emergency Room (ER) to ERCP time" (ER-ERCPT) is an unmet need.

**Aims:** To assess the utility of TC2018 in predicting clinical outcomes (intra-hospital mortality [IHM], admission to Intensive Care Unit [ICU] and length of stay [LOS]). To identify additional predictors and evaluate the impact of ER-ERCPT on clinical outcomes.

**Methods** Retrospective review of AGC admissions who met TC2018 for definite cholangitis and underwent ERCP, from January 2015 to December 2019. TC2018 were applied retrospectively.

**Results** 189 patients were included (average age:  $74.1 \pm 13.2$  years; 52.6% male), 60 of which had mild, 84 moderate and 45 severe disease. Multivariate logistic regression analysis showed severe AGC (odds ratio(OR):18.3;  $p = 0.01$ ), C-reactive protein(CPR)  $\geq 15$  mg/dL (OR:7.1;  $p = 0.009$ ) and lactate  $\geq 2$  mmol/L (OR:10.5;  $p = 0.01$ ) at admission as independent risk factors for ICU admission. Median LOS was 7 days with interquartile range 2-13. Severe AGC ( $p = 0.001$ ), CPR  $\geq 15$  mg/dL ( $p = 0.001$ ) and lactate  $\geq 2$  mmol/L ( $p = 0.01$ ) were associated with significantly longer LOS. The IHM was 2.6% ( $n = 5$ ; all severe AC). Lactate  $\geq 2$  mmol/L was predictor of IHM (OR:15.7;  $p = 0.015$ ). 53.3% of severe patients had an ER-ERCPT < 48 hours (h) (moderate: 20.3%; mild 21.3%;  $p = 0.01$ ). ER-ERCPT < 48h was associated with lower LOS ( $p = 0.03$ ), but not with significantly lower rate of ICU admission and IHM. Among severe patients, ER-ERCPT < 24h was significantly associated with a greater reduction in organ failures (OF) in the first 48h of hospitalization (OR:0.24;  $p = 0.04$ ).

**Conclusions** Severe AGC, lactate  $\geq 2$  mmol/L and CPR  $\geq 15$  mg/dL are independent prognostic factors of adverse outcomes (LOS and ICU admission). A shorter ER-ERCPT had positive impact in reducing LOS and number of OF. Inclusion of lactate and CPR may improve the current TC2018 with respect to risk stratification and subsequent management.

Friday, 26 March 2021

14:00 – 14:45

AI in the colon: Better detection and characterisation of polyps?

Room 6

### OP118 STANDALONE PERFORMANCE OF A NEW INTEGRATED CADE/CADX SYSTEM&NBSP;FOR DETECTION AND CHARACTERIZATION OF COLORECTAL NEOPLASIA

**Authors** Antonelli G<sup>1,2</sup>, Repici A<sup>3</sup>, Weigt J<sup>4</sup>, Afifi A<sup>4</sup>, Kliegis L<sup>4</sup>, Hassan C<sup>1</sup>, Neumann H<sup>5</sup>

**Institute** 1 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 2 Sapienza University of Rome, Department of Translational and Precision Medicine, Rome, Italy; 3 Humanitas Clinical and Research Center – IRCCS, Endoscopy Unit, Milan, Italy; 4 Otto-v. Guericke University, Department of Gastroenterology, Hepatology and Infectious Diseases, Magdeburg, Germany; 5 University Hospital Mainz, Department of Interdisciplinary Endoscopy, Mainz, Germany

DOI 10.1055/s-0041-1724377

**Citation:** Antonelli G, Repici A, Weigt J et al. OP118 STANDALONE PERFORMANCE OF A NEW INTEGRATED CADE/CADX SYSTEM&NBSP;FOR DETECTION AND CHARACTERIZATION OF COLORECTAL NEOPLASIA. *Endoscopy* 2021; 53: S50.

**Aims** Artificial Intelligence (AI) may reduce miss rate of colorectal neoplasia at colonoscopy by improving lesion recognition (CADE), and it may also reduce the cost of pathology by improving optical diagnosis (CADx).

**Methods** We trained and tested the first regulatory-approved AI system combining CADE and CADx in the same platform. A library of  $\geq 200,000$  images of 1 063 polyps from 4 European centers was created, and used to train two Convolutional Neural Network models for CADE (1 063 polyps white-light [WL] and 963 Linked Colour Imaging [LCI]) and CADx (662 WL and 1,202 Blue light Imaging [BLI]). The systems were subsequently tested with two image sets (CADE: 459 WL, 455 LCI; CADx: 133WL, 134 BLI) that were independent from the training set. The testing sets were also evaluated by 3 expert endoscopists, and 3 non-expert endoscopists using the AI for benchmarking.

**Results** Overall, 914 and 267 images were used to test CADE and CADx, respectively. CADE system showed a sensitivity, specificity and accuracy of 92.9%, 90.6% and 91.7%, respectively, in detecting colorectal neoplasia. Experts showed higher accuracy (94.6% vs 91.7%;  $p < 0.05$ ) and specificity (94.2% vs. 90.6%;  $p < 0.05$ ), and a similar sensitivity, while non-experts+CADE showed comparable sensitivity (94.8%,  $p = 0.27$ ), but lower specificity (76.2%,  $p < 0.0001$ ) and accuracy (85.4%,  $p < 0.0001$ ) compared to both experts and CADE alone. CADx system showed a sensitivity, specificity and accuracy of 85%, 79.4% and 83.6%, respectively, in the characterization of colorectal neoplasia. Experts alone showed comparable performances, while non-experts using CADx showed comparable accuracy (80.1%,  $p = 0.4$ ), but lower specificity (62.7%,  $p < 0.0001$ ) compared to experts or CADx alone. No difference in CADE and CADx accuracy was noticed when comparing white-light with advanced imaging.

**Conclusions** The high accuracy shown by CADE and CADx systems is similar to that of expert endoscopists, prompting its implementation in clinical practice. When using CAD, inexpert endoscopists achieve similar performances to those of expert endoscopists.

### OP119 IS ARTIFICIAL INTELLIGENCE (CAD EYE) USEFUL TO NOT ONLY DETECT BUT ALSO TO CHARACTERIZE SMALL COLORECTAL POLYPS? FIRST RESULTS FROM A PROSPECTIVE FRENCH MULTICENTER STUDY

**Authors** Coron E<sup>1</sup>, Vanbiervliet G<sup>2</sup>, Prouvost V<sup>1</sup>, Medlej C<sup>3</sup>, Musquer N<sup>1</sup>, Le Rhun M<sup>1</sup>, Perrod G<sup>3</sup>, Rahmi G<sup>3</sup>

**Institute** 1 Nantes University Hospital, Digestive Diseases Institute, Nantes, France; 2 l'Archet Hospital, Gastroenterology and Hepatology, Nice, France; 3 Hopital Europeen Georges Pompidou, Gastroenterology and Hepatology, Paris, France

DOI 10.1055/s-0041-1724378

**Citation:** Coron E, Vanbiervliet G, Prouvost V et al. OP119 IS ARTIFICIAL INTELLIGENCE (CAD EYE) USEFUL TO NOT ONLY DETECT BUT ALSO TO CHARACTERIZE SMALL COLORECTAL POLYPS? FIRST RESULTS FROM A PROSPECTIVE FRENCH MULTICENTER STUDY. *Endoscopy* 2021; 53: S50.

**Aims** "Resect and discard" strategies are difficult to implement since optical diagnosis is challenging. Our aim was to assess the feasibility and performances of a new commercially available system for colorectal polyps.

**Methods** Colonoscopies were performed in 3 centers by 6 expert endoscopists using 700-series colonoscopes equipped with AI (CAD EYE, Fujifilm). Firstly, AI was activated in the caecum in detection mode. Secondly, when a lesion was detected, the endoscopist was asked to switch AI "off" and to make a prediction of histology [adenoma, sessile serrated lesion (SSL), hyperplastic polyp (HP)] using the Blue Light Imaging (BLI) mode. This prediction was reported on a dedicated CRF. Thirdly, AI was activated again in BLI mode ("Neoplastic" referring to adenomatous lesions and "Hyperplastic" to HP). All predictions were compared to final histology. A simplified analysis was performed grouping HP and SSL as 'hyperplastic lesions' in order to compare CAD EYE and endoscopists' diagnostic performances.

**Results** Overall, 153 polyps in 88 patients were retrieved endoscopically and fully documented by histology (n=86 adenomas, n=56 HP, n=11 SSL). Polyp was detected by CAD EYE before the endoscopist in 56/156 (36%) of cases. Mean polyp size was 4.9 mm [range 1-10 mm]. Polyp morphology was Paris Ip (4%), Is (18%), Ila (71%), I Ib (7%). Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of CAD EYE were 82%, 94%, 95% and 81%, respectively vs 88%, 91%, 93% and 86% for expert endoscopists. Diagnostic accuracy of CAD EYE and expert endoscopist were 88% and 90%, respectively ( $p = NS$ ). While CAD EYE classified all SSL as "hyperplastic", endoscopists were able to classify correctly 8/11 of these lesions as SSL.

**Conclusions** CAD EYE system shows promising results not only for detection but also for characterization of small colorectal polyps <10mm. However, these results need to be confirmed in larger studies.

### OP120 VALIDATION OF A NOVEL AI SYSTEM (CADEYE) FOR IN VIVO CHARACTERIZATION OF COLORECTAL POLYPS

**Authors** Abdelrahim M<sup>1</sup>, Hossain E<sup>1</sup>, Subramaniam S<sup>1</sup>, Bhandari P<sup>1</sup>  
**Institut** 1 Queen Alexandra Hospital, Portsmouth, United Kingdom  
DOI 10.1055/s-0041-1724379

**Citation:** Abdelrahim M, Hossain E, Subramaniam S et al. OP120 VALIDATION OF A NOVEL AI SYSTEM (CADEYE) FOR IN VIVO CHARACTERIZATION OF COLORECTAL POLYPS. *Endoscopy* 2021; 53: S50.

**Aims** The aim of this study is to evaluate the diagnostic performance of a novel artificial intelligence system for characterization of colorectal polyps and compare its performance to endoscopists.

**Methods** We validated a recently developed AI system for polyp detection and characterization (EW10-EC02 CAD-EYE system from Fujifilm Japan). This is the only CE marked and commercially available system for real time characterization of polyps. The AI model was developed using convolutional neural networks CNN. It was pre trained on more than 50000 frames for detection and characterization of colorectal polyps. We assessed this system on real time unedited videos in two phases. In phase 1, we internally validated the system on unedited recorded colonoscopy videos from our endoscopy library. In phase 2, we prospectively evaluated the CADEYE system on real time colonoscopy videos and compared it to endoscopists' performance as part of an ongoing optical diagnosis study. We collected data on sensitivity, specificity, NPV, accuracy and concordance between histology and AI based surveillance intervals.

## Results

The system was assessed on a total of 150 polyps (59.33% neoplastic). Overall, sensitivity, specificity, NPV and accuracy of the AI system were 94.38%, 95.08%, 92.06% and 94.67% respectively. In phase (2) we prospectively included 90 polyps including 60 (66.6%) neoplastic, sensitivity, specificity, NPV and accuracy of the AI system were 95.0%, 96.67%, 90.62% and 95.56% respectively, compared to 81.67%, 80.0%, 68.57% and 81.11% in the endoscopists group, respectively. ► **Table (1)** summarizes phase(2) results. Agreement between histology and AI-based surveillance decisions was 94.44% based on BSG guidelines, and 97.22% based on ESGE and ASGE guidelines.

**Conclusions** This AI system diagnosed colorectal polyps on prospectively recorded unaltered endoscopy videos with high degree of accuracy, regardless of polyp size, morphology or location. If proven in real time studies, this could support the implementation of resect and discard strategy, with significant clinical and cost implications.

► Tab. 1

Number of polyps =90 (60 adenomatous)	CADEYE	Endoscopists
Sensitivity	95.00 %	81.67 %
Specificity	96.67 %	80.00 %
NPV	90.62 %	68.57 %
Accuracy	95.56 %	81.11 %

## OP121 PROSPECTIVE EVALUATION OF A NEW ARTIFICIAL INTELLIGENCE SYSTEM FOR DETECTION OF COLON POLYPS

**Authors** Zippelius C<sup>1</sup>, Schedel J<sup>1</sup>, Brookman-Amisshah D<sup>1</sup>, Muehlenberg K<sup>1</sup>, Schorr W<sup>1</sup>, Salzberger A<sup>1</sup>, Federle C<sup>1</sup>, Zeman F<sup>2</sup>, Pech O<sup>1</sup>

**Institute** 1 Krankenhaus Barmherzige Brüder Regensburg, Department of Gastroenterology and interventional Endoscopy, Regensburg, Germany; 2 University Medical Centre Regensburg, Centre for Clinical Studies, Regensburg, Germany

DOI 10.1055/s-0041-1724380

**Citation:** Zippelius C, Schedel J, Brookman-Amisshah D et al. OP121 PROSPECTIVE EVALUATION OF A NEW ARTIFICIAL INTELLIGENCE SYSTEM FOR DETECTION OF COLON POLYPS. *Endoscopy* 2021; 53: S51.

**Aims** The adenoma detection rate (ADR) varies significantly between different endoscopists leading to an adenoma miss rate (AMR) of up to 26%. To improve endoscopic quality and to reduce the rate of interval cancer artificial intelligence (AI) systems can be valuable. We evaluated the efficacy of an AI system in real time colonoscopy and its influence on the AMR and the ADR in a clinical setting.

**Methods** In this prospective study we analyzed 150 patients (age 65±14, 69 women, 81 men) undergoing diagnostic colonoscopy at a single endoscopy center in Germany from June to October 2020. The AI system GI Genius (Medtronic) detects polyps during real time colonoscopy by highlighting lesions with a frame. Every patient was examined at the same time by the endoscopist and the AI using two different opposing screens. The AI, which was overseen by a second observer, was not visible to the endoscopist. Primary outcome was the AMR. Absolute and relative frequencies are presented with 95%-Confidence Intervals.

**Results** There was no significant difference ( $p=0.754$ ) concerning the AMR between the AI system (6/197, 3.0% [1.1-6.5]) and routine colonoscopy (4/197, 2.0% [0.6-5.1]). The polyp miss rate of the AI system (14/311, 4.5% [2.5-7.4]) was not significantly different ( $p=0.720$ ) from routine colonoscopy (17/311, 5.5% [3.2-8.6]). There was no significant difference ( $p=0.500$ ) between the ADR with routine colonoscopy (78/150, 52.0% [43.7-60.2]) and the AI system (76/150, 50.7% [42.4-58.9]). Routine colonoscopy detected adenomas in two patients that were missed by the AI system.

**Conclusions** We found that the AI system proves as a valuable second observer during real time colonoscopy and can keep up even with experienced endoscopists with an ADR >50%. Its application in routine colonoscopy could decrease the performance variability between endoscopists and increase the overall ADR in less experienced endoscopists. DRKS00022279.

## OP122 INCREMENTAL YIELD OF ARTIFICIAL INTELLIGENCE IN FOLLOW-UP SCREENING COLONOSCOPIES – AN INTERIM ANALYSIS

**Authors** Milluzzo SM<sup>1,2</sup>, Cesaro P<sup>1</sup>, Hassan C<sup>3</sup>, Pesatori EV<sup>1,2</sup>, Piccirelli S<sup>1,2</sup>, Catino F<sup>1,2</sup>, Quadarella A<sup>1,2</sup>, Olivari N<sup>1</sup>, Minelli Grazioli L<sup>1</sup>, Codazzi M<sup>1</sup>, Bizzotto A<sup>1</sup>, Schivardi MR<sup>4</sup>, Spada C<sup>1,2</sup>

**Institute** 1 Fondazione Poliambulanza Istituto Ospedaliero, Digestive Endoscopy Unit and Gastroenterology, Brescia, Italy; 2 Fondazione Policlinico Universitario A. Gemelli IRCCS -Università Cattolica del Sacro Cuore, Department of Gastroenterology, Rome, Italy; 3 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 4 ATS Brescia, Colon-rectal Screening Program, Brescia, Italy

DOI 10.1055/s-0041-1724381

**Citation:** Milluzzo SM, Cesaro P, Hassan C et al. OP122 INCREMENTAL YIELD OF ARTIFICIAL INTELLIGENCE IN FOLLOW-UP SCREENING COLONOSCOPIES – AN INTERIM ANALYSIS. *Endoscopy* 2021; 53: S51.

**Aims** Although colonoscopy is the gold standard for detection of precancerous colonic lesions, they are still missed and this is directly related with an increased risk of interval colorectal cancer. To improve the diagnostic performances of colonoscopy, novel technologies have been recently developed, in particular Artificial Intelligence (AI). The objective of this study was to compare the diagnostic yield obtained by using the GI Genius (Medtronic, Minneapolis, USA) AI software during colonoscopy to the yield obtained by the standard colonoscopy (SC).

**Methods** This is a single-center RCT evaluating consecutive patients undergoing follow-up screening colonoscopy at Fondazione Poliambulanza Istituto Ospedaliero, Brescia, Italy. Patients were randomly assigned to SC or AI. Subjects with  $\leq 1$  in any segment according to Boston Bowel Preparation Scale were excluded from analysis. Polyp Detection Rate (PDR), Adenoma Detection Rate (ADR), Serrated Detection Rate (SDR), patients with advanced adenomas (i.e. villous histology, high-grade dysplasia or low-grade dysplasia > 1cm) and patients with  $\geq 3$  adenomas were compared between the group using  $\chi^2$ -test.  $P < 0.05$  were considered statistically significant.

**Results** Data about 275 patients (M:F = 157:118) were collected. 126 patients were assigned to AI, while 149 to SC arm. 15 patients (6 AI and 9 SC group) were excluded due to inadequate cleansing. Statistically significant improvements were shown in terms of PDR (83.3% [100/120] vs 73.5% [103/140];  $p=0.029$ ), ADR (71.6% [86/120] vs 58.5% [82/140];  $p=0.014$ ) and patients with  $\geq 3$  adenomas (28.3% [34/120] vs 17.1% [24/140];  $p=0.016$ ). Although an increase of the other outcomes, no statistical significance was reached for SDR (15% [18/120] vs 12.1% [13/140];  $p=0.2$ ) and patients with advanced adenomas (12.5% [15/120] vs 9.2% [13/140];  $p=0.2$ ).

**Conclusions** This preliminary results suggest that AI can be a useful tool during screening colonoscopy, since it can improve the neoplasia yield.



Friday, 26 March 2021  
Challenges in gastric ESD

14:00 – 14:45  
Room 5

## OP123 ENDOSCOPIC SUBMUCOSAL DISSECTION: A COUNTRY IMPLEMENTATION EXPERIENCE AND RESULTS

**Authors** Rodríguez-Carrasco M<sup>1</sup>, Libânio D<sup>1,2</sup>, Pimentel-Nunes P<sup>1,2,3</sup>, Barreiro P<sup>4,5</sup>, Ferreira A<sup>6</sup>, Küttner-Magalhães R<sup>7</sup>, Pinho R<sup>8</sup>, Boal Carvalho P<sup>9</sup>, Areia M<sup>10</sup>, Lage J<sup>11</sup>, Serrano M<sup>12</sup>, Silva J<sup>12</sup>, Dias-Pereira A<sup>12</sup>, Carvalho L<sup>11</sup>, Cadime AT<sup>10</sup>, Cotter J<sup>9</sup>, Carvalho J<sup>8</sup>, Pedroto I<sup>7</sup>, Gonçalves R<sup>6</sup>, Chagas C<sup>4</sup>, Dinis-Ribeiro M<sup>1,2</sup>

**Institute 1** Portuguese Oncology Institute of Porto, Gastroenterology Department, Porto, Portugal; **2** Faculty of Medicine, University of Porto, MEDCIDS - Department of Community Medicine, Health Information and Decision, Porto, Portugal; **3** Faculty of Medicine, University of Porto, Department of Surgery and Physiology, Porto, Portugal; **4** Lisboa Ocidental Hospital Centre, Egas Moniz Hospital, Gastroenterology Department, Lisbon, Portugal; **5** Lusíadas Hospital, Gastroenterology Department, Lisbon, Portugal; **6** Hospital of Braga, Gastroenterology Department, Braga, Portugal; **7** Porto University Hospital Centre, Gastroenterology Department, Porto, Portugal; **8** Vila Nova de Gaia Hospital Centre, Gastroenterology Department, Vila Nova de Gaia, Portugal; **9** Senhora da Oliveira Hospital, Gastroenterology Department, Guimarães, Portugal; **10** Portuguese Oncology Institute of Coimbra, Gastroenterology Department, Coimbra, Portugal; **11** Trás-os-Montes e Alto Douro Hospital Centre, Gastroenterology Department, Vila Real, Portugal; **12** Portuguese Oncology Institute of Lisbon, Gastroenterology Department, Lisbon, Portugal

DOI 10.1055/s-0041-1724382

**Citation:** Rodríguez-Carrasco M, Libânio D, Pimentel-Nunes P et al. OP123 ENDOSCOPIC SUBMUCOSAL DISSECTION: A COUNTRY IMPLEMENTATION EXPERIENCE AND RESULTS. *Endoscopy* 2021; 53: S52.

**Aims** The adoption of endoscopic submucosal dissection (ESD) among Western countries remains slow due in part to the lack of a standardized training program. We aimed to analyze training and outcomes of ESD performed by Portuguese endoscopists with previous training in our centre and implementation at their own centres.

**Methods** All endoscopists trained at our centre were invited to a survey regarding 1) training period; 2) ESD outcomes and 3) implementation process. The surveyed period was the respective one since the first ESD performed. The 2011-2020 period in our own institution was considered as control (>2 endoscopists).

**Results** Nine endoscopists completed the survey (response rate of 100%). The median interval to ESD implementation in each centre was one year, being the lack of mentoring (53%) and facilities (40%) referred as the most frequent barriers for ESD implementation and development processes. Attending hands-on courses was the most common method to complement the learning process either prior to or after the period of training with us (89% and 78%). During the surveyed period, a total of 1229 ESD were performed by the 9 endoscopists, mostly for gastric lesions (72.6%). Median curative resection rate was 87% (interquartile range 74-93.3), and median R0 resection rate was 92% (interquartile range 81-96.8) vs curative and R0 resection rate of 81% and 92% respectively in our centre. Overall complication rate was 7.4% (vs 6.5%). Concerning future goals, endoscopists aimed to improve their technical progression according to the procedure's complexity and to increase ESD-team size.

**Conclusions** Learning ESD through participation in hands-on courses and visiting high-volume centres seems to be adequate to achieve a good competence at initial stage of ESD. However, mentoring is essential for technical progression and this represents the fundamental barrier during the adoption of ESD which may be overcome with the implementation of a structured training program.

## OP124V REMOVAL OF AN EMBEDDED FOREIGN BODY IN THE STOMACH BY SUBMUCOSAL ENDOSCOPIC DISSECTION TECHNIQUE

**Authors** Carvalho AC<sup>1</sup>, Araújo R<sup>1</sup>, Cardoso R<sup>1</sup>, Pires F<sup>1</sup>, Ventura S<sup>1</sup>, Pinho J<sup>1</sup>, Martins D<sup>1</sup>, Sousa P<sup>1</sup>, Cancela E<sup>1</sup>, Castanheira A<sup>1</sup>, Ministro P<sup>1</sup>, Silva A<sup>1</sup>

**Institute 1** Centro Hospitalar Tondela-Viseu, Viseu, Portugal

DOI 10.1055/s-0041-1724383

**Citation:** Carvalho AC, Araújo R, Cardoso R et al. OP124V REMOVAL OF AN EMBEDDED FOREIGN BODY IN THE STOMACH BY SUBMUCOSAL ENDOSCOPIC DISSECTION TECHNIQUE. *Endoscopy* 2021; 53: S52.

We report a case of a patient with past hospitalization due to suspected foreign body gastric perforation as evidenced by CT, showing a linear structure crossing the upper wall of the gastric antrum. This object wasn't visible endoscopically. The patient was discharged asymptomatic after conservative management. Six months later she reported recurrent epigastric pain. While endoscopy only revealed a small congestive area with an erosion at the antrum, the foreign body was located at the same site by CT. A gastric ESD was performed and enabled successful identification and removal of a fish bone embedded in the gastric wall.

## OP125 ENDOSCOPIC SUBMUCOSAL DISSECTION: RECURRENCE AMONG R0 RESECTIONS... HOW TO EXPLAIN?

**Authors** Rodríguez-Carrasco M<sup>1</sup>, Libânio D<sup>1,2</sup>, Pimentel-Nunes P<sup>1,2,3</sup>, Afonso LP<sup>4</sup>, Monterio P<sup>4</sup>, Dinis-Ribeiro M<sup>1,2</sup>

**Institute 1** Portuguese Oncology Institute of Porto, Gastroenterology Department, Porto, Portugal; **2** Faculty of Medicine, University of Porto, MEDCIDS - Department of Community Medicine, Health Information and Decision, Porto, Portugal; **3** Faculty of Medicine, University of Porto, Department of Surgery and Physiology, Porto, Portugal; **4** Portuguese Oncology Institute of Porto, Pathology Department, Porto, Portugal

DOI 10.1055/s-0041-1724384

**Citation:** Rodríguez-Carrasco M, Libânio D, Pimentel-Nunes P et al. OP125 ENDOSCOPIC SUBMUCOSAL DISSECTION: RECURRENCE AMONG R0 RESECTIONS... HOW TO EXPLAIN?. *Endoscopy* 2021; 53: S52.

**Aims** Endoscopic submucosal dissection (ESD) is a well-established procedure for the treatment of early gastric cancer in Eastern countries. However, this technique has not been yet widely implemented in western centres due to its higher risk of complications and worse outcomes compared to expert-Eastern centres. We aimed to assess safety, oncological outcomes of ESD, and risk factors for local recurrence.

**Methods** Data from gastric ESD of epithelial neoplastic lesions performed in our centre between January/2005-May/2020 was retrospectively analysed.

**Results** 632 gastric ESD were performed in 528 patients (57% men, mean age 68 years). Fifty-two percent of the lesions had distal location, 69% with ≤ 20 mm in size, and 46% 0-II type with depressed component. En-bloc resection was achieved in 613 procedures (97%), R0 was obtained in 587 (92%). Curative criteria were met in 509 resections (80.5%). Six percent of patients experienced bleeding (0.3% intraprocedural) and 1.4% perforation (0.8% intraprocedural and 0.6% delayed). The majority of complications were endoscopically managed but 2 patients (0.3%) had fatal delayed adverse event resulted in death. Local recurrence was detected in 17 cases (2.7%), 65% (n = 11) among those considered R0 resection (27.3% low-grade dysplasia, 9.1% high-grade dysplasia, 63.6% intramucosal well-differentiated adenocarcinoma). Piecemeal resection and R1/Rx resection were the only factors significantly associated with the occurrence of recurrence in the univariate analysis (p=0.06 and p<0.01 respectively).

**Conclusions** Gastric ESD is an effective and safe procedure for the treatment of epithelial neoplastic lesions. More studies are necessary to identify possible risk factors for local-recurrence, particularly in cases with previous R0 resections.

## OP126V WIDE-FIELD ENDOSCOPIC SUBMUCOSAL DISSECTION FOR WHOLE-ANTRAL AND WHOLE-INCISURA GASTRIC MULTIFOCAL DYSPLASIA

**Authors** Mavrogenis G<sup>1</sup>, Bazerbachi F<sup>2</sup>, Tsevgas I<sup>1</sup>, Zachariadis D<sup>1</sup>

**Institute** 1 Mediterraneo Hospital, Gastroenterology, Athens, Greece; 2 Massachusetts General Hospital, Gastroenterology, Boston, United States

**DOI** 10.1055/s-0041-1724385

**Citation:** Mavrogenis G, Bazerbachi F, Tsevgas I et al. OP126V WIDE-FIELD ENDOSCOPIC SUBMUCOSAL DISSECTION FOR WHOLE-ANTRAL AND WHOLE-INCISURA GASTRIC MULTIFOCAL DYSPLASIA. *Endoscopy* 2021; 53: S53.  
Gastric endoscopic submucosal dissection (ESD) is applied for early gastric cancer (< 3 cm) or isolated visible lesions with dysplasia. In this video-report, we present two cases of whole-antral and whole-incisura ESD application for diffuse enteric metaplasia with multifocal dysplasia. Despite the necessity for technical expertise, this technique can be facilitated by the application of ancillary techniques, such as dynamic multifocal traction and countertraction, as previously described by our team. En-bloc resection offers obvious advantages in terms of decreasing recurrence risk, and obviating repeat interventions.

Friday, 26 March 2021

15:00 – 15:45

Colonic lesions: Improve your detection!

Room 6

## OP128 DOES ENDORINGS IMPROVE THE ADENOMA DETECTION RATE AT COLONOSCOPY? A META-ANALYSIS OF DATA FROM INDIVIDUAL PATIENTS IN RANDOMIZED CONTROLLED TRIALS

**Authors** Frazzoni L<sup>1</sup>, Thayalasekaran S<sup>2</sup>, Hassan C<sup>3</sup>, Rex DK<sup>4</sup>, Siersema PD<sup>5</sup>, Fuccio L<sup>1</sup>, Bhandari P<sup>2</sup>

**Institute** 1 University of Bologna, Department of Medical and Surgical Sciences, Bologna, Italy; 2 Queen Alexandra Hospital, Endoscopy Unit, Portsmouth, United Kingdom; 3 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 4 Indiana University School of Medicine, Indianapolis, United States; 5 Radboud University Medical Center, Department of Gastroenterology and Hepatology, Nijmegen, Netherlands

**DOI** 10.1055/s-0041-1724386

**Citation:** Frazzoni L, Thayalasekaran S, Hassan C et al. OP128 DOES ENDORINGS IMPROVE THE ADENOMA DETECTION RATE AT COLONOSCOPY? A META-ANALYSIS OF DATA FROM INDIVIDUAL PATIENTS IN RANDOMIZED CONTROLLED TRIALS. *Endoscopy* 2021; 53: S53.

**Aims** Data on the impact of the EndoRings device on adenoma detection at colonoscopy is conflicting. The aim of this meta-analysis was to analyze individual patient based data from all the published trials to assess whether EndoRings improves the detection of colorectal adenomas.

**Methods** We searched MEDLINE/PubMed, Scopus and Scholar databases through May 2020 for randomized controlled trials that assessed detection of colorectal polyps by EndoRings vs. standard colonoscopy. We included studies whose authors provided data on individual patients. The primary outcome was adenoma detection rate (ADR). Patients with inadequate colon cleansing were excluded. A two-stage random-effect meta-analysis was applied to obtain pooled estimates as odds ratio (OR) and mean difference (MD) along with 95% confidence interval (CI).

**Results** 5 studies published up to 2020, comprising 2,371 patients and 3,023 detected adenomas were included for quantitative synthesis. The ADR was slightly higher for EndoRings™ arm vs. standard colonoscopy (637/1,188, 53.6% vs. 581/1,183, 49.1%; OR 1.21, CI 1.01-1.44). No significant difference was found when examining advanced ADR (297/1,188, 25% vs. 284/1,183, 24%; OR 1.08, CI 0.84-1.38), adenomas per colonoscopy (1,562/1,188 vs. 1,461/1,183; MD 0.11, CI -0.27 to 0.49), advanced adenomas per colonoscopy (194/1,188 vs. 225/1,183; MD -0.01, CI -0.12 to 0.10), right colon ADR (450/1,188, 37.9% vs.

414/1,183, 35%; OR 1.17, CI 0.93-1.49), right colon advanced ADR (63/1,188, 5.3% vs. 72/1,183, 6.1%; OR 0.91, CI 0.57-1.45), adenomas per colonoscopy in the right colon (808/1,188 vs. 719/1,183; MD 0.11, CI -0.12 to 0.33) and advanced adenomas per colonoscopy in the right colon (78/1,188 vs. 97/1,183; MD -0.01, CI -0.07 to 0.07).

**Conclusions** EndoRings marginally improves the detection of adenomas during colonoscopy, but not that of advanced adenomas nor other colonoscopy quality parameters. The clinical relevance of this add-on device is uncertain.

## OP129 IRRIGATING ACETIC ACID SOLUTION DURING COLONOSCOPY FOR THE DETECTION OF SESSILE SERRATED NEOPLASIA: A RANDOMIZED CONTROLLED TRIAL

**Authors** Tribonias G<sup>1</sup>, Theodoropoulou A<sup>2</sup>, Stylianos K<sup>3</sup>, Giotis I<sup>1</sup>, Mpitouli A<sup>2</sup>, Moschovis D<sup>1</sup>, Komeda Y<sup>4</sup>, Manola ME<sup>1</sup>, Paspatis G<sup>2</sup>, Tzouvala M<sup>1</sup>

**Institute** 1 General Hospital of Nikaia-Piraeus “Agios Panteleimon”, Gastroenterology, Athens, Greece; 2 Venizeleion - Pananeio General Hospital, Gastroenterology, Heraklion, Greece; 3 University of Crete, Medical School, Nephrology, Heraklion, Greece; 4 Kindai University Hospital, Gastroenterology, Osaka, Japan

**DOI** 10.1055/s-0041-1724387

**Citation:** Tribonias G, Theodoropoulou A, Stylianos K et al. OP129 IRRIGATING ACETIC ACID SOLUTION DURING COLONOSCOPY FOR THE DETECTION OF SESSILE SERRATED NEOPLASIA: A RANDOMIZED CONTROLLED TRIAL. *Endoscopy* 2021; 53: S53.

**Aims** Misdiagnosed sessile serrated lesions (SSLs) are important precursors for interval colorectal cancers. We investigated the usage of acetic acid (AA) solution for improving the detection of SSLs in the right colon in a randomized controlled trial.

**Methods** A tandem observation of the right colon was performed in 412 consecutive patients. A first inspection was performed under white light high-definition endoscopy. In the AA group, a low concentration vinegar solution (AA: 0.005%) was irrigated by a water pump in the right colon and it was compared with a plain solution of normal saline (NS) in the diagnostic yield of SSLs during the second inspection. Secondary outcomes in overall polyp detection were measured.

**Results** Qualitative comparisons showed significant differences in the detection rates of all polyps except adenomas, with remarkable improvement in the demonstration of advanced (>20mm), SSLs and hyperplastic polyps during the second inspection of the right colon using the AA solution. Significant improvement was also noted in the AA group, as far as the mean number of polyps/patient detected, not only in SSLs (AA group: 0.14 vs NS group: 0.01,  $P < 0.001$ ), but also in all histological types and all size-categories in the right colon. Small ( $\leq 9$  mm) polyps were detected in a higher rate in the sigmoid colon expanding the effect of the method in the rest of the colon.

**Conclusions** AA assisted colonoscopy led to a significant increase in SSLs detection rate in the right colon in a safe, quick and effective manner.

## OP130 ENDOCUFF VISION IMPROVES ADR IN LOW DETECTORS: RESULTS OF THE “ITAVISION” RANDOMIZED CONTROLLED TRIAL

**Authors** Antonelli G<sup>1,2</sup>, Zorzi M<sup>3</sup>, Senore C<sup>4</sup>, Hassan C<sup>1</sup>

**Institute** 1 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 2 Sapienza University of Rome, Department of Translational and Precision Medicine, Rome, Italy; 3 Azienda Zero, Veneto Tumor Registry, Padova, Italy; 4 University Hospital Città della Salute e della Scienza, Epidemiology and Screening Unit – CPO, Torino, Italy

DOI 10.1055/s-0041-1724388

**Citation:** Antonelli G, Zorzi M, Senore C et al. OP130 ENDOCUFF VISION IMPROVES ADR IN LOW DETECTORS: RESULTS OF THE "ITAVISION" RANDOMIZED CONTROLLED TRIAL. *Endoscopy* 2021; 53: S53.

**Aims** Endocuff Vision (EV, Arc Medical Design Ltd., Leeds, England) has shown to increase mucosal exposure, and consequently adenoma detection rate (ADR), during colonoscopy, but its role in positive Faecal Immunochemical Test (FIT+) subjects within an organised colorectal cancer population-based screening program is uncertain. This nationwide multicentre study aims to assess possible benefits and harms of implementing EV in a FIT-based screening program.

**Methods** Patients undergoing colonoscopy after a FIT+, were randomised 1:1 between standard colonoscopy with EV and control, stratified by gender, age, and screening history. Primary outcome was ADR, stratified by patient gender, age, and by endoscopists' ADR. Secondary outcomes were advanced ADR (AADR), adenoma per colonoscopy (APC), polyps per colonoscopy, withdrawal time (WT), adverse events (AE). All outcomes were adjusted at multivariate analysis.

**Results** Overall, 1,864 patients in 13 centers (males: 53.7%) were randomised, 908 in the EV arm and 905 in the control. No patients' demographic or procedural characteristics differed among the two groups. ADR was significantly higher in the EV arm (47.8% vs 40.8%; RR 1.17, 95%CI 1.06-1.30; p=0.002) with no differences among groups regarding size or morphology. When stratifying for endoscopists' ADR, only low detectors (ADR< 33.3%) showed a significant ADR increase (EV = 41.1% vs control = 26%; ADR difference +15.1%; 95%CI 7.5-22.7; p<0.001). AADR (24.8% vs. 20.5%, RR 1.21; 95%CI 1.02-1.43; p=0.03) and APC (0.94 vs. 0.77, p=0.001) were significantly increased in the EV group. WT and AE were similar among the two groups.

**Conclusions** EV increased ADR in a FIT-based, organised CRC-screening program, supporting a complete exploration of colonic mucosa. Its utility was highest among endoscopists with a low ADR.

## OP131 COMBINED FORWARD AND RETROFLEXION WITHDRAWAL DURING COLONOSCOPY USING A SECOND-GENERATION SHORT-TURN RADIUS COLONOSCOPE

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Cifuentes C<sup>1</sup>, Del Valle R<sup>1</sup>, Alvarado H<sup>1</sup>, Armas D<sup>1</sup>, Lopez AC<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute** 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

DOI 10.1055/s-0041-1724389

**Citation:** Robles-Medranda C, Oleas R, Alcivar-Vasquez J et al. OP131 COMBINED FORWARD AND RETROFLEXION WITHDRAWAL DURING COLONOSCOPY USING A SECOND-GENERATION SHORT-TURN RADIUS COLONOSCOPE. *Endoscopy* 2021; 53: S54.

**Aims** We aimed to evaluate the impact of combined forward and retroflexion withdrawal using a second-generation short-turn radius colonoscope during colonoscopy.

**Methods** A non-randomized, single-center prospective trial. Patients were submitted first to a standard high-definition screening colonoscopy. Then, a second procedure on the same patient combining forward and retroflexion was performed by a different operator. Lesions detected on the second procedure were considered as originally missed during standard colonoscopy. We calculated the polyp detection rate and the adenoma detection rate of both standard and combined colonoscopy techniques. Statistical analysis was performed on R.4.0.3.

**Results** A total of 203 patients were included for analysis. The median age was 57 years, 66% were female. The reason for colonoscopy was diagnostic on 81.3%, screening on 15.8%, and 3.0% for surveillance. Regarding size of the lesions, 74.5% of lesions detected on forward-viewing were <5 mm. Whereas, on retroflexion 65.3% sized <5mm and 34.7% between 5-10 mm. The polyp

detection rate for forward-viewing colonoscopy was 39.90. The polyp detection rate for combined forward and retroflexion colonoscopy was 54.18. The adenoma detection rate for forward-viewing colonoscopy was 21.18. The adenoma detection rate for combined forward and retroflexion colonoscopy was 32.01.

**Conclusions** We found that combined forward and retroflexion withdrawal technique during colonoscopy increases the polyp and adenoma detection rates in comparison to standard colonoscopy. Larger, multi-center trials are necessary to validate these data.

## OP132 PREVALENCE OF MISSED LESIONS IN PATIENTS WITH INADEQUATE BOWEL PREPARATION THROUGH A VERY EARLY REPEAT COLONOSCOPY

**Authors** Pantaleón Sánchez MA<sup>1</sup>, Gimeno-García AZ<sup>2</sup>, Bernad Cabredo B<sup>3</sup>, García-Rodríguez A<sup>4</sup>, Frago Larramona S<sup>5</sup>, Nogales O<sup>6</sup>, Díez Redondo P<sup>7</sup>, Puig del Castillo I<sup>8</sup>, Romero Mascarell C<sup>9</sup>, Caballero N<sup>10</sup>, Romero Sánchez-Miguel I<sup>11</sup>, Pérez Berbegal R<sup>1</sup>, Hernández Negrín D<sup>2</sup>, Bujedo Sadornill G<sup>3</sup>, Pérez Oltra A<sup>4</sup>, Casals Urquiza G<sup>1</sup>, Amorós Martínez J<sup>12</sup>, Seoane Urgorri A<sup>1</sup>, Ibañez Zafón IA<sup>1</sup>, Alvarez-Gonzalez MA<sup>1,13,14</sup>

**Institute** 1 Hospital del Mar, Digestive Diseases, Barcelona, Spain; 2 Hospital Universitario de Canarias, Digestive Diseases, La Laguna, Spain; 3 Hospital Universitario de Burgos, Digestive Diseases, Burgos, Spain; 4 Hospital de Viladecans, Digestive Diseases, Barcelona, Spain; 5 Hospital Santa Barbara, Digestive Diseases, Soria, Spain; 6 Hospital Gregorio Marañón, Digestive Diseases, Madrid, Spain; 7 Hospital Rio Hortega, Digestive Diseases, Barcelona, Spain; 8 Althaia, Xarxa Asistencial Universitaria de Manresa, Digestive Diseases, Manresa, Spain; 9 Consorci Sanitari de Terrassa, Digestive Diseases, Terrassa, Spain; 10 Hospital Germans Trias i Pujol, Digestive Diseases, Badalona, Spain; 11 Hospital 12 de octubre, Digestive Diseases, Madrid, Spain; 12 Open University of Catalonia, Barcelona, Spain; 13 Universitat Autònoma de Barcelona, Medicine, Barcelona, Spain; 14 Hospital del Mar Research Institute, IMIM, Barcelona, Spain

DOI 10.1055/s-0041-1724390

**Citation:** Pantaleón Sánchez MA, Gimeno-García AZ, Bernad Cabredo B et al. OP132 PREVALENCE OF MISSED LESIONS IN PATIENTS WITH INADEQUATE BOWEL PREPARATION THROUGH A VERY EARLY REPEAT COLONOSCOPY. *Endoscopy* 2021; 53: S54.

**Aims** We aimed to determine the rate of missed lesions on patients with inadequate bowel preparation, through a very early repeat colonoscopy with adequate bowel preparation.

**Methods** Post-hoc analysis using data collected from a prospective multicenter randomized clinical trial (RTC) including patients with inadequate bowel preparation and then repeat colonoscopy within 6 months. Inadequate bowel preparation was defined as a Boston Bowel Preparation Scale (BBPS) score <2 in any segment. We included patients with any indication for colonoscopy. The adenoma detection rate (ADR), advanced ADR (AADR), serrated polyp detection rate (SPDR), were calculated for the index and repeat colonoscopies.

**Results** Of the 651 patients with inadequate bowel preparation from the original RTC, 66 patients (10.1%) were excluded due to partial colectomy. Of the 585 whom were analyzed, 530 (90.6%) underwent repeat colonoscopy within 6 months from baseline colonoscopy and 413 (70.6%) achieved an adequate bowel preparation on the repeat colonoscopy. Mean of total BBPS score was 2.3 (SD 1.8) and 7 (SD 1.2) on baseline and repeat colonoscopy, respectively. On repeat colonoscopy, the ADR was 45.3% (95% CI 40.5% to 50.1%), the AADR was 10.9% (95% CI 7.9% to 13.9%) and the SPDR was 14.3% (95% CI 10.9% to 17.7%). The per-adenoma miss rate was 68.9% (95%CI 65.2% to 72.6%), the per-advanced adenoma miss rate was 60.64% (95%CI 50.8% to 70.5%), and the per-serrated miss rate was 83.8% (95% CI 77.5% to 90.2%).

**Conclusions** Patients with inadequate bowel preparation present a high rate of adenoma, advanced adenomas and serrated lesions on the repeat colonoscopy. 6 months might be a reasonable interval for repeating the examination.

### OP133 ENDOSCOPIC DRAINAGE- PLASTIC VERSUS METAL STENT IN PALLIATIVE TREATMENT OF MALIGNANT DISTAL BILIARY OBSTRUCTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Cury Vieira Scatimburgo MV<sup>1</sup>, Braga Ribeiro I<sup>1</sup>, Massari Takamatsu Sagae V<sup>1</sup>, de Moura DTH<sup>1</sup>, Salomão Hirsch B<sup>1</sup>, Bond Boghossian M<sup>1</sup>, Marques Bernardo W<sup>1</sup>, Eduardo Lera dos Santos M<sup>1</sup>, Antônio Prince Franzini T<sup>1</sup>, Guimarães Hourneux de Moura E<sup>1</sup>  
**Institute** 1 Hospital das Clínicas da Faculdade de Medicina da USP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil  
**DOI** 10.1055/s-0041-1724391

**Citation:** Cury Vieira Scatimburgo MV, Braga Ribeiro I, Massari Takamatsu Sagae V et al. OP133 ENDOSCOPIC DRAINAGE- PLASTIC VERSUS METAL STENT IN PALLIATIVE TREATMENT OF MALIGNANT DISTAL BILIARY OBSTRUCTION: A SYSTEMATIC REVIEW AND META-ANALYSIS *Endoscopy* 2021; 53: S55.

**Aims** Bile duct tumors are not curative in most cases. Endoscopic biliary drainage is considered the gold standard for palliative treatment of unresectable and/or inoperable distal malignant distal biliary obstruction (MDBO). This meta-analysis aims to compare plastic stent (PS) versus metal stent (SEMS) in the palliative treatment of MDBO and evaluate which one has the greatest benefit.

**Methods** A comprehensive literature search was made from the Medline (PubMed), Central Cochrane Library, EMBASE, LILACS and gray research, selecting only randomized clinical trials (RCTs). Assessed outcomes were: duration of patency, stent dysfunction rate, reintervention rate, clinical success, median survival and complications.

**Results** 12 RCTs with 1005 patients met the inclusion criteria. The SEMS group was divided into three subgroups, uncovered metal stent (uSEMS), partially/fully covered (pcSEMS/cSEMS) and the group in which the SEMS was not specified (SEMSns). SEMS had a lower dysfunction rate than the PS (▶ **Table 1**,) and in the analysis of the subgroups, uSEMS had no difference comparing to PS (RD=-0.08, 95%CI=-0.56;0.39, p=0.006, I<sup>2</sup>=87%) and pcSEMS/cSEMS was higher (RD=-0.21, 95%CI=-0.32; -0.1, p=0.0003, I<sup>2</sup>=20%). Regarding

reintervention, dichotomous and continuous variables were evaluated, but in both SEMS had a lower reintervention rate compared to PS (▶ **Table 1**,). Concerning duration of patency, SEMS also showed advantage than PS (▶ **Table 1**). In the three subgroups of the SEMS there was longer duration of patency (uSEMS presented RD=101.5,95%CI=38.91;164.09,I<sup>2</sup>=98%, pcSEMS/cSEMS presented RD=152.25,95%CI= 37.42;267.07,p<0.00001,I<sup>2</sup>=98% and SEMSns presented RD=105.81,95%CI=33.01;178.60,p<0.00001,I<sup>2</sup>=95%). In the mean survival analysis, there was no difference between SEMS and PS (MD=0.63, 95%CI=-18.07;19.33), however, in the analysis of the subgroups, pcSEMS/cSEMS favored over the PS (MD=-17.45,95%CI=-32.68;-2.21,p=0.02,I<sup>2</sup>=5%). Regarding complications and clinical success there was no difference.

**Conclusions** SEMS has a longer duration of patency, lower reintervention rate and lower dysfunction rate compared to PS. Concerning clinical success, survival and clinical complications, there were no difference.

### OP134 A NEW TOOL FOR BILE DUCT TISSUE SAMPLING: EX-VIVO CLINICAL EVALUATION OF INTRADUCTAL CRYOBIOPSY FOR CHOLANGIOSCOPY

**Authors** Wirsing L<sup>1</sup>, Linzenbold W<sup>2</sup>, Enderle M<sup>2</sup>, Stahl P<sup>3</sup>, Traenkenschuh W<sup>3</sup>, Leibold T<sup>4</sup>, Albert J<sup>1</sup>, Peveling-Oberhag J<sup>1</sup>  
**Institute** 1 Robert-Bosch-Hospital, Department of Gastroenterology, Hepatology and Endocrinology, Stuttgart, Germany; 2 ERBE Elektromedizin GmbH, Tuebingen, Germany; 3 Robert-Bosch-Hospital, Institute of Pathology, Stuttgart, Germany; 4 Robert-Bosch-Hospital, Department of Surgery, Stuttgart, Germany  
**DOI** 10.1055/s-0041-1724395

**Citation:** Wirsing L, Linzenbold W, Enderle M et al. OP134 A NEW TOOL FOR BILE DUCT TISSUE SAMPLING: EX-VIVO CLINICAL EVALUATION OF INTRADUCTAL CRYOBIOPSY FOR CHOLANGIOSCOPY. *Endoscopy* 2021; 53: S55.

**Aims** Indeterminate biliary strictures (IBS) represent a major challenge in clinical diagnostics today. Diagnostic yield of radiological and endoscopic imaging is insufficient, and histopathological diagnosis based on in-vivo biopsy technique is ambiguous in many cases. The cryobiopsy technique (CB) is a new method for tissue extraction, which is already used for endobronchial biopsies in clinical routine.

The aim of this ex-vivo clinical study was to investigate feasibility and tissue quality of CB in comparison to standard biopsy forceps for the retrieval of native and pathologically altered bile duct tissue.

**Methods** We included 14 patients with suspected tumor obstruction of the common bile duct who underwent pancreaticoduodenectomy. Tissue samples were taken from either visibly altered areas or native bile duct. A new prototype of a cryoprobe as well as standard forceps (cholangioscopic forceps CF or gastric biopsy forceps GBF) were used for comparison. All biopsy specimens were assessed by two pathologists blinded to the biopsy method. Data was collected and analyzed for general feasibility, specimen area, and histological assessability as well as representativity of tissue.

**Results** CB success rate was superior to CF (p=0.0022). There was no statistical difference between CB and GBF concerning feasibility (p=0.2096). Significantly larger tissue samples were obtained with CB compared to GBF (p=0.005). CB was superior in histological assessment quality compared to pooled forceps (p=0.0302) and concerning representativity (p=0.0225).

**Conclusions** CB in the bile duct is feasible and the quality of the obtained tissue is high. Larger tissue amounts and more representative samples can be retrieved than with a standard biopsy forceps. With these promising results, an in-vivo study should be initiated.

▶ **Tab. 1** Synthesis of results for each outcome

OUTCOMES	OVERALL ANALYSIS	OUTCOMES	OVERALL ANALYSIS
Stent dysfunction	RD= -0.24, 95% CI= -0.33; -0.15, p<0.00001, I <sup>2</sup> = 58 %	Duration of patency	MD= 125.77, 95% CI= 77.5; 174.01, p<0.00001, I <sup>2</sup> = 97 %
Reinterventions (dichotomous)	RD= -0.34, 95% CI= -0.46; -0.22, p<0.00001, I <sup>2</sup> = 57 %	Complications	RD= -0.03, 95% CI= -0.10; 0.03, p= 0.26
Reinterventions (continuous)	MD= -0.67, 95% CI= -0.85; -0.50, p<0.00001, I <sup>2</sup> = 0 %	Mean survival	MD= 0.63, 95% CI= -18.07;19.33, p= 0.95, I <sup>2</sup> = 59 %
Clinical success	RD= 0.03, 95% CI= -0.01; 0.07, p= 0.19, I <sup>2</sup> = 0 %		



## OP135 ANGLED TIP ERCP GUIDEWIRES APPEAR TO BE ADVANTAGEOUS FOR INTRAHEPATIC STENOSIS IN COMPARISON TO STRAIGHT TIP GUIDEWIRES: RESULTS FROM A RANDOMIZED MULTICENTRE STUDY

**Authors** Hausmann<sup>1,2</sup>, Lefa<sup>3</sup>, Filmann<sup>4</sup>, Eickhoff<sup>5</sup>, Tantau<sup>6</sup>, Albert<sup>3</sup>

**Institute** 1 Goethe-University Hospital Frankfurt, Department of Internal Medicine 1, Frankfurt, Germany; 2 St. Vinzenz-Hospital Hanau, Department of Gastroenterology/Internal Medicine, Hanau, Germany; 3 Robert Bosch-Hospital Stuttgart, Department of Gastroenterology, Stuttgart, Germany; 4 Goethe-University Hospital Frankfurt, Institute of Biostatistics and Mathematical Modeling, Frankfurt, Germany; 5 Klinikum Hanau, Department of Gastroenterology, Hanau, Germany; 6 Regional Institute of Gastroenterology (IRGH), Cluj-Napoca, Romania  
DOI 10.1055/s-0041-1724392

**Citation:** Garcés-Duran R, Galdin-Ferreira M, Delgado-Guillena P et al. OP135 ANGLED TIP ERCP GUIDEWIRES APPEAR TO BE ADVANTAGEOUS FOR INTRAHEPATIC STENOSIS IN COMPARISON TO STRAIGHT TIP GUIDEWIRES: RESULTS FROM A RANDOMIZED MULTICENTRE STUDY. *Endoscopy* 2021; 53: S56.

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is the mainstay for treating many bilio-pancreatic diseases and highly effective guidewires are essential for treatment success. However, performance of different types of guidewires remains ambiguous in most indications.

**Methods** We conducted a randomized, multicentre, open label study involving four European endoscopic centres. Success rate and duration of ERCP were evaluated in terms of the respective guidewire system. Two wire types were compared, each with either a straight tip or an angled tip configuration, thereby resulting in four randomization groups: Type 1 wire, providing a hydrophilic tip with normal flexibility, and type 2, with enhanced tip flexibility. Patients were stratified by indication (i.e., stenosis of the intra- or extrahepatic bile ducts, bile duct stones, or interventions involving the pancreas). Cross-over of groups was conducted if passage of the stenosis or stone was not achieved with the initially allocated wire.

**Results** Four hundred fifty-four patients were included. In 363 procedures (80%), the use of the initially allocated wire resulted in treatment success. Success rate was higher for using wires with an angled tip in treating intrahepatic stenoses ( $p = 0.009$ ). No significant differences were observed in other indications. Furthermore, success was equal in applying wire type 1 vs. type 2. No differences were observed between the four groups in terms of procedure time.

**Conclusions** ERCP guidewires with an angled tip were more frequently successful in treating intrahepatic stenosis when compared to straight tipped wires. Guidewires with normal vs. enhanced tip flexibility showed equal success rates for the respective indications.

## OP136 ENDOSCOPIC BILATERAL DRAINAGE TECHNIQUES OF MALIGNANT HILAR BILIARY OBSTRUCTION: STENT-IN-STENT OR SIDE-BY-SIDE? A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** de Souza GMV<sup>1</sup>, Ribeiro IB<sup>1</sup>, Funari MP<sup>1</sup>, de Moura DTH<sup>1</sup>, Scatimburgo MVCV<sup>1</sup>, de Freitas Júnior JR<sup>1</sup>, Baracat R<sup>1</sup>, de Moura ETH<sup>1</sup>, Bernardo WM<sup>1</sup>, de Moura EGH<sup>1</sup>

**Institute** 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastrointestinal Endoscopy Unit, São Paulo, Brazil  
DOI 10.1055/s-0041-1724393

**Citation:** de Souza GMV, Ribeiro IB, Funari MP et al. OP136 ENDOSCOPIC BILATERAL DRAINAGE TECHNIQUES OF MALIGNANT HILAR BILIARY OBSTRUCTION: STENT-IN-STENT OR SIDE-BY-SIDE? A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S56.

**Aims** Malignant biliary tract tumors are unresectable for up to 80% of cases. Biliary drainage is often required when dealing with a malignant hilar biliary obstruction (MHBO). There are two types of drainage: stent-in-stent (SIS) and side-by-side (SBS), which differ from each other and have distinct advantages. The aim of this meta-analysis was to compare both techniques regarding efficacy and safety.

**Methods** This study was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-analyses) recommendations. We searched through MEDLINE, EMBASE, Cochrane CENTRAL, and Lilacs/Bireme databases with no restrictions regarding the year of publication or language. Evaluated outcomes concern technical success, bilirubin level decrease, early and late adverse events, stent patency, reintervention and procedure-related mortality. Quality of evidence was assessed for each outcome according to the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) software.

**Results** Four studies were included with a total number of 186 patients — 87 in the SIS group and 99 in the SBS group. There were no significant differences between groups concerning the evaluated outcomes (► table), except for bilirubin level decrease, which benefited SIS over SBS (RD 0.13; 95% CI [0.02 to 0.23]  $I^2 = 0\%$ ,  $p = 0.02$ ).

**Conclusions** Stent-in-stent and side-by-side perform equivalently in terms of bilateral biliary drainage in malignant hilar biliary obstruction. Then, the best approach should be to consider both local expertise and resource availability.

► Tab. 1

Outcomes	Overall analysis	Outcomes	Overall analysis
Technical success	RD= 0.07; 95% CI [-0.01 to 0.15], $I^2 = 0\%$ , $p = 0,10$	Stent patency	MD= 3,18; 95% CI [-40.98 to 47.35], $I^2 = 15\%$ , $p = 0,89$
Bilirubin level decrease	RD 0.13; 95% CI [0.02 to 0.23] $I^2 = 0\%$ , $p = 0,02$	Reintervention	RD= 0.05; 95% CI [-0.15 to 0.26], $I^2 = 0\%$ , $p = 0,60$
Early adverse events	RD= -0.00; 95% CI [-0.10 to 0.10], $I^2 = 0\%$ , $p = 0,97$	Procedure-related mortality	RD= 0.00; 95% CI [-0.05 to 0.05], $I^2 = 0\%$ , $p = 1,00$
Late adverse events	RD= -0.05; 95% CI [-0.16 to 0.07], $I^2 = 23\%$ , $p = 0,42$		

## OP137 EFFICACY OF BILE ASPIRATION PLUS BRUSHING TO DIAGNOSE MALIGNANT BILIARY STRICTURES DURING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: A SINGLE TERTIARY CENTER EXPERIENCE

**Authors** Amalou K<sup>1</sup>, Belghanem F<sup>1</sup>, Bouseloub A<sup>1</sup>, TIBOUK A<sup>2</sup>

**Institute** 1 Algiers University of Medicine, Department of Gastroenterology Military Central Hospital, Algiers, Algeria; 2 Algiers University of Medicine, Pathology, Military Central Hospital, Algiers, Algeria  
DOI 10.1055/s-0041-1724394

**Citation:** Amalou K, Belghanem F, Bouseloub A et al. OP137 EFFICACY OF BILE ASPIRATION PLUS BRUSHING TO DIAGNOSE MALIGNANT BILIARY STRICTURES

DURING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: A SINGLE TERTIARY CENTER EXPERIENCE. *Endoscopy* 2021; 53: S56.

**Aims** Our study aimed to evaluate the diagnostic performance of bile aspiration associated with biliary brushing during ERCP to diagnose a malignant stricture, compared to brushing alone.

**Methods** In this prospective study, all patients undergoing ERCP to treat a malignant biliary stricture were included. After a biliary sphincterotomy, 3mL to 10mL of bile was aspirated into the brush catheter and collected before and after brushing (to yield three samples). Brushing was performed as commonly recommended.

**Results** Eighty seven patients (48 males, 39 females) were included; mean age 72 ±12.4 years. A final diagnosis of malignant stricture was established in 78 patients, including 63 cholangiocarcinomas. Specificity (Sp) and positive predictive values were 100% for all samples. The diagnostic performance of the three-sample combination of bile aspiration+brushing+bile aspiration was significantly greater than brushing alone (P= 0.003): sensitivity (Se)=81.1% vs. Se=56.9%. The three-sample combination gave a negative predictive value of 85.3%.

**Conclusions** Performing bile aspiration before and after brushing during ERCP increased significantly the ability to diagnose malignant bile-duct strictures, especially cholangiocarcinoma.

Friday, 26 March 2021

16:00 – 16:45

AI in the colon: Innovations and new developments Room 5

## OP138 DEEP NEURAL NETWORK FOR CECUM ACHIEVEMENT CONFIRMATION DURING SCREENING COLONOSCOPY

**Authors** Kashin S<sup>1</sup>, Zavyalov D<sup>1</sup>, Kuvaev R<sup>1,2</sup>, Khryashchev V<sup>3</sup>, Lebedev A<sup>3</sup>, Guseinova S<sup>4</sup>, Hassan C<sup>5</sup>

**Institute** 1 Yaroslavl Regional Cancer Hospital, Endoscopy, Yaroslavl, Russian Federation; 2 Pirogov Russian National Research Medical University, Gastroenterology, Moscow, Russian Federation; 3 P.G. Demidov Yaroslavl State University, Yaroslavl, Russian Federation; 4 Yaroslavl State Medical University, Yaroslavl, Russian Federation; 5 Nuovo Regina Margherita Hospital, Rome, Italy  
**DOI** 10.1055/s-0041-1724396

**Citation:** Kashin S, Zavyalov D, Kuvaev R et al. OP138 DEEP NEURAL NETWORK FOR CECUM ACHIEVEMENT CONFIRMATION DURING SCREENING COLONOSCOPY. *Endoscopy* 2021; 53: S57.

**Aims** According to ESGE guidelines, reaching the cecum is a basic aspect of the quality of screening colonoscopy. An artificial intelligence-based approach can be useful in real-time confirmation of cecal achievement and in monitoring the quality of colonoscopy in an endoscopy unit. We checked the ability of computerized image analysis using deep neural network to confirm reaching the cecum in screening colonoscopy.

**Methods** Digital database was created, it contained 2671 hand-labeled images from screening colonoscopies collected from more than 250 patients. Among them 2294 is a negative class (without the appendiceal orifice), 377 positive (containing the appendiceal orifice). We randomly divided the database in the ratio of 80% to 20% into a training and validation set. Thus, the training base consists of 2136 images, of which 311 are positive and 1825 are negative. The validation set consists of 535 images, including 66 positive images and 469 negative ones.

**Results** The following results were obtained on a test dataset in the process of the study - the best result on the validation set was AUC = 0.97, and the best value is F1-score = 0.85, when a threshold is th = 0.608. Then the trained model was checked on a test set the area under the curve is equal to AUC = 0.95, F1-score equal 0.9 with a threshold th = 0.462. The average analysis time of one image is 29 ms, which allows to process up to 40 images per second.

**Conclusions** We have developed and clinically tested an algorithm based on a deep neural network using object classification on endoscopic images to

confirm the achievement of the cecum with a high result. These results can be integrated in a quality control system and will lead to a decrease in the number of subjective medical mistakes during screening colonoscopy.

## OP139 ARTIFICIAL INTELLIGENCE(AI) IN ENDOSCOPY-DEEP LEARNING FOR SCORING OF ULCERATIVE COLITIS DISEASE ACTIVITY UNDER MULTIPLE SCORING SYSTEMS

**Authors** Byrne MF<sup>1</sup>, East JE<sup>2</sup>, Iacucci M<sup>3</sup>, Panaccione R<sup>4</sup>, Kalapala R<sup>5</sup>, Duvvur NR<sup>5</sup>, Rughwani H<sup>5</sup>, Singh AP<sup>5</sup>, Henkel ML<sup>6</sup>, Parsa N<sup>7</sup>, Canaran L<sup>8</sup>, Laage G<sup>8</sup>, St-Denis L<sup>8</sup>, Nikfal S<sup>8</sup>, Asselin J<sup>8</sup>, Monsurate R<sup>9</sup>, Cremonese ED<sup>8</sup>, Soudan F<sup>8</sup>, Travis SP<sup>10</sup>

**Institute** 1 Vancouver General Hospital, Gastroenterology, Vancouver, Canada; 2 John Radcliffe Hospital, Gastroenterology, Oxford, United Kingdom; 3 Institute of Translational of Medicine Immunology & Immunotherapy, Gastroenterology, Birmingham, United Kingdom; 4 University of Calgary, Gastroenterology, Calgary, Canada; 5 Asian Institute of Gastroenterology (AIG Hospitals), Telangana, India; 6 University of Buenos Aires, Gastroenterology, Buenos Aires, Argentina; 7 University of Missouri, Gastroenterology, Columbia, United States; 8 IVADO Labs, Montreal, Canada; 9 University of British Columbia, Vancouver, Canada; 10 John Radcliffe Hospital, Oxford University, Translational Gastroenterology Unit, Experimental Medicine Division, Oxford, United Kingdom  
**DOI** 10.1055/s-0041-1724397

**Citation:** Byrne MF, East JE, Iacucci M et al. OP139 ARTIFICIAL INTELLIGENCE(AI) IN ENDOSCOPY-DEEP LEARNING FOR SCORING OF ULCERATIVE COLITIS DISEASE ACTIVITY UNDER MULTIPLE SCORING SYSTEMS.

*Endoscopy* 2021; 53: S57.

**Aims** Computer vision & deep learning(DL)to assess & help with tissue characterization of disease activity in Ulcerative Colitis(UC) through Mayo Endoscopic Subscore(MES)show good results in central reading for clinical trials.UCEIS(UC Endoscopic Index of Severity) may be more reflective of disease activity and more primed for artificial intelligence(AI). We set out to create a UC detection&scoring support tool for physicians,improving precision & reducing times between video collection & completed score.

**Methods** We leveraged >85,000 frames from endoscopy cases using Olympus (190&180series)scopes at 2 sites. Experienced endoscopists and 9 labellers reviewed~6000(7%)images showing normal, disease state(Mayo,0-3 or UCEIS subscores) & non-scorable(blurry or presenting water,blood or stool) frames. Divided the total frames in 3:training (60%/51,000), testing(20%/17,000) & validation(18%/17,000). Using Convolutional Neural Network(CNN)Inception V3 for detection at the frame level,with multiple separate units and dense layers that take features detected by the CNN as inputs & provide continuous scores for 5 separate outputs representing MES, the aggregate UCEIS & its individual components Vascular Pattern, Bleeding & Ulcers(fig.1). This enables the model to have parameters common for each score&ones that are specific to each unit.

**Results** We used Mean Absolute Error(MAE)and mean Bias, showing how far from truth the model is for each frame&whether the model tends to under or over predict the score. Our model performs as predicted, distributions are relatively close to the labelled(ground truth)ones & MAE&Bias for all frames are relatively low considering the magnitude of the scoring scale (table;fig2).

**Conclusions** We propose DL approach based on labelled images to predict MES and UCEIS scores. Although the investigation was carried on a limited dataset, it has shown relevant identification for the scoring of disease activity in UC patients, well-aligned with scoring guidelines&experts' performance, demonstrating strong promise for generalization.By creating a regression output score,we can create a more precise level AI to score disease activity.We present work that builds a system for scoring disease activity at both the frame&video level, under both scoring modalities & that can accommodate other scoring systems like PiCaSSO.

## OP140 SEMI-AUTOMATED ANNOTATION TOOL OUTPERFORMS TRAINED MEDICAL STUDENTS AND IS COMPARABLE TO CLINICAL EXPERT PERFORMANCE FOR FRAME-LEVEL DETECTION OF COLORECTAL POLYPS

**Authors** Eelbode T<sup>1</sup>, Ahmad OF<sup>2</sup>, Sinonquel P<sup>3</sup>, Blakemore Kocadag T<sup>2</sup>, Narayan N<sup>2</sup>, Rana N<sup>2</sup>, Maes F<sup>1</sup>, Lovat LB<sup>2</sup>, Bisschops R<sup>3</sup>

**Institute** 1 KU Leuven, Medical Imaging Research Center, ESAT/PSI, Leuven, Belgium; 2 University College London, Wellcome/EPSCRC Centre for Interventional & Surgical Sciences (WEISS), London, United Kingdom; 3 University Hospitals Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium

**DOI** 10.1055/s-0041-1724398

**Citation:** Eelbode T, Ahmad OF, Sinonquel P et al. OP140 SEMI-AUTOMATED ANNOTATION TOOL OUTPERFORMS TRAINED MEDICAL STUDENTS AND IS COMPARABLE TO CLINICAL EXPERT PERFORMANCE FOR FRAME-LEVEL DETECTION OF COLORECTAL POLYPS. *Endoscopy* 2021; 53: S58.

**Aims** Training of deep learning systems requires an enormous amount of labeled data. This data must ideally cover the entire range of polyp appearances in real life, but also the whole possible range of image qualities and polyp locations and sizes. Expert labelling of each frame in a polyp video is, therefore, the most robust way for constructing a training set, but this is very time-consuming and currently represents a major barrier for widespread implementation of AI in endoscopy. In this study, two alternative approaches are evaluated, an innovative semi-automated labelling tool and trained medical students providing annotations.

**Methods** 20 unique polyp white light videos containing 6282 frames (14 adenomas and 6 sessile serrated lesions confirmed by histopathology, mean size 7mm, Olympus) were annotated with bounding boxes by a clinical expert. These annotations are used as the gold standard for comparison. Two cheaper annotation methods were then applied to evaluate their validity and relative performance: (1) a semi-automated labelling technique – this tool only requires 3 manually annotated video frames, from which a representation of the polyp is learned and transferred automatically to all the other frames in the video; (2) independent manual labelling of each video by three medical students – following a training module with polyp images and videos.

**Results** The mean and standard deviation of the frame-level sensitivity, positive predictive value (PPV) and adjudicated PPV (for borderline low-quality frames) over all videos are provided in table 1. The semi-automated method significantly outperforms all three students on sensitivity and annotation time (paired t-test, p-value < 0.05), while also achieving the highest value for PPV, both before and after adjudication.

**Conclusions** A semi-automated labelling tool is a faster, more efficient and valid approach for polyp detection. It outperforms three medical students, specifically trained for polyp recognition and is comparable to clinical expert performance.

► Tab. 1

	Sensitivity	PPV	Adjudicated PPV	Time (mins)
Student 1	74,38 ± 27,30	88,52 ± 30,51	89,92 ± 15,34	264
Student 2	63,08 ± 20,27	94,69 ± 22,30	95,00 ± 07,47	1208
Student 3	66,97 ± 27,37	94,77 ± 22,32	95,00 ± 12,30	234
Semi-automated	<b>94,40 ± 06,22</b>	<b>97,17 ± 05,87</b>	<b>98,97 ± 14,04</b>	<b>25</b>

## OP141 PRELIMINARY RESULTS OF ARTIFICIAL INTELLIGENT APPLICATION IN COLONOSCOPIC POLYPS DETECTION IN VIETNAM

**Authors** Dao H<sup>1,2,3</sup>, Le H<sup>2</sup>, Nguyen B<sup>3</sup>, Nguyen H<sup>3</sup>, Lam H<sup>3</sup>, Dao L<sup>4</sup>, Nguyen T<sup>5</sup>, Dinh S<sup>6</sup>, Vu H<sup>7</sup>

**Institute** 1 Hanoi Medical University, Internal Medicine Faculty, Hanoi, Vietnam; 2 Hanoi Medical University Hospital, Endoscopic Centre, Hanoi, Vietnam; 3 Institute of Gastroenterology and Hepatology, Hanoi, Vietnam; 4 Institute of Gastroenterology and Hepatology, HANOI, Vietnam; 5 Vietnam National University of Agriculture, Informatics Technology Department, Hanoi, Vietnam; 6 Hanoi University of Science and Technology, SOICT, Hanoi, Vietnam; 7 VDSSENSE Joint Stock Company, Hanoi, Vietnam  
**DOI** 10.1055/s-0041-1724399

**Citation:** Dao H, Le H, Nguyen B et al. OP141 PRELIMINARY RESULTS OF ARTIFICIAL INTELLIGENT APPLICATION IN COLONOSCOPIC POLYPS DETECTION IN VIETNAM. *Endoscopy* 2021; 53: S58.

**Aims** The data from AI applications in colorectal polyps detection in developing countries like Vietnam is still lacking. This study aims to build a deep learning model for colorectal polyps detection in colonoscopy images and validate the accuracy in testing dataset.

**Methods** The study was conducted from June 2019 to June 2020 in Institute of Gastroenterology and Hepatology and Hanoi Medical University hospital. Three datasets were collected, including a training dataset of 8186 colonoscopy images with at least one polyp and 4000 colonoscopy images without polyp; a validation dataset consisted of 1498 colonoscopy images with polyp(s) and 1000 colonoscopy images without polyps; and a testing dataset of 1321 colonoscopy images with 1549 polyps. The proposed model was built based on the U-Net architecture with an EfficientNet encoder and was trained in 150 epochs before testing on the testing dataset. The model's accuracy was then evaluated using the F1 score, the positive predictive value (PPV) index, the sensitivity (Se) and specificity (Sp) index.

**Results** The F1 scores of both the training set and the testing set were reported over 95%. The PPV, Se and Sp scores of AI model on the validation in pixels were 94.6%, 96.4% and 99.8%, respectively. The PPV, Se and Sp scores of AI model on the testing dataset were 94.4%, 96.2% and 95.4%, respectively. In term of characteristics of polyps detected in the testing dataset, 63.58% were less than 5mm in diameter, and 81.14% were categorized as Is according to Paris classification. 59 polyps missed by the AI model were under 5mm in diameter and classified as Is. 88 cases classified as false positive were areas with mucosal folds (35.6%), mucus (26.7%), foam (13.3%) or optical flares (6.7%) in the images.

**Conclusions** Application of AI in colonoscopy polyps detection is then feasible and requires further investigation in Vietnam.

## OP142 ARTIFICIAL INTELLIGENCE-ASSISTED COLONOSCOPY FOR CANCER RECOGNITION: A MULTICENTER STUDY DESIGNED TO OBTAIN REGULATORY APPROVAL

**Authors** Mori Y<sup>1</sup>, Kudo SE<sup>2</sup>, Misawa M<sup>2</sup>, Hotta K<sup>3</sup>, Ohtsuka K<sup>4</sup>, Saito S<sup>5</sup>, Ikematsu H<sup>6</sup>, Saito Y<sup>7</sup>, Matsuda T<sup>7</sup>, Takeda K<sup>2</sup>, Kudo T<sup>2</sup>, Wakamura K<sup>2</sup>, Itoh H<sup>8</sup>, Mori K<sup>8</sup>, Nemoto T<sup>2</sup>

**Institute** 1 University of Oslo/Showa University Northern Yokohama Hospital, Oslo, Norway; 2 Showa University Northern Yokohama Hospital, Yokohama, Japan; 3 Shizuoka Cancer Center, Shizuoka, Japan; 4 Tokyo Medical Dental University, Tokyo, Japan; 5 Cancer Institute Hospital, Tokyo, Japan; 6 National Cancer Center Hospital East, Kashiwa, Japan; 7 National Cancer Center Hospital, Tokyo, Japan; 8 Nagoya University, Nagoya, Japan  
**DOI** 10.1055/s-0041-1724400

**Citation:** Mori Y, Kudo SE, Misawa M et al. OP142ARTIFICIAL INTELLIGENCE-ASSISTED COLONOSCOPY FOR CANCER RECOGNITION: A MULTICENTER STUDY DESIGNED TO OBTAIN REGULATORY APPROVAL. *Endoscopy* 2021; 53: S58.

**Aims** Large adenomas are sometimes misidentified as cancers during colonoscopy and are surgically removed. To address this overtreatment, we developed an artificial intelligence (AI) tool that identified cancerous pathology *in vivo* with high specificity. We evaluated our AI tool under the supervision of a government agency to obtain regulatory approval.

**Methods** The AI tool outputted three pathological class predictions (cancer, adenoma, or non-neoplastic) for endocytoscopic images obtained at 520-fold magnification and previously trained on 68,082 images from six academic centers. A validation test was developed, employing 500 endocytoscopic images taken from various parts of randomly selected 50 large ( $\geq 20$  mm) colorectal lesions (10 images per lesion). An expert board labelled each of the 500 images with a histopathological diagnosis, which was made using endoscopic and histopathological images. The validation test was performed using the AI tool under a controlled environment. The primary outcome measure was the specificity in identifying cancer.

**Results** The validation test consisted of 30 cancers, 15 adenomas, and 5 non-neoplastic lesions. The AI tool could analyze 83.6% (418/500) of the images: 231 cancers, 152 adenomas, and 35 non-neoplastic lesions. Among the analyzable images, the AI tool identified the three pathological classes with an overall accuracy of 91.9% (384/418, 95% confidence interval [CI]: 88.8%–94.3%). Its sensitivity and specificity for differentiating cancer was 91.8% (212/231, 95% CI: 87.5%–95.0%) and 97.3% (182/187, 95% CI: 93.9%–99.1%), respectively.

**Conclusions** The newly developed AI system designed for endocytoscopy showed excellent specificity in identifying colorectal cancer.

Friday, 26 March 2021  
How to master colorectal ESD?

16:00 – 16:45  
Room 6

### OP143 RELEVANCE OF R0 RESECTION TO REDUCE LOCAL RECURRENCE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL NEOPLASMS: RESULTS FROM A SPANISH COHORT OF 188 CASES

**Authors** de Frutos D<sup>1</sup>, Santiago J<sup>1</sup>, Omella I<sup>1</sup>, Agudo B<sup>1</sup>, Tormo B<sup>1</sup>, Hernández M<sup>1</sup>, López M<sup>1</sup>, Conde B<sup>1</sup>, Garrido A<sup>1</sup>, De la Corte L<sup>1</sup>, Herreros-de-Tejada A<sup>1,2,3</sup>

**Institute** 1 Puerta de Hierro University Hospital, Gastroenterology and Hepatology, Majadahonda, Spain; 2 MD Anderson Cancer Center, Gastroenterology and Hepatology, Madrid, Spain; 3 La Luz Hospital, Gastroenterology and Hepatology, Madrid, Spain  
DOI 10.1055/s-0041-1724402

**Citation:** de Frutos D, Santiago J, Omella I et al. OP143 RELEVANCE OF R0 RESECTION TO REDUCE LOCAL RECURRENCE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL NEOPLASMS: RESULTS FROM A SPANISH COHORT OF 188 CASES. *Endoscopy* 2021; 53: S59.

**Aims** Assess recurrence rate and disease-free survival time after colorectal endoscopic submucosal dissection (CR-ESD) of colorectal neoplasms (CN) in a Spanish cohort and compare both in relation to complete histologic R0 resection (free deep and lateral margins).

**Methods** Consecutive assessment of all CR-ESD for CN with at least one follow-up endoscopy performed by the same group of Spanish endoscopists in 3 tertiary centers from January 2013 to May 2020. Patients undergoing surgical resection due to major adverse event or elective procedure after non-curative pathology result were excluded (unable to verify local recurrence).

The disease-free survival time and the hazard ratio for recurrence risk were determinate using Kaplan-Meier and Nelson-Aalen method. The log-rank test was used to compare survival functions by groups. Statistical analyses were carried out using Stata v15.1.

**Results** A total of 188 CR-ESD were included (► **table 1**). The mean follow-up period was 18.7 months (Range 3-83). Only 3 cases of local recurrence were identified. The 6-months recurrence rate was 0.5% (CI95: 0.08-3.8%), with statistical significant differences between R0 resection and R1 groups (log-rank test; 0% vs 3.6%,  $p=0.01$ ).

**Conclusions** CR-ESD can be an effective technique for large CN resection, with a very low recurrence rate.

Achieving R0 resection (free deep and lateral margin at histology assessment) appears to be a determinant factor to avoid local recurrence. CR-ESD in European centers can accomplish similar outcomes (R0 and recurrence rate) to those described in large Japanese series.

<b>Age, years. Mean (SD)</b>	67.2 (9.4)	<b>R0 %</b>	85.1 %
<b>Sex male %</b>	53.2 %	<b>LGD (Vienna 3)</b>	123 (65.4 %)
<b>Lesion maximum diameter, mm. Mean (SD)</b>	39.6 (17.9)	<b>HGD (Vienna 4)</b>	48 (25.5 %)
<b>Procedure time, min. Mean (SD)</b>	101.9 (61.7)	<b>SM invasive Ca. (Vienna 5)</b>	5 (2.7)
<b>En-bloc %</b>	94.2 %	<b>Time to first follow-up endoscopy, months. Md (P<sub>25</sub>-P<sub>75</sub>)</b>	12 (7.1-14.1)

### OP144 IMPACT OF SEVERE FIBROSIS IN THE OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION: A COMPARATIVE STUDY IN A EUROPEAN CENTER

**Authors** Félix C<sup>1</sup>, O'Neill C<sup>1</sup>, Mendo R<sup>1</sup>, Barreiro P<sup>1</sup>, Chagas C<sup>1</sup>  
**Institute** 1 Centro Hospitalar Lisboa Ocidental, Gastroenterology, Lisbon, Portugal

DOI 10.1055/s-0041-1724402

**Citation:** Félix C, O'Neill C, Mendo R et al. OP144 IMPACT OF SEVERE FIBROSIS IN THE OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION: A COMPARATIVE STUDY IN A EUROPEAN CENTER. *Endoscopy* 2021; 53: S59.

**Aims** Although effective and safe, endoscopic submucosal dissection (ESD) of lesions with severe fibrosis has been associated with worse outcomes, such as lower curative resection rate and higher incidence of complications. These observations result mainly from oriental studies, and its true impact in ESD performed in the west is still unknown. This study aims to investigate the relation between severe submucosal fibrosis and rectal ESD outcomes in a European center.

**Methods** We examined 192 consecutive patients with rectal tumors who had undergone ESD performed by the same endoscopist from January 2013 to November 2020. Lesions were classified into severe fibrosis (SF) or no-severe-fibrosis (NSF) and the relationship with the outcomes of ESD was analyzed.

**Results** Three resections were interrupted (1 due to severe fibrosis). Severe fibrosis was present in 43 lesions (22.4%) and was related significantly to ESD outcomes, such as en bloc resection rate (SF 88.1% vs NSF 96.6%,  $p=0.045$ ), curative resection rate (SF 59.5% vs NSF 76.2%,  $p=0.033$ ) and rate of snare assisted ESD (SF 11.9% vs NSF 2.7%,  $p=0.027$ ). No significant difference was observed in respect to R0 resection rate, ESD resection speed, and the incidence of complications (all managed conservatively or endoscopically), between the two groups. Of the 17 non-curative resections in the SF group, 2 of



the 13 (15.4%) who did not receive additional treatments had local recurrence, during a median follow-up of 21.9 (10.0-49.1) months, and were treated endoscopically.

**Conclusions** Our study demonstrates that severe fibrosis is an important factor related to non-curative resections and difficult rectal ESD. Regardless of our low curative resection rate in the SF group, only two patients developed recurrence during follow-up, which was managed endoscopically, highlighting the role of ESD in these particularly complex lesions and patients as an option to surgical treatment.

### OP145 SUPERFICIAL NEOPLASIA INVOLVING THE ILEOCECAL VALVE: CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION

**Authors** Andrisani G<sup>1</sup>, Fukuchi T<sup>2</sup>, Antonelli G<sup>3,4</sup>, Hamanaka J<sup>2</sup>, Costamagna G<sup>5</sup>, Maeda S<sup>2</sup>, Hassan C<sup>3</sup>, Di Matteo FM<sup>1</sup>, Hirasawa K<sup>2</sup>

**Institute** 1 Campus Bio-Medico University Hospital, Endoscopy Unit, Rome, Italy; 2 Yokohama City University Medical Center, Endoscopy Division, Yokohama, Japan; 3 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 4 Sapienza University of Rome, Department of Translational and Precision Medicine, Rome, Italy; 5 Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Digestive Endoscopy Unit, Rome, Italy

DOI 10.1055/s-0041-1724403

**Citation:** Andrisani G, Fukuchi T, Antonelli G et al. OP145 SUPERFICIAL NEOPLASIA INVOLVING THE ILEOCECAL VALVE: CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION. *Endoscopy* 2021; 53: S60.

**Aims** Endoscopic submucosal dissection (ESD) is considered a first line treatment for colorectal superficial neoplasia, but certain anatomical locations are challenging even for skilled endoscopists. The ileocecal valve (ICV) is considered a technically challenging site for ESD. Aim of this study was to analyse efficacy and safety of ESD in the treatment of colorectal neoplasia involving the ICV.

**Methods** We retrospectively evaluated 1507 consecutive patients undergoing ESD at two tertiary referral centres for advanced endoscopy (Italy and Japan) from January 2008 to March 2020. Demographic, clinical, procedural, and follow-up data was collected, analysed, and compared between patients with ileocecal valve lesions (ICVL) and patients with non-ICVL.

**Results** Overall, 1507 patients undergoing ESD were enrolled (635 F, 872 M), of which 53 had lesions involving the ICV. Mean age was 70.2 years (range, 53-83 years). En-bloc resection was achieved in 52 (98%) patients. Median specimen size of ICVL was 36.4 mm (range, 8-80 mm), significantly smaller than non-ICVL lesions ( $p=0.005$ ). Procedure time was significantly longer in the ICVL group, (71.3 vs. 58.9 min;  $p=0.03$ ). In ICVL group, the rate of LST-NG was significantly higher compared to rectal lesions (52.8% vs. 25.7;  $p=0.0001$ ). The rate for en-bloc resection for ICVL did not differ significantly between groups. Complications such as perforation and postoperative bleeding rarely occurred, respectively in 3 (5.7%) and 1 (2%) patients and were treated conservatively. At first surveillance colonoscopy (6 months), recurrence was detected in 2 patients (3.9%).

**Conclusions** ESD is safe and effective for treating large superficial neoplasia involving the ileocecal valve when performed by expert endoscopist in referral centres. Our results show that ICV lesions are generally smaller than in the colon but the localisation demands a higher procedural time with not difference in procedure outcomes.

### OP146V WIDESPREAD SUBCUTANEOUS EMPHYSEMA AFTER AN ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): AN UNUSUAL PRESENTATION OF A RARE COMPLICATION

**Authors** Luna D<sup>1</sup>, Iborra I<sup>1</sup>, Puig M<sup>1</sup>, Calm A<sup>1</sup>, González L<sup>1</sup>, Cañete F<sup>1</sup>, Marin I<sup>1</sup>, Caballero N<sup>1</sup>, Colan-Hernández J<sup>1</sup>, Moreno de Vega V<sup>1</sup>, Uchima H<sup>1</sup>

**Institute** 1 Hospital Germans Trias i Pujol, Digestive Department, Badalona, Spain

DOI 10.1055/s-0041-1724404

**Citation:** Luna D, Iborra I, Puig M et al. OP146V WIDESPREAD SUBCUTANEOUS EMPHYSEMA AFTER AN ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): AN UNUSUAL PRESENTATION OF A RARE COMPLICATION. *Endoscopy* 2021; 53: S60.

Perforation during rectal ESD is uncommon. Although, related complications could develop. Patient with a granular-mixed lateral spreading tumor (LST-G-M) of 50x50mm in the distal rectum. An ESD was performed.

ESD using CO<sub>2</sub> insufflation with submucosal tunnel dissection was performed, although with some difficulties due to some areas with muscle retracting sign that required partial myotomy. En-bloc resection is achieved with partial closure of the scar with hemoclips.

Twenty-four hours after the procedure, a widespread subcutaneous emphysema is remarkably detected. There wasn't respiratory compromise and a CT-scan showed no other complications. Conservative management was applied, and the emphysema self-limited within one week.

### OP147 ENDOSCOPIC SUBMUCOSAL DISSECTION OF COLITIS-ASSOCIATED DYSPLASIA – 8 YEAR PROSPECTIVE STUDY IN A TERTIARY CENTRE

**Authors** Dhillon A<sup>1</sup>, Ahmad A<sup>1</sup>, Thomas-Gibson S<sup>1</sup>, Wilson A<sup>1</sup>, Arebi N<sup>2</sup>, Hart A<sup>2</sup>, Saunders B<sup>1</sup>, Suzuki N<sup>1</sup>

**Institute** 1 St Mark's Hospital, Wolfson Unit for Endoscopy, London, United Kingdom; 2 St Mark's Hospital, Inflammatory Bowel Disease Unit, London, United Kingdom

DOI 10.1055/s-0041-1724405

**Citation:** Dhillon A, Ahmad A, Thomas-Gibson S et al. OP147 ENDOSCOPIC SUBMUCOSAL DISSECTION OF COLITIS-ASSOCIATED DYSPLASIA – 8 YEAR PROSPECTIVE STUDY IN A TERTIARY CENTRE. *Endoscopy* 2021; 53: S60.

**Aims** Endoscopic submucosal dissection (ESD) is therapeutic option for colitis-associated dysplasia and offers en bloc resection, allowing precise pathological assessment. Previous studies have shown relatively high local and metachronous recurrence rates but long-term outcome data is lacking.

**Methods** A prospectively maintained database of patients undergoing ESD for colitis-associated dysplasia between April 2011 – November 2019 was analysed.

**Results** A total of 53 dysplastic lesions in 49 patients (24 female; median age 61 [range 36-86]) were included. 42 (79.2%) lesions were flat elevated (Paris IIa) with the remainder either sessile or containing a dominant nodule. The median size was 30mm (range 15-89mm). Only 3 lesions were located proximal to the splenic flexure. The remainder were located in the rectum (n=39), recto-sigmoid junction (n=4) or sigmoid colon (n=7). Submucosal fibrosis and adipose deposition were observed in 47 (88%) and 23 lesions (43%) respectively.

En bloc resection was possible in 44 lesions (83%) of which 33 were histologically confirmed R0 resections (75%). Two patients had delayed bleeding requiring endoscopic therapy for resolution. Advanced pathology (HDG or cancer) was observed in 14 lesions (26.4%). Of 8 patients with cancer; 6 underwent surgical treatment (all were T1), 1 declined surgery and 1 was deemed not fit for surgery. Recurrence was observed in 3/39 (7.6%) lesions and successfully treated endoscopically. 7/37 (18.9%) patients developed metachronous lesions (median follow-up 25.5 months [range 12-94]). Of these, 3 patients underwent pan-proctocolectomy (T2 cancer, rectal neuroendocrine carcinoma, visible HDG), 2 declined surgery and 2 underwent endoscopic management.

**Conclusions** In a selected group of patients, ESD is a feasible and safe treatment option for dysplasia in the short to medium term. En bloc excision was achieved in a high proportion of patients without an increased rate of complications. Metachronous lesions are common and patients must be aware that they require close endoscopic surveillance.

### OP148 RESUMING ANTICOAGULANTS AND/OR ANTIPLATELETS AFTER GASTROINTESTINAL BLEEDING: DOES TIME REALLY MATTER?

**Authors** [Sequeira C<sup>1</sup>](#), [Costa Santos I<sup>1</sup>](#), [Coelho M<sup>1</sup>](#), [Dantas E<sup>1</sup>](#), [Teixeira C<sup>1</sup>](#), [Mangualde J<sup>1</sup>](#), [Oliveira AP<sup>1</sup>](#)

**Institute** 1 Setubal Hospital Center, Gastroenterology, Setubal, Portugal

**DOI** [10.1055/s-0041-1724406](#)

**Citation:** Sequeira C, Costa Santos I, Coelho M et al. OP148 RESUMING ANTICOAGULANTS AND/OR ANTIPLATELETS AFTER GASTROINTESTINAL BLEEDING: DOES TIME REALLY MATTER?. *Endoscopy* 2021; 53: S61.

**Aims** Anticoagulants (AC) and antiplatelets (AP) have a pivotal role in the prevention and treatment of cardiovascular (CV) diseases, but managing major gastrointestinal bleeding (GIB) in these patients represents a challenge. The dilemma is whether, when, and how to restart AC/AP after GIB.

**Aims** To determine if the length of AC/AP interruption ( $\leq 7$  vs.  $> 7$  days after haemostasis achievement) affects the rate of recurrent GIB, vascular events and all-cause mortality.

**Methods** Retrospective review of GIB (upper, lower, or middle) admissions of AC/AP users, from January 2016 to December 2019. Patients with variceal or tumoral bleeding were excluded. We assessed post-discharge readmissions due to vascular events (myocardial infarction, stroke, or thromboembolism) within 1 year and due to GIB within 90 days. Timing and cause of death during follow-up were recorded.

**Results** Included 213 patients (average age  $78.1 \pm 9.4$  years; 61.5% male). 51 were treated with warfarin, 49 with direct oral AC and 113 with AP. The main indications for AC/AP therapy were atrial fibrillation (39%), cerebrovascular disease (24.4%) and ischemic heart disease (18.8%). 95.3% discontinued AC/AP after major GIB and 81.2% resumed AC/AP during follow-up (median 5.0 days; interquartile range 1-9 days). 64.8% resumed therapy within 7 days. We found a 1-month mortality rate of 8.5%. Restarting AC/AP  $\leq 7$  days was not associated with all-cause mortality at 1 month (Odds Ratio (OR) 1.47; 95% CI 0.97–2.50) and recurrent GIB at 90 days (OR:1.07; 95% CI 0.74–1.56). Resuming treatment  $\leq 7$  days was associated with a significantly lower proportion of vascular events within 1 year (OR: 2.24 95% CI 1.28–3.86;  $p=0.001$ ).

**Conclusions** Our results highlight that early resuming AP/AC therapy was not associated with higher risk of short term-mortality and rebleeding, instead delaying AP/AC therapy may increase the risk of CV and thromboembolic events.

### OP149 IMPLEMENTATION OF ALDRETE'S SCORING SYSTEM SIGNIFICANTLY REDUCES RECOVERY TIME AFTER PROCEDURAL SEDATION BY MORE THAN 20 %

**Authors** [Roelandt P<sup>1,2</sup>](#), [Haesaerts R<sup>1</sup>](#), [Missotten R<sup>3</sup>](#), [Desmet E<sup>3</sup>](#), [Demedts J<sup>1,2</sup>](#), [Bisschops R<sup>1,2</sup>](#)

**Institute** 1 UZ Leuven, Endoscopy, Leuven, Belgium; 2 UZ Leuven, Gastroenterology and Hepatology, Leuven, Belgium; 3 KU Leuven, Biomedical Sciences, Leuven, Belgium

**DOI** [10.1055/s-0041-1724407](#)

**Citation:** Roelandt P, Haesaerts R, Missotten R et al. OP149 IMPLEMENTATION OF ALDRETE'S SCORING SYSTEM SIGNIFICANTLY REDUCES RECOVERY TIME AFTER PROCEDURAL SEDATION BY MORE THAN 20 %. *Endoscopy* 2021; 53: S61.

**Aims** Endoscopic procedures are often performed after administration of procedural sedation and analgesia (PSA) by trained non-anaesthesiologist physicians, followed by monitored observation in a dedicated recovery area. Historically, discharge from this recovery area was based on time parameters

(e.g. standard after 1 hour) or clinical assessment by the responsible nurses. The Aldrete's scoring system is a useful tool (5 parameters, 10 points) to objectivate this clinical 'gut feeling' to decide when a patient can be discharged safely. In this study the effect of solely implementation of the Aldrete's scoring system on recovery time after procedural sedation was analysed in a real-life setting.

**Methods** Between November 21<sup>st</sup> and December 12<sup>th</sup> 2019 recovery time after gastroscopy, colonoscopy and endoscopic ultrasound with procedural sedation and analgesia was actively monitored in 231 patients. All procedures were randomly included to represent a real-life situation with different endoscopists, recovery nurses, endoscopy systems and indications. After this observation period all endoscopy nurses were educated to implement the Aldrete's scoring system when discharging patients. The effect of implementation was monitored in 97 patients between February 13<sup>th</sup> and March 11<sup>th</sup> 2020.

**Results** The average time spent in the recovery area was  $59 \pm 22$  minutes after procedural sedation with  $3.5 \pm 1.3$  mg midazolam and  $30 \pm 19$  mg pethidine. After implementation of the Aldrete's scoring system, the recovery time decreased significantly to  $47 \pm 25$  minutes ( $p < 0.01$ ) with similar doses of procedural sedation ( $3.5 \pm 1.2$  mg midazolam and  $32 \pm 19$  mg pethidine). The decrease in time was between 19% and 35% for the different endoscopic procedures. No complications related to earlier discharge from the recovery area were observed.

**Conclusions** Implementation of Aldrete's scoring system after procedural sedation and analgesia significantly reduces the time spent at the recovery area without increasing complication rate.

### OP150 IMPROVED SURVIVAL FOR PATIENTS SUFFERING FROM ACUTE UPPER GASTROINTESTINAL BLEEDING WHILE ON ANTI-THROMBOTIC THERAPY: A MULTICENTER PROSPECTIVE COHORT STUDY

**Authors** [Marmo R<sup>1</sup>](#), [Soncini M<sup>2</sup>](#), [Occhipinti V<sup>3</sup>](#), [Zullo A<sup>4</sup>](#) GISED - Gruppo Italiano per lo Studio dell'Emorragia Digestiva

**Institute** 1 L. Curto Hospital, Gastroenterology Unit, Polla, Italy; 2 A. Manzoni Hospital, Department of Internal Medicine, Lecco, Italy; 3 A. Manzoni Hospital, Digestive Endoscopy and Gastroenterology Unit, Lecco, Italy; 4 Nuovo Regina Margherita Hospital, Gastroenterology and Digestive Endoscopy, Rome, Italy  
**DOI** [10.1055/s-0041-1724408](#)

**Citation:** Marmo R, Soncini M, Occhipinti V et al. OP150 IMPROVED SURVIVAL FOR PATIENTS SUFFERING FROM ACUTE UPPER GASTROINTESTINAL BLEEDING WHILE ON ANTI-THROMBOTIC THERAPY: A MULTICENTER PROSPECTIVE COHORT STUDY. *Endoscopy* 2021; 53: S61.

**Aims** Anti-thrombotic agents (ATs) are risk factors for acute upper gastrointestinal bleeding (AUGIB), but their impact on clinical outcomes is still uncertain. Aim of the study was to determine if patients with AUGIB while on ATs are at higher risk for mortality and rebleeding.

**Methods** We conducted a prospective, multicenter cohort study enrolling all the consecutive patients presenting with AUGIB (either non-variceal, NV-AUGIB or variceal, V-AUGIB) in 50 Italian hospitals from 1 January 2014 to 31 December 2015. Baseline clinical data, laboratory tests, comorbidities, prognostic scores, received therapies and outcomes (death, rebleeding, salvage surgery/radiology, transfusions, length of hospitalization) were compared between ATs-users and non-users.

**Results** 3324 patients with AUGIB (2764 NV-AUGIB, 83.2% and 560 V-AUGIB, 16.8%) were enrolled, 1399 (42.1%) on ATs. Patients taking ATs were older ( $75.4$  vs  $62.8$  years,  $p < 0.001$ ) and had higher ASA, Rockall and Glasgow-Blatchford scores ( $p < 0.001$  for all scores). Patients not taking ATs presented more frequently with hematemesis ( $p < 0.001$ ), shock ( $p = 0.003$ ) and V-AUGIB ( $25.2\%$  vs  $5.3\%$ ,  $p < 0.001$ ) and received more frequently an endoscopic treatment ( $60.4\%$  vs  $54.5\%$ ,  $p < 0.001$ ). Compared to patients not taking ATs, ATs-users showed similar overall ( $6.0\%$  vs  $7.2\%$ ,  $p = 0.17$ ), NV-AUGIB ( $5.4\%$  vs  $6.0\%$ ,  $p = 0.12$ ) and "high-risk" NV-AUGIB (bleeding needing endoscopic therapy,

6.9% vs 5.4%,  $p=0.24$ ) mortality, and lower V-AUGIB mortality (6.8% vs 12.7%,  $p<0.001$ ). At multivariate analysis with comorbidities, use of ATs resulted a protective factor for death (OR 0.63, 95% CI 0.45 – 0.87,  $p=0.006$ ). Rebleeding (5.5% vs 5.8%,  $p=0.71$ ) and need for salvage surgery/radiology (4.2% vs 4.8%,  $p=0.41$ ) were similar in the two groups. ATs-users received more frequently transfusions (62.3% vs 53.5%,  $p<0.001$ ) and had longer hospital stays (10.6 ± 9.8 vs 9.2 ± 9.8 days,  $p<0.001$ ).

**Conclusions** Despite being older and frailer, patients presenting with AUGIB while on ATs have improved survival compared to those not taking ATs, with a similar risk of rebleeding.

## OP151 COMPARISON OF ASSESSMENT TOOLS IN ACUTE UPPER GASTROINTESTINAL BLEEDING: WHICH ONE FOR WHICH DECISION

**Authors** Marmo R<sup>1</sup>, Soncini M<sup>2</sup>, Bucci C<sup>1</sup>, Zullo A<sup>3</sup> GISED

**Institute** 1 Gastroenterology and Endoscopy Unit, “L. Curto” Hospital, Polla (Sa), Italy; 2 Department of Internal Medicine “A. Manzoni” Hospital, Lecco, Italy; 3 Gastroenterology Unit, “Nuovo Regina Margherita” Hospital, Rome, Italy

**DOI** 10.1055/s-0041-1724409

**Citation:** Marmo R, Soncini M, Bucci C et al. OP151 COMPARISON OF ASSESSMENT TOOLS IN ACUTE UPPER GASTROINTESTINAL BLEEDING: WHICH ONE FOR WHICH DECISION. *Endoscopy* 2021; 53: S62.

**Aims** Upper GI bleeding (UGIB) remains a common emergency with significant mortality. Scores help in triaging patients, but which score should be used in the different decision moment to identify patients at high or low death risk remains unclear. We aimed to compare the overall performances of the more validated scores and their cut off performances in different time-point. Secondary outcomes were to compare the scores' performance for predicting the need for therapeutic endoscopy, transfusion(s), rebleeding and surgery/interventional radiology.

**Methods** We conducted a prospective multicenter cohort study, including UGIB patients admitted to 50 Italian hospitals. We collected demographic, clinical data, and information to calculate and compare performances of Rockall, PNED, AIMS65, Glasgow-Blatchford (GBS) and ABC scores.

**Results** Data on 2.307 outpatients (mean age 67.5y, male 69%) were included. For mortality, ABC and PNED scores are the more useful (ROC>80) to classify high-risk patients, while GBS has the best overall performance (ROC 0.74) for low risk ( $p<0.001$ ). For a cut off 0/1, GBS and ABC scores provide the higher PPV (100%) for low-risk patients. For high-risk patients, the highest sensitivity was shown by the AIMS65 (80.7%), and the highest specificity by the PNED score (94.5%). The latter also showed a higher PPV for mortality (28%), followed by the ABC score (20%) ( $p<0.08$ ). The PNED PPV for mortality was clinically and statistically higher than GB, Rockall, and AIMS65 scores ( $p<0.001$ ). For secondary outcomes, no scores were clinically relevant, except for PNED score that had a higher performance (ROC>0.87) in identify rebleeding patients, leading to a modification of risk assessment during hospitalization.

**Conclusions** At admission, GBS and ABC score identify low-risk patients suitable for outpatient management, while PNED and ABC scores can be used to identify high-risk patients. During hospitalization, PNED score should be used to re-assess the mortality risk if a modification of clinical status occurs.

Friday, 26 March 2021

17:00 – 17:45

Precancerous gastric changes: Optimising recognition Room 6

## OP153 ACCURACY OF ENDOSCOPIC DIAGNOSIS IN GASTRIC PRECANCEROUS CONDITIONS

**Authors** Romańczyk M<sup>1</sup>, Ostrowski B<sup>1</sup>, Budzyń K<sup>1,2</sup>, Koziej M<sup>3</sup>, Wdowiak M<sup>1</sup>, Romańczyk T<sup>2</sup>, Błaszczyńska M<sup>4</sup>, Kajor M<sup>5</sup>, Januszewski K<sup>6</sup>, Zajęcki W<sup>7</sup>, Hartleb M<sup>1</sup>

**Institute** 1 Chair and Department of Gastroenterology and Hepatology, School of Medicine in Katowice, Medical University of Silesia, Katowice, Poland; 2 H-T. Centrum Medyczne, Endoterapia, Tychy, Poland; 3 Department of Anatomy, Jagiellonian University Medical College, Kraków, Poland; 4 District Hospitals of Chorzów Trust, Endoscopy Unit, Chorzów, Poland; 5 Department of Pathomorphology and Molecular Diagnostic, School of Medicine in Katowice, Medical University of Silesia, Katowice, Poland; 6 Dr Krzysztof Januszewski, Zakład Diagnostyki Mikroskopowej, Katowice, Poland; 7 Department of Pathomorphology, District Hospitals of Chorzów Trust, Chorzów, Poland  
**DOI** 10.1055/s-0041-1724410

**Citation:** Romańczyk M, Ostrowski B, Budzyń K et al. OP153 ACCURACY OF ENDOSCOPIC DIAGNOSIS IN GASTRIC PRECANCEROUS CONDITIONS. *Endoscopy* 2021; 53: S62.

**Aims** Atrophic gastritis (AG) and intestinal metaplasia (IM) are gastric precancerous conditions (GPC), which are key points in risk stratification for development of intestinal type gastric cancer. The aim of this study was to investigate a performance of endoscopic detection of GPC.

**Methods** It was a multicenter, retrospective study. Out of 6277 patients who underwent diagnostic gastroscopy from 03.2018 to 10.2019 in three centers (tertiary university center, local hospital and private out-patient center) 2078 who had obtained biopsy to evaluate gastritis were analyzed.

**Results** Endoscopic diagnosis of gastritis was established in 2026 patients and in 917 patients AG or IM were detected endoscopically. General GPC detection accuracy (ACC) was 0.64. Endoscopic detection ACC of IM and AG were similar but AG detection characterized with higher sensitivity and lower specificity than IM detection. The data has been summarized in ►table 1. 91 patients were diagnosed with an advance stage of AG based on MAPS II guidelines criteria. Gastritis was diagnosed endoscopically in 89 patients (98%) and only in 64 ones (70%) GPC was endoscopically detected. In the multivariate logistic regression no factor such as sedation, inpatient procedure, HD endoscope, endoscopic detection of gastritis or operator with high biopsy rate was found as factor influencing detection of advanced stages of AG. In the single variate regression model endoscopically visualized AG increased over 2-folds (OR 2.2; 95% CI 1.4-3.5), and IM over 3-folds (OR 3.4; 95% CI 1.9-5.9) the risk of advanced stages of AG of detection.

**Conclusions** Despite improvements in endoscopy technology the detection accuracy of GPC is still too low to substitute biopsy. Obtaining patients biopsy with any sign of gastritis could decrease number of biopsies. This observation warrants further research.

►Tab. 1

Variable	Sensitivity	Specificity	Accuracy
GPC	0.58	0.68	0.64
AG	0.70	0.67	0.68
IM	0.19	0.98	0.71

## OP154 CAN NBI ALONE ACCURATELY IDENTIFY GIM IN A LOW RISK POPULATION COMPARED WITH SYDNEY PROTOCOL? PRELIMINARY DATA FROM A PILOT STUDY IN A NON-ACADEMIC CENTER

**Authors** Kourkoulis P<sup>1</sup>, Kapizioni C<sup>1</sup>, Koutoufaris G<sup>1</sup>, Manoloudaki K<sup>2</sup>, Giannelis P<sup>1</sup>, Mellos A<sup>1</sup>, Vrakas S<sup>1</sup>, Michalopoulos G<sup>1</sup>, Vougiaditis I<sup>1</sup>, Xourgias V<sup>1</sup>

**Institute** 1 Tzaneion, General Hospital of Piraeus, Gastroenterology Clinic, Piraeus, Greece; 2 Tzaneion, General Hospital of Piraeus, Pathology Department, Piraeus, Greece

**DOI** 10.1055/s-0041-1724411

**Citation:** Kourkoulis P, Kapizioni C, Koutoufaris G et al. OP154 CAN NBI ALONE

ACCURATELY IDENTIFY GIM IN A LOW RISK POPULATION COMPARED WITH SYDNEY PROTOCOL? PRELIMINARY DATA FROM A PILOT STUDY IN A NON-ACADEMIC CENTER. *Endoscopy* 2021; 53: S62.

**Aims** The evaluation of Narrow Band Imaging (NBI) outside a tertiary center environment as an assessment method for Gastric Intestinal Metaplasia (GIM) when compared with the established standard of White Light Imaging (WLI) endoscopy with random, Sydney protocol biopsies.

**Methods** Consecutive patients undergoing upper endoscopy in Tzaneion General Hospital of Piraeus were enrolled in the study after informed consent from January to September 2020. Two different endoscopists performed gastroscopy on the same patient. Initially, NBI gastroscopy alongside targeted biopsies from suspicious GIM lesions was performed by the first endoscopist who recorded the Endoscopic Grading for GIM (EGGIM) score for staging. The second endoscopist, being blinded to the NBI findings, consequently performed WLI/Sydney protocol gastroscopy. Pathology examination was also blinded to endoscopic findings. Additionally to the abovementioned, epidemiological data were recorded while the primary outcome was GIM identification based on NBI/EGGIM score, NBI targeted or Sydney protocol biopsies. McNemar test for paired data was used for comparison and  $P < 0.05$  was considered statistically significant.

**Results** In total, 28 patients were enrolled and their demographic characteristics are depicted in ► **Table 1**.

GIM, identified in 16/28 (57.1%) patients overall, was detected by NBI/EGGIM in 15/28 (53.6%), by targeted biopsies in 14/28 (50%) and by Sydney protocol in 9/28 (32.1%) patients. There was no significant difference between GIM detected by NBI/EGGIM without targeted and by Sydney protocol biopsies ( $P = 0.0771$ ). GIM was detected only by Sydney protocol in one patient but missed in 7 patients at whom it was identified only with NBI.

**Conclusions** NBI/EGGIM score alone is a non-inferior method of identifying GIM compared with the cumbersome Sydney protocol. Thus, NBI could be considered as a sole screening tool for GIM, diminishing risk of biopsy, cost, and work burden.

► **Tab. 1**

Sex, female, n (%)	17 (60.7%)
Age, mean	63.5
Current smoking, n (%)	8 (28.6%)
Family history of gastric cancer, n (%)	2 (0.07%)
Current PPI use, n (%)	9 (32,1%)

## OP155 GASTRIC PRECANCEROUS LESIONS: CLINICAL AND ENDOSCOPIC PREDICTORS

**Authors** [Abu Baker F<sup>1</sup>](#), [Davidov Y<sup>2</sup>](#), [Mari A<sup>3</sup>](#), [Arew M<sup>4</sup>](#), [Egbarya M<sup>4</sup>](#), [Kopelman Y<sup>1</sup>](#)

**Institute** 1 Hillel Yaffe Medical Center, Gastroenterology and Hepatology, Hadera, Israel; 2 Sheba Medical Center, Gastroenterology and Hepatology, Ramat Gan, Israel; 3 Nazareth Hospital EMMS, Gastroenterology and Hepatology, Nazareth, Israel; 4 Hillel Yaffe Medical Center, Hadera, Israel  
**DOI** 10.1055/s-0041-1724412

**Citation:** Abu Baker F, Davidov Y, Mari A et al. OP155 GASTRIC PRECANCEROUS LESIONS: CLINICAL AND ENDOSCOPIC PREDICTORS. *Endoscopy* 2021; 53: S63.

**Aims** Atrophic gastritis, gastric intestinal metaplasia and dysplasia are well defined intermediate precancerous lesions (PCL) in the gastric cancer cascade. The diagnosis of PCL may be suspected based on endoscopic findings, but is established by histology. Unfortunately, estimates of the global prevalence of these lesions vary widely and predictors of their diagnosis are ill defined. We aimed to evaluate the prevalence of gastric PCL in our practice and to identify predictors for its diagnosis.

**Methods** We reviewed electronic reports of patients referred for gastroscopy procedures over a 5-year period and included patients whose producers involved the performance of biopsy from gastric mucosa. We investigated demographic, clinical and endoscopic findings to identify possible association with a histologic detection of gastric PCL and performed multivariate analysis to identify predictors of its diagnosis.

**Results** A total of 4930 patients with full endoscopic and histologic data were included for the final analysis. Of these, 806 (16.3%) patients had a histologic diagnosis of gastric PCL. Clinical variables including male sex (51.4% vs. 45.7%;  $P = 0.003$ ), age over 60 (69.8% vs. 45.2%;  $P < 0.001$ ), and anemia indication for gastroscopy (17.6% vs. 14.8%;  $P = 0.04$ ) were significantly associated with gastric PCL diagnosis. Similarly, endoscopic findings of Barrett's esophagus (2.6% vs. 1.3%;  $P = 0.006$ ), Atrophic gastritis according to endoscopist's discernment (12.9% vs. 3.5%;  $P < 0.01$ ) and pan-gastritis (22.5% vs. 14.7%;  $P = 0.02$ ) were significantly associated with gastric PCL. In multivariate analysis, age > 60 (HR 2.51, 95% CI 2.12-2.96), male sex (HR 1.235, 95% CI 1.05-1.44), pan-gastritis (HR 1.284, 95% CI 1.04-1.57), and atrophic gastritis (HR 4, 95% CI 3.07-5.21) were independent predictors for PCL diagnosis.

**Conclusions** We outlined clinical and endoscopic predictors that may aid in the endoscopist decision to perform gastric biopsy to identify gastric PCL.

## OP156V ENDOSCOPIC AND MORPHOLOGICAL FEATURES OF DEPRESSED TYPE GASTRIC INTESTINAL METAPLASIA IN THE BACKGROUND OF EARLY GASTRIC CANCER

**Authors** [Kuvaev R<sup>1,2</sup>](#), [Kashin S<sup>1</sup>](#), [Kraynova E<sup>3</sup>](#), [Tarasova E<sup>1</sup>](#)

**Institute** 1 Yaroslavl Regional Cancer Hospital, Endoscopy, Yaroslavl, Russian Federation; 2 Pirogov Russian National Research Medical University, Gastroenterology, Moscow, Russian Federation; 3 Yaroslavl Regional Cancer Hospital, Pathology, Yaroslavl, Russian Federation  
**DOI** 10.1055/s-0041-1724413

**Citation:** Kuvaev R, Kashin S, Kraynova E et al. OP156V ENDOSCOPIC AND MORPHOLOGICAL FEATURES OF DEPRESSED TYPE GASTRIC INTESTINAL METAPLASIA IN THE BACKGROUND OF EARLY GASTRIC CANCER. *Endoscopy* 2021; 53: S63.

A 58-year-old female patient with early gastric cancer of antrum was referred for ESD. During endoscopic inspection of the background mucosa small depressed lesion was found nearby the neoplastic lesion. Endoscopic inspection of this lesion showed regular round microsurface pattern in the depressed central part and regular tubular microsurface pattern in the periphery part. ESD was performed for early gastric cancer with detected lesion. Histological examination of the post-ESD specimen showed well-differentiated adenocarcinoma (G2, 11 mm, m2,pT1a,L0,V0, HM0,VM0,R0). Depressed lesion was recognized as mixed intestinal metaplasia (IM) with IM in the central depressed area and foveolar epithelium in the periphery part.

## OP157 OCCURRENCE OF PSEUDOPYLORIC METAPLASIA IN ATROPHIC GASTRITIS PATIENTS

**Authors** [Esposito G<sup>1</sup>](#), [Dilaghi E<sup>1</sup>](#), [Baldaro F<sup>1</sup>](#), [Lahner E<sup>1</sup>](#)

**Institute** 1 Sapienza University of Rome, Department of Medical-Surgical Sciences and Translational Medicine, Sant'Andrea Hospital, Rome, Italy  
**DOI** 10.1055/s-0041-1724414

**Citation:** Esposito G, Dilaghi E, Baldaro F et al. OP157 OCCURRENCE OF PSEUDOPYLORIC METAPLASIA IN ATROPHIC GASTRITIS PATIENTS. *Endoscopy* 2021; 53: S63.

**Aims** Pseudopyloric metaplasia (PPM) is a metaplastic transformation resulting in pyloric type glands in the gastric oxyntic mucosa that mainly occurs in atrophic gastritis. Our study aims to assess the occurrence of PPM and clinical and histopathological features in patients corpus atrophic gastritis (CAG).



**Methods** A cross-sectional study was conducted to assess the occurrence of PPM. A total of 510 (F67.8%; median age 61 (18-92) years) patients with CAG were included. According to the histopathological assessment (updated Sydney System), the study population was subdivided into three groups: PPM without intestinal metaplasia (IM), IM without PPM and both. CAG patients with PPM and IM and their main characteristics were compared.

**Results** CAG patients with PPM without IM (PPMgroup) were 116 (22.7%), those with both (PPM&IMgroup) were 286 (56.1%), and those with IM without PPM (IMgroup) were 108 (21.2%). The statically significant differences between the PPM and the IM group as female gender, age<50 years, and iron deficiency and pernicious anemia are shown in ► **Table 1**.

At multivariate logistic regression, independent factors associated with PPM were age <50 years (OR-2.3 [95%CI 1.3-4.1]), and absence of pernicious anemia (OR-3.1 [95%CI 1.8-5.5]).

Other features as the presence of autoimmune gastritis and *H. pylori* positivity were not associated with PPM.

► **Tab.1** Statically significant differences between the PPM and the IM group at univariate analysis. Data expressed as number (percentage) of the total.

	PPMgroup n = 116 (22.7)	IMgroup n = 108 (21.2)	p value
Female	91 (78.4)	66 (61.1)	0.0047
Age <50	45 (38.8)	23 (21.3)	0.0045
Iron deficiency anemia	56 (49.6)	37 (35.2)	0.0331
Pernicious anemia	36 (31.9)	57 (54.3)	0.0008

**Conclusions** Our study showed that in CAG patients PPM alone is as prevalent as IM (about 20%), but most frequently both types of metaplasia occur together (56%). Younger age and iron deficiency anemia, the earliest and most frequent micronutrient deficiency in CAG, were both significantly more frequent in CAG patients with PPM without IM. PPM seems to represent the first expression of metaplasia transformation in the chronic inflammatory setting of CAG.

Saturday, 27 March 2021  
New therapeutic frontiers

09:00 – 09:45  
Room 5

## OP158V ENDOSCOPIC CLOSURE OF BENIGN TRACHEO-ESOPHAGEAL FISTULA USING NOVEL ATRIAL SEPTAL DEFECT OCCLUDER DEVICE

**Authors** Bapaye A<sup>1</sup>, Pawar B<sup>2</sup>, Gandhi A<sup>1</sup>, Borkar M<sup>1</sup>, Bapaye H<sup>3</sup>

**Institute** 1 Deenanath Mangeshkar Hospital & Research Center, Shivanand Desai Center for Digestive Disorders, PUNE, India; 2 Deenanath Mangeshkar Hospital and Research Center, Department of Pulmonology, Pune, India; 3 Byramjee Jeejeebhoy Medical College, Pune, India

DOI 10.1055/s-0041-1724415

**Citation:** Bapaye A, Pawar B, Gandhi A et al. OP158V ENDOSCOPIC CLOSURE OF BENIGN TRACHEO-ESOPHAGEAL FISTULA USING NOVEL ATRIAL SEPTAL DEFECT OCCLUDER DEVICE. *Endoscopy* 2021; 53: S64.

**Introduction** Surgery is standard for closure of tracheo-esophageal fistula (TEF). Video demonstrates successful endoscopic closure of TEF using atrial septal defect (ASD) Occluder device.

**Patient and methods** 53-years male –cough 2-months. CT scan, EGD, bronchoscopy –7mm TEF at 22 cm. Histology – inflammatory. Simultaneous EGD and bronchoscopy – fistula edge refreshed using APC. Guidewire negotiated from esophagus to trachea under fluoroscopy. Occluder (waist – 12mm, thickness – 4mm) deployed over guidewire. Trachea-bronchial patency confirmed. Feeding tube.

**Results** Follow-up Bronchoscopy and EGD –device in-situ, patent airway. Barium swallow – no leak. Oral diet tolerated.

**Conclusions** This video demonstrates successful TEF closure using Occluder device.

## OP159 ENDOSCOPIC SUBMUCOSAL DISSECTION USING DETACHABLE ASSISTANT ROBOT: COMPARATIVE IN VIVO FEASIBILITY STUDY

**Authors** Kim SH<sup>1</sup>, Choi HS<sup>1</sup>, Lee KW<sup>1</sup>, Jeon HJ<sup>1</sup>, Lee JM<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Jeon YT<sup>1</sup>, Lee HS<sup>1</sup>, Chun HJ<sup>1</sup>

**Institute** 1 Department of Internal Medicine, Korea University, Seoul, Korea, Republic of

DOI 10.1055/s-0041-1724416

**Citation:** Kim SH, Choi HS, Lee KW et al. OP159 ENDOSCOPIC SUBMUCOSAL DISSECTION USING DETACHABLE ASSISTANT ROBOT: COMPARATIVE IN VIVO FEASIBILITY STUDY. *Endoscopy* 2021; 53: S64.

**Aims** Appropriate tissue tension and clear visibility of the dissection area by traction are essential for effective and safe endoscopic submucosal dissection (ESD). We developed a robotic assistive traction device for flexible endoscopy, and compared its safety and efficiency in ESD between experienced and novice endoscopists.

**Methods** Robotic ESD was performed by experienced and novice endoscopist groups (n = 2, each). The outcomes included time to complete each ESD step, total procedure time, size of the dissected mucosa, rate of en bloc resection, and major adverse events. Furthermore, the incision and dissection speeds were compared between the groups.

**Results** Sixteen gastric lesions were resected from nine live pigs. In the experienced group, mean incision speed and mucosal dissection speed were higher (3.25 vs. 0.64 cm<sup>2</sup>/min, P = 0.002; and 3.21 vs. 2.30 cm<sup>2</sup>/min; P = 0.365, respectively), but without statistical significance in the latter. There was no significant difference between the two groups in the grasp time, which is the time

► **Tab. 1** Outcomes of robotic endoscopic submucosal dissection

Outcomes	Experienced endoscopists group	Novice endoscopists group	P-value
En bloc resection rate, %	100	100	
Mean incision speed (cm <sup>2</sup> /min)	3.25 ± 0.88	0.64 ± 0.14	0.002
Mean dissection speed (cm <sup>2</sup> /min)	3.21 ± 0.75	2.30 ± 0.60	0.365
Major bleeding during procedure, %	0	0	

taken to grasp the flap with the robotic arm after pre-cutting. No perforation or major bleeding was reported.

**Conclusions** The dissection speed gap was significantly reduced as compared to the incision speed gap. It seemed that the beginner's dissection speed increased significantly with the help of the robot. Our robotic device can provide simple, effective, and safe multidirectional traction and countertraction during ESD. While performing robotic ESD, novices could perform ESD safely and efficiently. We expect our device to help trainees perform ESD in places where ESD education is difficult to obtain. The device must be made smaller, and its safety and efficacy in humans should be assessed in future studies.

## OP160V PRISTINE VISIBILITY ASSOCIATED TO THE USE OF TEXTURE AND COLOUR ENHANCEMENT IMAGING (TXI) DURING SUBMUCOSAL DISSECTION: A CASE OF LARGE BARRETT'S NEOPLASIA

**Authors** Lemmers A<sup>1</sup>, Bucalau AM<sup>1</sup>, Verset L<sup>2</sup>, Van Laethem J-L<sup>1</sup>, El Nakadi I<sup>3</sup>, Devière J<sup>1</sup>

**Institute** 1 CUB Erasme Hospital, Université Libre de Bruxelles (ULB), Gastroenterology, Hepato-Pancreatology and Digestive Oncology, Brussels, Belgium; 2 Bordet Institute, Université Libre de Bruxelles (ULB), Pathology, Brussels, Belgium; 3 CUB Erasme Hospital, Université Libre de Bruxelles (ULB), Abdominal Surgery, Brussels, Belgium

**DOI** 10.1055/s-0041-1724417

**Citation:** Lemmers A, Bucalau AM, Verset L et al. OP160V PRISTINE VISIBILITY ASSOCIATED TO THE USE OF TEXTURE AND COLOUR ENHANCEMENT IMAGING (TXI) DURING SUBMUCOSAL DISSECTION: A CASE OF LARGE BARRETT'S NEOPLASIA. *Endoscopy* 2021; 53: S65.

**Aims** Endoscopic enhancement modalities mainly focus on early neoplasia detection, characterization and demarcation. Few studies have reported the use of new enhancement modalities during ESD to help in submucosal visibility.

**Method** We report a video-case of large Barrett's neoplasia resected by ESD using the new Texture and Colour Enhancement Imaging (TXI) from EVIS X1 (Olympus).

**Results** After lesion demarcation using NBI, TXI was used during the whole dissection, improving the contrast and clear view of the different planes both in the CO<sub>2</sub> or water phases.

**Conclusion** Seeing its impressive visibility, TXI might reimplace white light during submucosal space endoscopy.

## OP161 OUTCOMES IN EFTR WITH FTRD-SYSTEM: WHEN PATIENT SELECTION IS CRUCIAL

**Authors** Soriani P<sup>1</sup>, Curatolo A<sup>1</sup>, Vavassori S<sup>1</sup>, Rainer J<sup>1</sup>, Ottaviani L<sup>1</sup>, Impellizzeri G<sup>1</sup>, Gabbani T<sup>1</sup>, Deiana S<sup>1</sup>, Bonura GF<sup>1</sup>, Manno M<sup>1</sup>

**Institute** 1 Azienda USL Modena, Gastroenterology and Digestive Endoscopy Unit, Carpi, Italy

**DOI** 10.1055/s-0041-1724418

**Citation:** Soriani P, Curatolo A, Vavassori S et al. OP161 OUTCOMES IN EFTR WITH FTRD-SYSTEM: WHEN PATIENT SELECTION IS CRUCIAL. *Endoscopy* 2021; 53: S65.

**Aims** Endoscopic full-thickness resection (EFTR) with FTRD-system is a novel treatment for gastrointestinal lesions not suitable for conventional endoscopic resection. Aim of this retrospective single centre study was to assess its efficacy and safety.

**Methods** Thirty-six patients (18 male, 18 female; mean age 79 years, range 51-86) were recruited to perform EFTR using FTRD-system: 21 colon, 9 rectum (13 residual/recurrent adenoma, 9 non-lifting lesions, 3 incomplete resections at histology, 4 endoscopically suspected T1 carcinoma, 1 subepithelial lesions); 5 duodenal (4 non polypoid lesions, 1 subepithelial lesion); 1 gastric for early gastric cancer. Technical success (lesion reached and resected), R0 resection (negative lateral and deep

margins), EFTR rate (all layers in the specimen) and adverse events (AE) were evaluated.

**Results** Technical success was achieved in all of cases. EFTR rate was achieved in 93,3% of colorectal EFTR, and in 100% of gastro-duodenal EFTR. R0 resection rate was 93,2% in colorectal EFTR and 100% in gastro-duodenal EFTR. All histological assessments are presented in ►table 1. AEs occurred in 16,5% (2 bleeding, 1 perforation, 2 post-polypectomy syndrome) of colorectal EFTR and in 20% (1 bleeding) of gastro-duodenal cases: only one snare malfunction occurred in a colorectal case. Six month follow-up was available in 27 cases: no evidence of residual disease or stenosis were registered.

**Conclusions** Our data confirm that an appropriate patient selection is crucial to improve outcomes. EFTR using FTRD-system seems to be a curative, effective and safe technique for treatment of selected lesions that would otherwise need surgery.

## OP162 MOTORIZED SPIRAL ENTEROSCOPY-ASSISTED ERCP IN ALTERED GASTROINTESTINAL ANATOMY: FIRST CLINICAL SERIES

**Authors** Schneider M<sup>1</sup>, Neuhaus H<sup>1</sup>, Beyna T<sup>1</sup>

**Institute** 1 Department of Gastroenterology and Interventional Endoscopy, Evangelisches Krankenhaus Düsseldorf, Düsseldorf, Germany

**DOI** 10.1055/s-0041-1724419

**Aims** Recently novel motorized spiral enteroscopy (MSE) has been introduced into clinical practice and has been shown to be safe and effective for deep enteroscopy in patients without previous abdominal surgery. MSE has not yet been studied in patients with surgically altered anatomy of the upper gastrointestinal tract. ERCP in this group of patients often needs device assisted enteroscopy, in particular after Roux-en-Y reconstructive surgery. In this first series we evaluate feasibility and safety of MSE-assisted ERCP.

**Methods** All patients undergoing MSE-assisted ERCP after Roux-en-Y reconstructive surgery were retrospectively analyzed at a tertiary reference center since 2016.

**Results** Overall, 21 patients (10 female, 11 male) with a median age of 67 years (range 46-87) could be identified. All patients had co-morbidities (ASA II 19%, ASA III 81%). Indications for ERCP included biliary strictures (n=12), biliary stones (n=6) and others (n=3). All patients had a Roux-en-Y-anatomy. Technical success rate of MSE (reaching the papilla or bilio-enteric anastomosis) was 85,7% (18/21). Overall success rate of ERCP (successful cholangiogram) was 83.3% (15/18). After biliary cannulation, therapeutic interventions

► Table 1 Results

Indication, n (%)	
<i>Colo-rectal EFTR</i>	
Residual/recurrent adenoma	13 (43,3%)
Non-lifting lesion	9 (3%)
Suspected T1 carcinoma	4 (13,3%)
Histological R1 resection	3 (10%)
Submucosal lesion <i>Duodenal EFTR</i>	1 (3,3%) 4 (80%) 1 (20%)
Non-lifting lesion Submucosal lesion	
<i>Gastric EFTR</i>	
Early gastric cancer	1 (100%)

Diameter of lesion (mm), mean, (range)	
Colo-rectal EFTR	17 (4-32)
Duodenal EFTR	21 (13-35)
Gastric EFTR	20
Technical success, n (%)	
Colo-rectal EFTR	30 (100 %)
Duodenal EFTR	5 (100 %)
Gastric EFTR	1 (100 %)
EFTR resection, n (%)	
Colo-rectal EFTR	28 (93,2 %)
Duodenal EFTR	5 (100 %)
Gastric EFTR	1 (100 %)
R0 resection, n (%)	
Colo-rectal EFTR	28 (93,2 %)
Duodenal EFTR	5 (100 %)
Gastric EFTR	1 (100 %)
Histology, n (%)	
<i>Colo-rectal EFTR</i>	
High grade dysplasia adenoma	13 (43,3 %)
Low grade dysplasia adenoma	4 (13,3 %)
Low risk T1 carcinoma	3 (10 %)
High risk T1 carcinoma	5 (16,6 %)
Scar tissue	4 (13,3 %)
Neuroendocrine tumor	1 (3,3 %)
<i>Duodenal EFTR</i>	
High-grade dysplasia adenoma	4 (80 %)
Neuroendocrine tumor	1 (20 %)
<i>Gastric EFTR</i>	
Early gastric cancer	1 (100 %)
Adverse events, n (%)	
<i>Colo-rectal EFTR</i>	
Bleeding	2 (6,6 %)
Perforation	1 (3,3 %)
Post-polypectomy syndrome	2 (6,6 %)
<i>Duodenal EFTR</i>	
Bleeding	1 (20 %)
Technical adverse events (colo-rectal EFTR), n (%)	
Snare malfunction	1 (3,3 %)
Six-month follow-up	
Residual disease/stenosis n (%)	0 (0 %)

were successfully performed in all patients including balloon-dilation (n = 11), stenting (n = 8) including two implantations of a self-expandable metal stents, stone extraction (n = 4), stent extraction (n = 4), tissue acquisition from stricture (n = 2) and needle-knife precut-sphincterotomy (n = 1). Median total procedure time was 72 minutes (range 42-165). Adverse event rate was 4,8% (self-limiting prolonged bleeding after balloon dilatation of the bilio-enteric anastomosis in one patient). No serious adverse events were registered.

**Conclusions** The current series showed for the first time the feasibility of MSE for ERCP in patients with surgically altered upper gastrointestinal anatomy. The results indicate that biliary access and therapeutic interventions can be achieved in most of the cases with a low rate of adverse events. These data justify further evaluation of this new technique preferably in a prospective multicenter trial.

Saturday, 27 March 2021

09:00 – 09:45

EUS for drainage of infected collections

Room 6

### OP163 ELECTROCAUTERY-ENHANCED DELIVERY SYSTEM OF LUMEN APPOSING METAL STENT FOR EUS-GUIDED BILIARY AND GALLBLADDER DRAINAGE: A SINGLE-CENTER STUDY

Authors Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, AC Lopez<sup>1</sup>, Sanchez-Carriel M<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

Institute 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

DOI 10.1055/s-0041-1724420

**Citation:** Robles-Medranda C, Oleas R, Alcivar-Vasquez J et al. OP163 ELECTROCAUTERY-ENHANCED DELIVERY SYSTEM OF LUMEN APPOSING METAL STENT FOR EUS-GUIDED BILIARY AND GALLBLADDER DRAINAGE: A SINGLE-CENTER STUDY. *Endoscopy* 2021; 53: S66.

**Aims** We aimed to evaluate the feasibility and safety of lumen-apposing metal stents for EUS-guided biliary and gallbladder drainage.

**Methods** An observational, retrospective study from a single tertiary institution (Jun 2018 to August 2020). The technical success was defined by the successful completion of the intended procedure by the placement of the LAMS in the intended position. Management of technical failures was recorded. Safety was defined as the occurrence of procedure-related related adverse events in accordance with the ASGE Lexicon. Adverse event management was recorded.

**Results** Seventy-seven patients were included for analysis: 40/77 were EUS-guided gallbladder drainages, 17/77 EUS-guided biliary drainages and 20/77 patients received combined EUS-guided gallbladder and biliary drainage on the same session. Regarding gallbladder drainage, 34/60 (56.7%) were performed for the management of acute cholecystitis. Regarding biliary drainage, 11/37 (29.7%) patients were submitted following a failed ERCP in comparison to 26/37 (70.3%) in whom EUS-guided biliary drainage was offered as a first-line modality for achieving biliary drainage. In those patients with biliary drainage, the draining site was common bile duct 77.14%, left intrahepatic duct 20% and right intrahepatic duct 2.8%. The baseline total bilirubin level was 18.3 mg/dL. Following EUS-guided biliary drainage we found a statistically significant decrease in bilirubin level at 1-week (median level 10.6 mg/dL) and 4-week follow-up (median level 2.38 mg/dL) (<0.001). Overall, 74/77 (96.1%) of patients achieved technical success. Three patients required a reintervention following failed EUS-guided procedure: 2 of 3 LAMS were misdeployed, the tracks were closed with an OTSC and one retreated using a fully covered metallic biliary stent. No clinical adverse events were reported on follow-up.

**Conclusions** EUS-guided biliary drainage using LAMS is a feasible, effective, and safe procedure for the management of palliative biliary drainage. EUS-guided gallbladder drainage is a safe and effective alternative for the management of gallbladder disorders.

## OP164 EFFICACY AND SAFETY OF DOUBLE PIGTAIL STENTS IN THE CONTEXT OF HEPATICOGASTROSTOMY DYSFUNCTION AND REPEATED INTRAHEPATIC ACCESS

**Authors** Bronswijk M<sup>1,2</sup>, Vanella G<sup>3</sup>, van Malenstein H<sup>2</sup>, Laleman W<sup>2</sup>, Van der Merwe S<sup>2</sup>

**Institute** 1 Department of Gastroenterology and Hepatology, Imelda General Hospital, Bonheiden, Belgium; 2 Department of Gastroenterology and Hepatology, University Hospitals Gasthuisberg, University of Leuven, Leuven, Belgium; 3 IRCCS San Raffaele Scientific Institute, Pancreatobiliary Endoscopy and Endosonography Division, Milan, Italy

**DOI** 10.1055/s-0041-1724421

**Citation:** Bronswijk M, Vanella G, van Malenstein H et al. OP164 EFFICACY AND SAFETY OF DOUBLE PIGTAIL STENTS IN THE CONTEXT OF HEPATICOGASTROSTOMY DYSFUNCTION AND REPEATED INTRAHEPATIC ACCESS. *Endoscopy* 2021; 53: S67.

**Aims** EUS-guided hepaticogastrostomy (EUS-HG) may provide an important therapeutic option in the context of failed ERCP, inaccessible papilla or post-surgical anatomy. However, hepaticogastrostomy dysfunction or the nature of the underlying disease may necessitate reinterventions over time. Our aim was to evaluate the efficacy and safety of double pigtail stents for the treatment of hepaticogastrostomy dysfunction and in the context of repeated intrahepatic biliary access.

**Methods** A tertiary single center retrospective analysis of all consecutive EUS-HG procedures was performed at the University Hospitals Leuven, Belgium. All cases undergoing subsequent treatment in the context of EUS-HG dysfunction or repeated intrahepatic access by means of double pigtails were included. Baseline characteristics, underlying disease characteristics, as well as technical procedural details and outcomes were collected.

**Results** Fifteen patients were identified (mean age 69 (SD ±10.5) years, female 46.7%, 53.3% benign disease), which underwent a total of 32 individual procedures using double pigtails. In all but one procedure technical success was attained (96.9%), whereas clinical success, defined by successful treatment of cholangitis or bilirubin decrease >25% in cases with EUS-HG dysfunction, was achieved in 12 out of 15 patients (80.0%). In the 3 patients with clinical failure, successful percutaneous transhepatic drainage was performed. Using the ASGE lexicon for adverse events (AE), two AE (6.3%) were identified (one mild and one moderate), both consisting of post-interventional cholangitis, for which antibiotics were administered successfully. No severe or fatal adverse occurred. Stent dysfunction was detected following 6 procedures (18.8%) after a median of 46 days (IQR 23-62). No episodes of stent migration occurred, provided that successful simultaneous intraduodenal and intragastric placement was achieved.

**Conclusions** Our data show that double pigtail stents facilitate safe and effective treatment of EUS-hepaticogastrostomy dysfunction and provided long term intrahepatic access, paving the way towards definitive treatment in challenging situations and both benign or malignant disease.

## OP165 EUS GUIDED DRAINAGE OF INTRA ABDOMINAL DIVERTICULAR ABSCESS. A CASE SERIES

**Authors** Cereatti F<sup>1</sup>, Spota A<sup>1</sup>, Donatelli G<sup>1</sup>

**Institute** 1 Hôpital Privé des Peupliers, Ramsay Santé, Unité d'Endoscopie Interventionnelle, Paris, France

**DOI** 10.1055/s-0041-1724422

**Citation:** Cereatti F, Spota A, Donatelli G OP165 EUS GUIDED DRAINAGE OF INTRA ABDOMINAL DIVERTICULAR ABSCESS. A CASE SERIES. *Endoscopy* 2021; 53: S67.

**Aims** Diverticular disease is widespread worldwide. Mainstay approach is non operative treatment with bowel rest and broad-spectrum intravenous antibiotics. However, extra-colic abscess larger than 4 cm may require percutaneous

trans-abdominal drainage. We report a single center case series of patients underwent to trans-luminal endoscopic ultrasound (EUS) guided drainage of pelvic abscess in diverticular disease with temporary placement of lumen apposing metal stent (LAMS).

**Methods** All patients referred to our tertiary center from January 2019 to July 2020 were enrolled in a prospective data base that was retrospectively analyzed. Procedural steps were as follow: preoperative CT scan, broad spectrum antibiotic therapy, EUS guided deployment of LAMS for 15 days, LAMS removal and deployment of pigtail stent in case of pseudo-cavity persistence. Clinical success was defined as complete radiological obliteration of the abscess and C-reactive protein normalization with no need for prolonged antibiotic or analgesic therapy for at least 6 months after the end of treatment.

**Results** 10 patients (6F) with an average of 59.6 years were enrolled with deployment of 10 LAMS. 1 patient was excluded after EUS evaluation due to abscess smaller than 3 cm. Median abscess size was 7.45 cm (SD 2.8). One patient had 2 separate collections that required the deployment of 2 LAMS Technical and clinical success was achieved in 88.8% (8/9). No EUS related adverse event occurred.

**Conclusions** Management of diverticulitis has shifted from primary surgical intervention towards a non-operative approach of bowel rest and broad-spectrum intravenous antibiotics in conjunction with interventional procedures to drain abscesses whenever necessary. EUS guided drainage with LAMS for the management of diverticular abscesses seems an efficient treatment modality for encapsulated abscesses more than 4 cm in size and close to colonic wall. In expert centers it may avoid radiologic intervention and/or surgery in a relevant percentage of cases.

## OP166 ENDOSCOPIC ULTRASOUND-GUIDED VERSUS PERCUTANEOUS CATHETER DRAINAGE FOR THE MANAGEMENT OF INFECTED WALLED OFF NECROSIS: WHICH AND WHY?

**Authors** Samanta J<sup>1</sup>, Dhar J<sup>1</sup>, Muktesh G<sup>1</sup>, Kumar-M P<sup>1</sup>, Gupta P<sup>1</sup>, Agarwala R<sup>1</sup>, BL Bellum<sup>1</sup>, Chauhan R<sup>1</sup>, TD Yadav<sup>2</sup>, Gupta V<sup>2</sup>, SK Sinha<sup>1</sup>, Kochhar R<sup>1</sup>

**Institute** 1 Post Graduate Institute of Medical Education and Research, Chandigarh, Gastroenterology, Chandigarh, India; 2 Post Graduate Institute of Medical Education and Research, Chandigarh, GI Surgery, Chandigarh, India  
**DOI** 10.1055/s-0041-1724423

**Citation:** Samanta J, Dhar J, Muktesh G et al. OP166 ENDOSCOPIC ULTRASOUND-GUIDED VERSUS PERCUTANEOUS CATHETER DRAINAGE FOR THE MANAGEMENT OF INFECTED WALLED OFF NECROSIS: WHICH AND WHY?. *Endoscopy* 2021; 53: S67.

**Aims** Symptomatic walled-off-necrosis (WON) is managed by either percutaneous catheter drainage (PCD) or EUS-guided drainage (EUS-D), but limited data exist comparing the two, and infected WON with/without organ failure (OF) is still more difficult to manage.

**Methods** Patients with symptomatic WON were divided into two groups of PCD and EUS-D, depending on the modality of drainage. Clinical success was defined as resolution of symptoms, collection, and OF without the need for an alternative procedure/surgery. Adverse events, secondary infection rates, and other outcome measures were recorded. The two modalities were compared for those with infected WON with/without OF and analyzed additionally in terms of the degree of solid component (SC).

**Results** 218 patients (175 males; 80.3%) underwent either PCD (n = 102) or EUS-D (n = 116). Clinical success was significantly higher in the EUS-D arm (92.1% vs 64.6%; p<0.0001). Among patients with infected WON (n = 128), clinical success was significantly higher in the EUS-D arm (86.7% vs 62.2%; p=0.004) with higher (p=0.007) and faster (p<0.0001) OF resolution. All other outcome measures such as need for ICU/ventilator support, length of ICU or



hospital stay, surgery, and mortality were significantly higher in the PCD arm. A multivariate model showed EUS-D as a significant positive predictor ( $p=0.03$ ) for clinical success in infected WON. Based on mode of drainage and degree of SC, PCD with >40% SC evidently had the worst clinical success with higher adverse outcomes while EUS-D with <40% SC had the best outcomes.

**Conclusions** This is the largest data to show that EUS-D should be preferred over PCD in the management of WON, infected or otherwise, with higher clinical success, higher and faster resolution of OF with lower rates of re-intervention, adverse events, and better survival. While EUS-D will be preferred in all feasible cases of WON, PCD should be avoided in WON with >40% SC.

► Tab. 1

Sub-group of Infected WON	EUS-D (n = 45)	PCD (n = 83)	p value
Clinical success	39 (86.7 %)	51 (62.2 %)	0.004
Resolution of OF	24/27 (88.9 %)	39/66 (59.1 %)	0.007
Time to resolution of OF (days)	3.08±1.3	10.31±4.9	<0.0001
Mortality	3 (6.7 %)	27 (32.5 %)	0.001

## OP167 EUS-GUIDED GALLBLADDER DRAINAGE USING A LUMEN-APPPOSING METAL STENT FOR ACUTE CHOLECYSTITIS: RESULTS OF A MULTICENTER STUDY

**Authors** Binda C<sup>1</sup>, Anderloni A<sup>2</sup>, Forti E<sup>3</sup>, Fusaroli P<sup>4</sup>, Macchiarelli R<sup>5</sup>, Manno M<sup>6</sup>, Fugazza A<sup>2</sup>, Redaelli A<sup>7</sup>, Aragona G<sup>8</sup>, Lovera M<sup>9</sup>, Togliani T<sup>10</sup>, Armellini E<sup>11</sup>, Amato A<sup>12</sup>, Brancaccio ML<sup>13</sup>, Badas R<sup>14</sup>, Leone N<sup>15</sup>, de Nucci G<sup>16</sup>, Mangiavillano B<sup>17</sup>, Sbrancia M<sup>1</sup>, Pollino V<sup>18</sup>, Maida M<sup>19</sup>, Sinagra E<sup>20</sup>, Repici A<sup>2,21</sup>, Fabbri C<sup>1</sup>, Tarantino I<sup>22</sup>

**Institute** 1 AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, Forlì-Cesena, Italy; 2 Humanitas Clinical and Research Center - IRCCS, Digestive Endoscopy Unit, Rozzano (MI), Italy; 3 Ospedale Ca' Granda Niguarda, Digestive and Interventional Endoscopy Unit, Milano, Italy; 4 University of Bologna, Gastroenterology Unit, Hospital of Imola (BO), Imola (BO), Italy; 5 A.O.U.S. Policlinico S.Maria alle Scotte, Gastroenterology Unit, Siena, Italy; 6 Azienda USL di Modena, UOSD Gastroenterologia ed Endoscopia Digestiva, Rete Gastroenterologica Provinciale, Modena, Italy; 7 San Gerardo Hospital, Endoscopy Unit, Monza, Italy; 8 Guglielmo da Saliceto Hospital, Gastroenterology and Hepatology Unit, Piacenza, Italy; 9 Fondazione Poliambulanza Istituto Ospedaliero, Digestive Endoscopy Unit, Brescia, Italy; 10 ASST Carlo Poma, Gastroenterology and Endoscopy Unit, Mantova, Italy; 11 ASST Bergamo Est, Digestive Endoscopy Unit, Seriate, Bergamo, Italy; 12 Valduce Hospital, Department of Gastroenterology, Como, Italy; 13 S. Maria delle Croci Hospital, Division of Gastroenterology, Ravenna, Italy; 14 University Hospital, Digestive Endoscopy Unit, Cagliari, Italy; 15 Humanitas Gradenigo, Digestive Endoscopy Unit, Torino, Italy; 16 ASST Rhodense, Gastroenterology and Endoscopy Unit, Garbagnate Milanese (MI), Italy; 17 Humanitas - Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy; 18 S. Michele Hospital, Digestive Endoscopy Unit, Cagliari, Italy; 19 S. Elia-Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 20 Fondazione Istituto G. Giglio, Gastroenterology and Endoscopy Unit, Cefalù, Italy; 21 Humanitas University, Department of

Biomedical Sciences, Pieve Emanuele, Milano, Italy; 22 IRCCS-ISMETT, Endoscopy Service, Department of Diagnostic and Therapeutic Services, Palermo, Italy

DOI 10.1055/s-0041-1724424

**Citation** Binda C, Anderloni A, Forti E et al. OP167 EUS-GUIDED GALLBLADDER DRAINAGE USING A LUMEN-APPPOSING METAL STENT FOR ACUTE CHOLECYSTITIS: RESULTS OF A MULTICENTER STUDY. *Endoscopy* 2021; 53: S68.

**Aims** The aim of the study is the evaluation of the effectiveness and safety of endoscopic ultrasound guided gallbladder drainage (EUS-GBD) using lumen apposing metal stents (LAMS) for acute cholecystitis (AC) in a large cohort of patients at high-risk for cholecystectomy.

**Methods** This is a multicenter, retrospective study including EUS-guided GBD using LAMS performed in fragile patients with AC in 19 Italian Centers from June 2014 to July 2020. Primary outcomes were technical and clinical success, secondary outcome was adverse events (AEs) rate.

**Results** A total of 116 patients (48.3% female) were included, with a mean age of  $82.7 \pm 11$  years. The mean gallbladder major axis was  $71.2 \pm 35.8$  mm, while the mean width was  $59.4 \pm 34$  mm. LAMS were placed transgastric in 44.8% of cases, transduodenal in 53.3% and transjejunal in 1.7% in patient with altered anatomy. Technical and clinical success were achieved in 93.1% and 87.1% of cases respectively. In particular, white blood cell (WBC) count, C reactive protein (CRP), total and direct bilirubin levels were statistically significant reduced ( $p<0.05$ ) after two weeks. The mean procedure time was 24.5 minutes. Mean hospital stay was  $11.2 \pm 9$  days. The mean follow-up was 186.4 days. AEs occurred in 12/116 pts (10.3%): 8/12 were intraprocedural, while 1 was classified as early (< 15 days) and 3 as delayed (> 15 days). According to ASGE lexicon, 2 (16.7%) were mild, 3 (25%) were moderate, while 7 (58.3%) were severe.

**Conclusions** Our study shows that EUS-GBD had high technical and clinical success rates in a large cohort of fragile patients. Although the not negligible rate of AEs, EUS-guided GBD should be considered an effective option of treatment in inoperable patients.

Saturday, 27 March 2021

10:00 – 10:45

Pancreatic endotherapy: Off the beaten track

Room 5

## OP168 DIGITAL-SINGLE-OPERATOR PANCREATOSCOPY GUIDED LITHOTRIPSY FOR PANCREATIC DUCT STONES IN SYMPTOMATIC, TREATMENT REFRACTORY CHRONIC PANCREATITIS. LONG-TERM FOLLOW-UP ON CLINICAL, TECHNICAL SUCCESS AND QUALITY OF LIFE

**Authors** Gerges C<sup>1</sup>, Dertmann T<sup>1</sup>, Schneider M<sup>1</sup>, PD Siersema<sup>2</sup>, van Geenen E-JM<sup>2</sup>, Neuhaus H<sup>1</sup>, Beyna T<sup>1</sup>

**Institute** 1 Department of Gastroenterology and Therapeutic Endoscopy, Evangelisches Krankenhaus Düsseldorf, Düsseldorf, Germany; 2 Department of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, Netherlands

DOI 10.1055/s-0041-1724425

**Citation** Gerges C, Dertmann T, Schneider M et al. OP168 DIGITAL-SINGLE-OPERATOR PANCREATOSCOPY GUIDED LITHOTRIPSY FOR PANCREATIC DUCT STONES IN SYMPTOMATIC, TREATMENT REFRACTORY CHRONIC PANCREATITIS. LONG-TERM FOLLOW-UP ON CLINICAL, TECHNICAL SUCCESS AND QUALITY OF LIFE. *Endoscopy* 2021; 53: S68.

**Aims** Pancreatic duct (PD) stones in patients with chronic calcifying pancreatitis (CCP) often contribute to pain and have a negative impact on quality of life (QOL). Therefore pancreatic duct clearance and drainage is the main goal in surgical and interventional therapy strategies. Digital-single-operator-video-pancreatoscopy (d-SOVP) guided lithotripsy was shown to achieve very high

technical and clinical success rates(95%) in a short-term follow-up. However, there is only little evidence of long-term success or impact on quality of life.

**Methods** Retrospective analysis of all d-SOVP guided lithotripsies(n = 23) between 2015 and 2017 in 20 CCP patients. Persistence of technical success(ductal clearance) and clinical success(defined as pain reduction >50 % in numerical rating scale NRS) as well as post interventional QOL was determined by a systematic questionnaire(based on SF-12) regarding pain intensity and incidence, painkiller intake and impact on QOL after 3, 6, 12, 30 months in an ongoing follow up.

**Results** After 32-57 months(m=41 months) 80%(12 of 15) patients reported a significant decrease in pain and clinical symptoms(Mean NRS decreased from 6.1[±0.55] to 1.7[± 0.46], P<0.01; 80% clinical success rate). There was no need for further interventional therapy except of subsequent stenting in cases of persistent PD strictures(n = 4). Three patients(20%) reported persistent pain, 2 of them were referred for partial pancreatectomy and only one was pain-free after surgery. Regarding quality of life 80% of the patients described major improvements in their general health status and everyday life performance. Two patients were lost to follow-up, 3 patients died during follow up (mean age 76).

**Conclusions** D-SOVP guided lithotripsy is safe and effective, leading to a high ductal clearance and good clinical outcome. Beneficial effects on symptom control and quality of life seem to be persistent in the majority of CCP patients after a median 41 months follow-up, even in this selective, pre-treated patient group and are comparable to published ESWL results.

## OP169 ENDOSCOPIC VERSUS SURGICAL APPROACH TO THE MANAGEMENT OF PAIN IN CHRONIC PANCREATITIS: SYSTEMATIC REVIEW AND META ANALYSIS

**Authors** Ortiz Mendieta P<sup>1</sup>, Takamatsu Sagae VM<sup>1</sup>, Braga Ribeiro I<sup>1</sup>, Salomão Hirsch B<sup>1</sup>, Cury Vieira MV<sup>1</sup>, de Moura DTH<sup>1</sup>, Sánchez-Luna SA<sup>2</sup>, Marques Bernardo W<sup>1</sup>, Silva de Paula Rocha R<sup>1</sup>,

Arantes de Carvalho Visconti T<sup>1</sup>, Guimarães Hourneaux de Moura E<sup>1</sup>

**Institute** 1 Hospital das Clínicas da Faculdade de Medicina da USP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 Center for Advanced Therapeutic Endoscopy, Division of Gastroenterology, Hepatology and Nutrition, Pittsburgh, United States

DOI 10.1055/s-0041-1724426

**Citation:** Ortiz Mendieta PJ, Takamatsu Sagae VM, Braga Ribeiro I et al. OP169 ENDOSCOPIC VERSUS SURGICAL APPROACH TO THE MANAGEMENT OF PAIN IN CHRONIC PANCREATITIS: SYSTEMATIC REVIEW AND META ANALYSIS.

Endoscopy 2021; 53: S69.

**Aims** The formation of stones or stenosis in the main pancreatic duct are complications of chronic pancreatitis associated with pain, which has a great impact on the quality of life of the patient, leading to frequent hospital admissions. The objective of this study is to gather the evidence available in the literature comparing endoscopic and surgical therapy for its management.

**Methods** This systematic review was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-analyses) recommendations. We searched through MEDLINE, EMBASE, Cochrane CENTRAL, and Lilacs/Bireme databases with no restrictions regarding year of publication or language. Only Randomized Clinical Trials were selected comparing endoscopic and surgical therapy for pain relief in patients with chronic pancreatitis in middle and long term, complications and days of hospitalization. Risk of bias assessed using the Cochrane RoB 2 tool and the quality of evidence using the Grading of Recommendations Assessment, Development and Evaluation criteria (GRADE). Data extracted were meta-analyzed using RevMan software.

**Results** A total of 199 patients were evaluated in three Randomized Clinical Trials (99 in the endoscopy group and 100 in the surgery group), showing the following results: Complete pain relief: significant difference in long-term (16,4% vs 35.7%; p = 0.02), without statistical difference in middle term (17.5% vs 31.2%; p = 0.07). Partial pain relief: no statistical difference in middle term (17.5% vs 28.1%; p = 0.15) and long term (34% vs 41.1%; p = 0.42). Complications: no statistical difference in middle term (34.9% vs 29.7%; p = 0.50). Days of hospitalization: without significant difference in middle term (p = 0.21) (► **Table 1**).

**Conclusions** Surgery has better results than endoscopic therapy in terms of complete long-term pain relief. There is no difference in the meantime of hospitalization and complications.

► **Tab. 1** statistical analysis. RD: Risk Difference; CI: Confidence Interval; MD: Main difference.

OUTCOMES	OVERALL ANALYSIS	OUTCOMES	OVERALL ANALYSIS
<b>Complete pain relief middle term</b>	RD 0.14; 95% CI -0.01, 0.28; p = 0.07; I2 = 0%	<b>Complete pain relief long term</b>	RD 0.19; 95% CI 0.03, 0.35; p = 0.02; I2 = 0%
<b>Partial pain relief Middle term</b>	RD 0.11; 95% CI -0.04, 0.25; p = 0.15; I2 = 0%	<b>Partial pain relief long term</b>	RD 0.07; 95% CI -0.10, 0.24; p = 0.42; I2 0%
<b>Complications</b>	RD 0.05; 95% CI -0.10, 0.21; p = 0.50; I2 = 48%	<b>Days of hospitalization</b>	MD -1.02; 95% CI -2.61, 0.58; p = 0.21; I2 = 0%

## OP170V PER ORAL PANCREATICO SCOPY (POPS) ASSISTED RETRIEVAL OF DEEPLY MIGRATED PANCREATIC STENT

**Authors** Bapaye A<sup>1</sup>, Gandhi A<sup>1</sup>, Pujari R<sup>1</sup>, Bapaye H<sup>2,1</sup>,

**Institute** 1 Deenanath Mangeshkar Hospital & Research Center, Shivanand Desai Center for Digestive Disorders, Pune, India; 2 Byramjee Jeejeebhoy Medical College, Pune, India

DOI 10.1055/s-0041-1724427

**Citation:** Bapaye A, Gandhi A, Pujari R et al. OP170V PER ORAL PANCREATICO SCOPY (POPS) ASSISTED RETRIEVAL OF DEEPLY MIGRATED PANCREATIC STENT. Endoscopy 2021; 53: S69.

**Introduction** Pancreatic stent migration - rare complication following pancreatic endotherapy. Retrieval is technically challenging. Video demonstrates Per-Oral PancreaticScopy assisted retrieval of migrated Pancreatic stent.

**Patient and methods** 29y F, Chronic Pancreatitis, persistent pain -7Fr. Pancreatic stent inserted 6 months back - follow up – stent migration – failed attempts at removal – failure to retrieve by retrieval basket, stent retriever and extractor balloon – successfully retrieved using POPS assisted technique.

**Results** Deeply migrated pancreatic stent, with prior failed attempts at retrieval using extractor balloon and retrieval basket, was successfully retrieved using POPS.

**Conclusions** This video demonstrates successful retrieval of migrated Pancreatic stent using POPS assisted technique.

## OP171 ENDOSCOPIC INTERVENTIONS FOR TREATMENT OF PANCREATIC ASCITES- SIX YEARS SINGLE CENTER EXPERIENCE

**Authors** Karagyzov P<sup>1,1</sup>, Mitova V<sup>1</sup>, Tishkov I<sup>1</sup>, Boeva I<sup>1</sup>, Dobрева I<sup>1</sup>

**Institute** 1 Acibadem City Clinic Tokuda Hospital, Interventional Gastroenterology, Sofia, Bulgaria

**DOI** 10.1055/s-0041-1724428

**Citation:** Karagyzov P, Mitova V, Tishkov I et al. OP171 ENDOSCOPIC INTERVENTIONS FOR TREATMENT OF PANCREATIC ASCITES- SIX YEARS SINGLE CENTER EXPERIENCE. *Endoscopy* 2021; 53: S70.

**Aims** We aimed to retrospectively analyze the data on all patients, admitted in our unit, with clinically significant pancreatic ascites over a six-year period.

**Methods** All patients with clinically significant pancreatic ascites for at least 2 weeks, hospitalized in our unit were included. All had paracentesis performed and ascitic fluid analysis demonstrated high protein-, amylase- and lipase-levels. In all patients endoscopic therapy was attempted and analyzed in terms of technical success, clinical success, complications, ascites resolution and recurrence.

**Results** Between 2014 and 2020 20 patients with pancreatic ascites were admitted in our unit. 15 of them had chronic pancreatitis. Ascites was a complication of severe acute pancreatitis in the late phase in 2. One patient had pancreatic trauma, one patient developed ascites after surgical biopsy of the pancreas, in one case pancreatic ascites developed after EUS- fine needle biopsy of a pancreatic head mass. Endoscopic interventions were technically successful in 19/20 patients. Pancreatic sphincterotomy followed by stenting of the main pancreatic duct was performed in 13 patients, pancreatic sphincterotomy alone in one, EUS guided drainage of peripancreatic fluid collection alone in one patient, combination of transpapillary stenting and EUS-guided transmural drainage in 2 patients, combination of EUS-guided transgastric drainage of peripancreatic fluid collection and EUS-guided pancreaticogastrostomy in one patient. Only one patient developed complication- sepsis due to infection of residual fluid collections, resolved with antibiotic therapy. Complete resolution of ascites occurred in all patients after successful endoscopic procedure. No recurrence was detected after a median follow up of 1 year (between 3 months and 4 years). No patient died.

**Conclusions** Endoscopic therapy is highly effective and safe in patients with pancreatic ascites. Depending on the clinical scenario, various combinations of different endoscopic modalities improve the outcome without increasing the rate of adverse events.

## OP172 FISTULIZING PANCREATIC DUCT LEAKAGE IN PATIENTS WITH CHRONIC PANCREATITIS: A RETROSPECTIVE CASE SERIES EMPHASIZING THE IMPORTANCE OF A MULTIMODAL APPROACH

**Authors** Roug S<sup>1</sup>, Novovic S<sup>1</sup>, Feldager E<sup>1</sup>, Schmidt PN<sup>1</sup>, Jørgensen HL<sup>2,3</sup>, Karstensen JC<sup>1,3</sup>

**Institute** 1 Hvidovre Hospital, Pancreatic Center East, Gastroint, Hvidovre, Denmark; 2 Department of Clinical Biochemistry, Hvidovre Hospital, Hvidovre, Denmark; 3 Department of Clinical Medicine, University of Copenhagen, Copenhagen N, Denmark

**DOI** 10.1055/s-0041-1724429

**Citation:** Roug S, Novovic S, Feldager E et al. OP172 FISTULIZING PANCREATIC DUCT LEAKAGE IN PATIENTS WITH CHRONIC PANCREATITIS: A RETROSPECTIVE CASE SERIES EMPHASIZING THE IMPORTANCE OF A MULTIMODAL APPROACH. *Endoscopy* 2021; 53: S70.

**Aims** In patients with chronic pancreatitis, pancreatic duct leakage resulting in pancreatogenic pleural effusion and pancreatogenic ascites may be associated with prolonged disease course and serious complications. The primary

endpoint was to assess the efficacy of multimodal treatment and further evaluate the safety of endoscopic treatment.

**Methods** In a retrospective design, consecutive patients with chronic pancreatitis with amylase content greater than 250 U/L in either ascites or pleural effusion treated from 2011 to 2020 were identified.

**Results** Twenty-two patients (18 males, median age 60, median ASA-score 3) were identified.

Endoscopic retrograde pancreatography (ERP) with transpapillary stenting of the main pancreatic duct (MPD) was performed in 19 patients (86%). Pancreatic sphincterotomy was performed in eight patients (42%). Three patients (16%) had extracorporeal shock wave lithotripsy (ESWL) due to stone in the MPD. Drainage of a peripancreatic fluid collection was done transgastric (n=3) (16%), percutaneous (n=4)(21%), and in a combination (n=2)(11%). One patient (5%) was referred for a distal pancreatectomy. Eight patients (42%) were treated with somatostatin analogues, parenteral nutrition, and "nil per mouth" for a median period of 7 days (range 4-15).The remaining three out of 22 patients (14%) were treated without ERP in a combination of ESWL (n=2), PCD of a PPFC (n=1) and endoscopic drainage of a PPFC (n=1).Twenty-two patients (100%) had resolution of both ascites and pleural effusion. Seventeen patients (77%) were without stent after a median of five endoscopic procedures (range 2-10) performed during a median of 10 months (range 1-55). None of the 17 patients had re-interventions during a further median 34 months (range 3-99). Five patients (23%) had a stent in DP after a median of two endoscopic procedures (range 1-10) during a median of 12 months (range 1-14).

**Conclusions** Multimodal treatment of fistulizing pancreatic duct leakage is successful with a minimal need of surgical interventions.

### ► Tab. 1

#### Adverse event (n = 5) 26 %

Post-ERCP AP (n = 2)

Perforation of duodenal bulb (n = 2)

Retained fragment (n = 1)

Saturday, 27 March 2021

10:00 – 10:45

Can we still improve EUS diagnostic accuracy?

Room 6

## OP173 ROLE OF FLUORESCENCE CONFOCAL MICROSCOPY FOR RAPID EVALUATION OF ENDOSCOPIC ULTRASOUND FINE NEEDLE BIOPSY IN PANCREATIC SOLID LESIONS

**Authors** Stigliano S<sup>1</sup>, Biasutto D<sup>1</sup>, Di Matteo FM<sup>1</sup>

**Institute** 1 Campus Bio-Medico University, Rome, Italy

**DOI** 10.1055/s-0041-1724430

**Citation:** Stigliano S, Biasutto D, Di Matteo FM OP173 ROLE OF FLUORESCENCE CONFOCAL MICROSCOPY FOR RAPID EVALUATION OF ENDOSCOPIC ULTRASOUND FINE NEEDLE BIOPSY IN PANCREATIC SOLID LESIONS. *Endoscopy* 2021; 53: S70.

**Aims** Endoscopic ultrasound fine needle biopsy (EUS FNB) is the standard procedure for the diagnosis of pancreatic lesions. Fluorescence Confocal microscopy (FCM) allows imaging of tissues in the fresh state, requiring minimal preparation without damage or loss of tissue. FCM could provide rapid information about the adequacy of the sample obtained during EUS-FNB with minimal preparation obviating at the unavailability of rapid onset evaluation (ROSE) and reducing the number of needle passes with the risk of adverse events. No

data exists on FCM in the field of micro-histological specimens. We aimed to assess the diagnostic performance of FCM in predicting histological adequacy of EUS-FNB samples in pancreatic solid lesions and to assess the agreement between FCM evaluation and final histology.

**Methods** Single centre prospective study on consecutive patients with pancreatic lesions receiving EUS-FNB. Obtained samples have been evaluated at FCM and classified as “Inadequate” or “Adequate” (Benign; Suspicious; Malignant). The Kappa test was used to quantify agreement. The diagnostic accuracy of FCM was assessed. A  $p < 0.05$  considered statistically significant.

**Results** From April 2020 to September 2020, 81 patients have been enrolled. In all cases FCM showed the macro image of the sample and created a digital image. The 92.6% of sample was defined adequate at the FCM evaluation and it was confirmed at histopathology. The final histological diagnosis was 8% benign, 17.3% atypical/suspicious and 74.7% malignant with satisfactory agreement with the FCM evaluation (kappa Cohen’s coefficient 0.95 95% CI 0.89-1.01  $p = 0.001$ ). The sensitivity of the FCM evaluation was 100% (95% CI 95-100%), specificity 66.7% (95% CI 22.3-95.7%) accuracy 97% (95% CI 90.7-99.7%), PPV 97 (95% CI 91.8-99%) and NPV 100%.

**Conclusions** FCM represents a new technique successfully applicable to micro-histological specimens. It provides fast information about sample adequacy in small specimens with good agreement with the final histology.

## OP174 APPLICATION OF ARTIFICIAL INTELLIGENCE FOR REAL-TIME ANATOMICAL RECOGNITION DURING ENDOSCOPIC ULTRASOUND EVALUATION: A PILOT STUDY

**Authors** Robles-Medrandá C<sup>1</sup>, Oleas R<sup>1</sup>, Del Valle R<sup>1</sup>, Mendez JC<sup>2</sup>, Alcivar-Vasquez J<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute** 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador; 2 MD Consulting Group, Guayaquil, Ecuador

**DOI** 10.1055/s-0041-1724431

**Citation:** Robles-Medrandá C, Oleas R, Del Valle R et al. OP174 APPLICATION OF ARTIFICIAL INTELLIGENCE FOR REAL-TIME ANATOMICAL RECOGNITION DURING ENDOSCOPIC ULTRASOUND EVALUATION: A PILOT STUDY. *Endoscopy* 2021; 53: S71.

**Aims** We aimed to develop an artificial intelligence model that recognizes in real-time the anatomical structures during EUS evaluations.

**Methods** A single-center, pilot study. We developed two convolutional neural networks from linear and radial endoscopic ultrasound videos from patients without pathologies. The AI models were developed using an automated machine learning software (AI Works, MD Consulting group, Ecuador). Two expert endosonographers trained the two independent models. The linear and radial EUS algorithms metrics were calculated for recognizing anatomical structures during EUS evaluations.

**Results** We included eight anatomical structures from twelve endoscopic ultrasound videos for the development of the EUS-AI algorithms. A total of 8113 samples were captured from the EUS videos (6354 for radial and 1759 for linear). The anatomical structures were recognized and labeled for the training of the AI models by two experts endosonographers ( $\geq 300$  EUS/year). The proposed EUS Radial model reached a mean average precision (mAP) of 69.67%, F1-score (harmonic mean of sensitivity and precision) of 92%, average IoU (overall between model prediction and expert marking) of 79.08%, with a total loss of 0.13. The developed EUS Linear model reached an mAP of 83.43%, F1-score of 89%, average IoU of 73.48%, with a total loss of 0.16. Two expert endosonographers evaluated the AI models for the recognition of anatomical structures in twenty-five cases that accurately recognized in real-time all the trained anatomical structures.

**Conclusions** The proposed artificial intelligence models for linear and radial EUS recognizes and identifies the trained anatomical structures during real-time EUS evaluations. The proposed model could be implemented for the training in EUS, probably reducing the time and number of cases required for achieving competency.

## OP175 CONTRAST-ENHANCED HARMONIC ENDOSCOPIC ULTRASOUND (CH-EUS)-GUIDED FINE-NEEDLE ASPIRATION VERSUS STANDARD FINE-NEEDLE ASPIRATION IN PANCREATIC MASSES: A META-ANALYSIS

**Authors** Facciorusso A<sup>1</sup>, BP Mohan<sup>2</sup>, SF Crinò<sup>3</sup>, Ofoosu A<sup>4</sup>, Ramai D<sup>5</sup>, Lisotti A<sup>6</sup>, Chandan S<sup>7</sup>, Fusaroli P<sup>6</sup>

**Institute** 1 University of Foggia, 1Department of Surgical and Medical Sciences, Foggia, Italy; 2 University of Utah Health, Gastroenterology and Hepatology, Salt Lake City, United States; 3 University Hospital of Verona, Department of Medicine, Gastroenterology and Digestive Endoscopy Unit, Verona, Italy; 4 Stanford University School of Medicine, Division of Gastroenterology and Hepatology, Stanford, United States; 5 Brooklyn Hospital Medical Center, Gastroenterology and Hepatology, Brooklyn, United States; 6 University of Bologna, Hospital of Imola, Imola, Italy; 7 CHI Health Creighton University Medical Center, Gastroenterology Unit, Omaha, United States

**DOI** 10.1055/s-0041-1724432

**Citation:** Facciorusso A, Mohan BP, Crinò SF et al. OP175 CONTRAST-ENHANCED HARMONIC ENDOSCOPIC ULTRASOUND (CH-EUS)-GUIDED FINE-NEEDLE ASPIRATION VERSUS STANDARD FINE-NEEDLE ASPIRATION IN PANCREATIC MASSES: A META-ANALYSIS. *Endoscopy* 2021; 53: S71.

**Aims** It is still unclear whether endoscopic ultrasound (EUS) contrast-enhanced Harmonic fine-needle aspiration (CH-EUS-FNA) determines superior results in comparison to standard EUS-FNA in tissue acquisition of pancreatic masses. The aim was to compare the pooled diagnostic performances of these two techniques.

**Methods** A systematic electronic search through PubMed/Medline and Embase database at the end of October 2020 was performed; all original articles dealing with the comparison of the diagnostic performance between CH-EUS-FNA and EUS-FNA were included. The primary outcome was diagnostic sensitivity; secondary outcomes included specificity, accuracy, sample adequacy, and number of needle passes. We performed pairwise meta-analysis through a random effects model and expressed data as odds ratio (OR) and 95% confidence interval (CI).

**Results** Six studies (2 randomized controlled trials) have been identified; study outcomes were reported in the ► **table**. Pooled diagnostic sensitivity was 84.6% (95% CI 80.7-88.6%) with CH-EUS-FNA and 75.3% (67.0-83.5%) with EUS-FNA, with evidence of a significant superiority of the former (OR 1.74, 95% CI 1.26-2.40;  $p < 0.001$ ). Subgroup analysis confirmed the superiority of CH-EUS-FNA over EUS-FNA only in larger lesions (OR 2.38, 1.33-4.25 with the cut-off of 1.5 cm and OR 2.18, 1.12-3.01 with the cut-off of 2 cm). Pooled diagnostic sensitivity of CH-EUS-FNA was 86.2% (79.7-92.7%) in hypoenhanced and 89.4% (82.8-96.0%) in iso/hyperenhanced lesions ( $p = 0.23$ ). Pooled diagnostic accuracy was 88.8% (85.6-91.9%) in CH-EUS-FNA group and 83.6% (79.4-87.8%) in EUS-FNA group (OR 1.52, 1.01-2.31;  $p = 0.05$ ). Pooled sample adequacy was 95.1% (91.1-99.1%) with CH-EUS-FNA and 89.4% (81.0-97.8%) with EUS-FNA (OR 2.40, 1.38-4.17;  $p = 0.02$ ). No difference in terms of number of needle passes was observed (mean difference: -0.10, -0.28 to 0.08;  $p = 0.29$ ).

**Conclusions** CH-EUS-FNA seems to be superior to standard EUS-FNA in patients with pancreatic masses. Further trials are needed to confirm these results.



▶ Tab. 1

	No of studies analyzed No. in CH-EUS-FNA group No. in EUS-FNA group	Summary estimate (95 % CI) Pooled rate (95 % CI)	P-value <sup>2</sup> % heterogeneity
Sensitivity	6 studies;CH-EUS-FNA: 473 pts EUS-FNA: 520 pts	OR=1.74 (1.26-2.40)CH-EUS-FNA: 84.6 % (80.7-88.6 %) EUS-FNA: 75.3 % (67.0-83.5 %)	p<0.001; 0 %
Specificity	6 studies;CH-EUS-FNA: 473 pts EUS-FNA: 520 pts	OR = 1.00 (0.9-1.01)CH-EUS-FNA: 100 % EUS-FNA: 100 %	p= 1.0; 0 %
Diagnostic accuracy	5 studies;CH-EUS-FNA: 380 pts EUS-FNA: 427 pts	OR=1.52 (1.01-2.31)CH-EUS-FNA: 88.8 % (85.6-91.9 %) EUS-FNA: 83.6 % (79.4-87.8 %)	p= 0.05; 0 %
Sample adequacy	5 studies;CH-EUS-FNA: 325 pts EUS-FNA: 372 pts	OR=2.40 (1.38-4.17)CH-EUS-FNA: 95.1 % (91.1-99.1 %) EUS-FNA: 89.4 % (81-97.8 %)	p=0.02; 0 %

## OP176 HYPERVASCULAR PANCREATIC LESIONS ON CONTRAST-ENHANCED EUS: BEYOND NEUROENDOCRINE TUMORS

**Authors** Cazacu IM<sup>1,2</sup>, Cherciu Harbiyeli IF<sup>1</sup>, Constantin A<sup>3</sup>, Copaescu C<sup>3</sup>, Tomulescu V<sup>3</sup>, Bejinariu N<sup>4</sup>, Surlin V<sup>5</sup>, Stroescu C<sup>6</sup>, Popescu C<sup>1</sup>, Saftoiu A<sup>1</sup>

**Institute** 1 Research Center of Gastroenterology and Hepatology, University of Medicine and Pharmacy Craiova, Craiova, Romania; 2 Fundeni Clinical Institute, Bucharest, Romania; 3 Ponderas Academic Hospital, Bucharest, Romania; 4 Santomar Onco Diagnostic, Cluj-Napoca, Romania; 5 Department of Surgery, University of Medicine and Pharmacy of Craiova, Craiova, Romania; 6 Center of General Surgery and Transplant, "Sf. Maria" Clinical Hospital, Bucharest, Romania

DOI 10.1055/s-0041-1724433

**Citation:** Cazacu IM, Cherciu Harbiyeli IF, Constantin A et al. OP176 HYPERVASCULAR PANCREATIC LESIONS ON CONTRAST-ENHANCED EUS: BEYOND NEUROENDOCRINE TUMORS. *Endoscopy* 2021; 53: S72.

**Aims** Although pancreatic neuroendocrine tumors (PNETs) typically have a solid, hypervascular appearance on contrast-enhanced endoscopic ultrasound (CE-EUS), other non-PNET lesions may have a similar appearance. It is important to discriminate hypervascular pancreatic lesions because of different treatment option and prognosis. With this background, we decided to review our single-center experience with regard to hypervascular pancreatic lesions on CE-EUS.

**Methods** Patients from our institutional database who underwent EUS evaluation of a pancreatic lesion and had a hyperenhanced appearance on CE-EUS

were retrieved. Microvascularization of the tumor was evaluated over 2 min during CE-EUS after intravenous injection of 4.8 mL SonoVue. Final diagnosis was based on histopathology of surgical specimens or EUS-guided tissue acquisition and clinical follow-up.

**Results** Between 2007 and 2020, 77 patients with hypervascular pancreatic lesions on CE-EUS were identified. Final pathology revealed PNET in 34 (44%) and a non-PNET diagnosis in 43 (66%). Of patients with a diagnosis of PNET, the lesion on EUS was solid in 31 (91%) and cystic in 3 (9%). Hypervascular solid lesions were also identified in 43 non-PNET patients with a final diagnosis of focal pancreatitis (25), solid pseudopapillary tumor (5), pancreatic metastases (6), pancreatic ductal adenocarcinoma (3), acinar cell carcinoma (1) and lymphoma (3). There were no significant differences in age, gender, tumor size, tumor location, pancreatic or biliary duct dilation, or contrast enhancement patterns (homogenous vs heterogeneous) between patients with PNET vs non-PNET diagnoses. All patients with hypervascular pancreatic lesions have undergone EUS-FNA/FNB with an overall diagnostic accuracy of 90%.

**Conclusions** Several other benign and malignant non-PNET diagnoses may have a hypervascular appearance on CE-EUS. EUS-FNA and additional diagnostic modalities should be routinely performed to confirm a diagnosis prior any therapeutic decision.

## OP177 ACCURACY OF ENDOSCOPIC ULTRASOUND (EUS)-ELASTOGRAPHY IN THE DIAGNOSIS OF PATIENTS WITH EARLY CHANGES OF CHRONIC PANCREATITIS

**Authors** Iglesias-Garcia J<sup>1</sup>, Lariño-Noia J<sup>1</sup>, De la Iglesia-Garcia D<sup>1</sup>, Nieto L<sup>1</sup>, Leal-Lopez S<sup>1</sup>, Lojo S<sup>2</sup>, Dominguez-Muñoz JE<sup>1</sup>

**Institute** 1 Santiago de Compostela, Gastroenterology and Hepatology, Santiago de Compostela, Spain; 2 Santiago de Compostela, Laboratory, Santiago de Compostela, Spain

DOI 10.1055/s-0041-1724434

**Citation:** Iglesias-Garcia J, Lariño-Noia J, De la Iglesia-Garcia D et al. OP177 ACCURACY OF ENDOSCOPIC ULTRASOUND (EUS)-ELASTOGRAPHY IN THE DIAGNOSIS OF PATIENTS WITH EARLY CHANGES OF CHRONIC PANCREATITIS. *Endoscopy* 2021; 53: S72.

**Aims** Evaluate the accuracy of EUS-elastography for the diagnosis of early CP using the ePFT as reference in patients with suspected early CP. Correlation between the degree of pancreatic fibrosis and pancreatic secretion of bicarbonate was also evaluated.

**Methods** Prospective, cross sectional and observational study. Patients with clinical suspicion of CP and 3-4 EUS criteria of the disease were included. EUS was performed with the slim Pentax Echoendoscope (EG-3270UK) and the HITACHI-Ascendus. Elastographic strain ratio (SR) was evaluated as the mean SR at the head, body and tail of the pancreas. 0.2µg/kg secretin was intravenously administered and bicarbonate concentration was measured in samples of duodenal juice collected at 15, 30 and 45 minutes (normal peak>80 mEq/L). Data are shown as mean±SD and percentages. Diagnostic accuracy of EUS-elastography based on SR for the diagnosis of CP was calculated after drawing the ROC curves, using ePFT as reference method. SR cut-off supporting the diagnosis of early CP was calculated. Correlation between SR and bicarbonate peak was calculated by linear regression analysis.

**Results** 62 patients were included (mean age 39.9 years, range 18-66, 22 female). Study could be completed in 61 patients. 39 patients (63.9%) presented 3 EUS criteria for CP, and 22 (36.1%) presented 4 criteria. Peak bicarbonate concentration was 63.8±23.6 mEq/L, and it was abnormally low in 50 (81.9%) patients. SR was 3.85±1.24 and it was abnormally high in all patients. ROC analysis yielded an AUC of 0.991 (95%CI 0.977-1.00). The optimal cut-off of SR for the diagnosis of early CP was 2.88. Sensitivity, specificity and overall accuracy was 92%, 100% and 93.4%

respectively. Correlation between SR and bicarbonate secretion was highly significant ( $r=0.715$ ,  $p<0.0001$ ).

**Conclusions** EUS-E can be considered as an accurate method for the diagnosis of early CP, showing a very good correlation with the pancreatic secretion.

Saturday, 27 March 2021

11:00 – 11:45

Pushing the boundaries of endoscopic imaging:

Can we still do better?

Room 5

## OP178 IDENTIFICATION OF DYSPLASIA IN THE BARRETT'S ESOPHAGUS USING AN ENDOCYTOSCOPY CLASSIFICATION SYSTEM: PRELIMINARY RESULTS OF A PROSPECTIVE COMPARISON BETWEEN CLINICIANS AND ARTIFICIAL INTELLIGENCE

**Authors** van der Laan JJH<sup>1</sup>, van der Putten JA<sup>2</sup>, Zhao X<sup>1</sup>, Schmidt I<sup>1</sup>, Gabriëls RY<sup>1</sup>, Karrenbeld A<sup>3</sup>, Peters FTM<sup>1</sup>, Westerhof J<sup>1</sup>, Van der Sommen F<sup>2</sup>, Nagengast WB<sup>1</sup>

**Institute** 1 University Medical Center Groningen, Gastroenterology and Hepatology, Groningen, Netherlands; 2 Eindhoven University of Technology, Electrical Engineering, Video Coding & Architectures, Eindhoven, Netherlands; 3 University Medical Center Groningen, Pathology, Groningen, Netherlands

DOI 10.1055/s-0041-1724435

**Citation:** van der Laan JJH, van der Putten JA, Zhao X et al. OP178 IDENTIFICATION OF DYSPLASIA IN THE BARRETT'S ESOPHAGUS USING AN ENDOCYTOSCOPY CLASSIFICATION SYSTEM: PRELIMINARY RESULTS OF A PROSPECTIVE COMPARISON BETWEEN CLINICIANS AND ARTIFICIAL INTELLIGENCE. *Endoscopy* 2021; 53: S73.

**Aims** To investigate the feasibility of endocytoscopy (EC) in differentiating dysplastic from non-dysplastic tissue in the Barrett's esophagus (BE) in vivo, performance of clinicians and a computer-aided diagnosis (CADx) algorithm were assessed and compared with each other. Ultimately, the potential of the implementation of CADx will be determined during a test in which clinicians can use the help of the CADx.

**Methods** We performed endocytoscopy prospectively in BE patients; areas of interest were videotaped using EC and included for analysis if frames were classifiable and could be correlated to histology of targeted biopsies. An EC classification system for the BE was developed that differentiated BE metaplasia from BE neoplasia. Online training and examination modules were designed for clinicians (5 BE experts, 5 gastroenterologists and 5 residents) and scored. Finally, a convolutional neural network was trained on the collected frames and tested on a separate test set.

**Results** Endocytoscopy was performed in 52 BE patients. We selected 728 metaplastic and 824 dysplastic images from 20 patients for training of CADx. Accuracy, sensitivity and specificity of clinicians before training ( $n=14$ ) were 62.6%, 56.2% and 70.6% and after training ( $n=14$ ) were 78.6% ( $P<0.05$ ), 86.2% ( $P<0.05$ ) and 69.5% ( $P>0.05$ ) respectively. After an interval of at least two weeks, their ( $n=9$ ) accuracy and sensitivity significantly decreased to 73.0% and 75.6%. The average accuracy, sensitivity and specificity of the algorithm on image basis over 5 runs were 79.6%, 85.3% and 74.0%, respectively.

**Conclusions** EC allows in vivo discrimination of metaplastic and dysplastic BE tissue. Interpretation is however not straightforward for clinicians and requires training and maintenance. AI shows promising performance in analyzing EC images and can enable highly accurate diagnosis. This could help facilitate generalization of EC in clinical practice.

## OP179 CHROMOENDOSCOPY USING BLUE LASER IMAGING IN THE PREDICTION OF SUBMUCOSAL INVASION IN COLORECTAL NEOPLASTIC LESIONS

**Authors** Estorninho J<sup>1</sup>, Gravito-Soares E<sup>1,2</sup>, Amaro P<sup>1</sup>, Figueiredo P<sup>1,2</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology Department, Coimbra, Portugal; 2 University of Coimbra, Faculty of Medicine, Coimbra, Portugal

DOI 10.1055/s-0041-1724436

**Citation:** Estorninho J, Gravito-Soares E, Amaro P et al. OP179 CHROMOENDOSCOPY USING BLUE LASER IMAGING IN THE PREDICTION OF SUBMUCOSAL INVASION IN COLORECTAL NEOPLASTIC LESIONS. *Endoscopy* 2021; 53: S73.

**Aims** Endoscopic diagnosis of submucosal invasion allows an optimized treatment strategy for colorectal polyps. Virtual chromoendoscopy, namely with Narrow Band Imaging, can help to predict the presence and depth of submucosal invasion. Data regarding Blue Laser Imaging (BLI) for predicting deep submucosal invasive carcinoma (dSMC) are still missing. The present research aimed to evaluate the diagnostic performance of endoscopic classifications when using BLI.

**Methods** Consecutive nonpedunculated colorectal lesions sized  $\geq 20$ mm were prospectively evaluated by 1-2 expert(s) gastroenterologist(s) using high-definition colonoscopy with BLI, without magnification. Paris, Lateral Spreading Tumors (LST), Kudo pit pattern and Japan NBI Expert Team (JNET) classifications were applied and correlated with histopathology after endoscopic and/or surgical resection.

**Results** Ninety-six lesions were included (86 patients, median age 69-years-old [IQR:64-76]), median size 30mm (IQR:20-45), consisting of: 6 (6.3%) sessile serrated polyps; 54 (56.2%) low-grade dysplasia; 27 (28.1%) high-grade dysplasia (HGD)/intramucosal carcinoma (imC)/superficial submucosal carcinoma (sSMC); and 9 (9.4%) dSMC.

Eighty-eight lesions were resected by EMR (19 *en bloc*). Three patients underwent hybrid endoscopic submucosal dissection and 9 colorectal surgery (5 *ab initio*; 4 after non-curative endoscopic resection). The accuracy, sensitivity, specificity, positive predictive value and negative predictive value of JNET-Type 3 for dSMC was 95.8%, 55.6%, 100%, 100% and 95.6%, respectively, with an area under the ROC curve (AUROC) of 0.78 (95%CI 0.57-0.99); of JNET-Type 2b for HGD/imC/sSMC was 67.1%, 26.9%, 92.8%, 58.3% and 77.4%, respectively; of Kudo V for dSMC was 88.5%, 100%, 87.4%, 45% and 100%, respectively, with an AUROC of 0.94 (95% CI 0.89-0.99)).

**Conclusions** JNET classification using BLI was as effective as original JNET for dSMC diagnosis. Kudo pit pattern estimated dSMC risk with high accuracy, even without magnification. Advanced imaging with BLI allows to establish the indication for endoscopic resection with high accuracy, being less effective in decision-making on which resection technique to use (*en bloc* versus piecemeal).

## OP180 ULTRA-HIGH MAGNIFICATION ENDOCYTOSCOPY TO DEFINE DEEP ENDOCOPIC AND HISTOLOGIC REMISSION IN ULCERATIVE COLITIS

**Authors** Iacucci M<sup>1,2,3</sup>, Nardone OM<sup>1</sup>, Bazarova A<sup>4</sup>, Jeffery L<sup>1</sup>, Acharjee A<sup>5</sup>, Smith SC<sup>1</sup>, Shivaji UN<sup>1</sup>, Cannatelli R<sup>1</sup>, Gkoutos G<sup>5</sup>, Ghosh S<sup>1,2,3</sup>

**Institute** 1 University of Birmingham, Immunology and Immunotherapy, Birmingham, United Kingdom; 2 University Hospitals Birmingham NHS Trust, NIHR Wellcome Trust Clinical Research Facilities, Birmingham, United Kingdom; 3 University of Birmingham and University Hospitals Birmingham NHS Foundation Trust, NIHR Biomedical Research Centre, Birmingham, United Kingdom

Kingdom; 4 University of Cologne, Cologne, Germany; 5 University of Birmingham, Institute of Cancer and Genomic Sciences, Birmingham, United Kingdom

DOI 10.1055/s-0041-1724437

**Citation:** Iacucci M, Nardone OM, Bazarova A et al. OP180 ULTRA-HIGH MAGNIFICATION ENDOCYTOSCOPY TO DEFINE DEEP ENDOSCOPIC AND HISTOLOGIC REMISSION IN ULCERATIVE COLITIS. *Endoscopy* 2021; 53: S73.

**Aims** Increasingly both endoscopic remission (ER) and histological remission (HR) are targets of therapy in ulcerative colitis (UC). We aimed to define deep remission in patients with UC by assessing cellular architecture and the correlation with endoscopic scores by using ultra-high-magnification endocytoscopy (ECS) and histological indices.

**Methods** We conducted a prospective study enrolling 29 UC patients (18 males, mean age 41y) referred for assessing ER. All patients underwent colonoscopies with 520-fold magnification endocytoscopy using methylene blue spray (0.1%). The inflammatory activity was scored using the Mayo Endoscopic Score (MES). ER was defined as MES 0. To assess the grade of inflammation using ECS we adapted an ECS score (ECSS) summarized in ► **table 1**. Targeted biopsies were taken and scored according to Nancy Histopathological Index (NHI) and Roberts Histopathological Index (RHI). HR was defined as NHI ≤ 1, and RHI ≤ 3 without neutrophils in the epithelium and lamina propria. The accuracy and the correlation between ECSS and MES with histological scores were determined.

**Results** ECSS correlated strongly with RHI ( $r=0.89$  [95% CI 0.51- 0.98] and NHI ( $r=0.86$  [95% CI 0.42- 0.98] but poorly with MES ( $r=0.28$  [95% CI 0.27 - 0.70]). We analysed the diagnostic accuracy of ECSS for predic-

ting HR. The best value of ECSS total score was  $\leq 3$  for predicting HR by RHI with an AUROC 0.81 (95%CI:0.66-0.97), specificity 0.89 (95%CI:0.52-1), sensitivity 0.62 (95%CI:0.31-0.86) and an accuracy 0.80 (95%CI:0.57-0.87). Similarly, an ECSS total score  $\leq 3$  was the best cut-off for predicting HR defined by NHI with an AUROC of 0.77(95%CI:0.59-0.95), specificity of 0.86 (95%CI:0.43-1), sensitivity of 0.64 % (95%CI:0.27-0.91), and an accuracy of 0.80 % (95%CI:0.49- 0.90). Distance between crypts predicted HR best.

**Conclusions** ECS represents a reliable tool that may sit between endoscopy and histology but closer to the latter and may help in defining HR using endoscopic assessment.

## OP181 CONFOCAL LASER ENDOMICROSCOPY REVEALS DIFFERENTIAL RESPONSE IN PATIENTS WITH ACTIVE ULCERATIVE COLITIS UNDERGOING ANTI-INTEGRIN COMPARED TO ANTI-TNF-ALPHA THERAPY

**Authors** Ellrichmann M<sup>1</sup>, Schulte B<sup>1</sup>, Bethge J<sup>1</sup>, Nikolaus S<sup>1</sup>, Aden K<sup>1</sup>, Schreiber S<sup>1</sup>

**Institute 1** University Medical Center Schleswig-Holstein, Campus Kiel, Interdisciplinary Endoscopy, Medical Department 1, Kiel, Germany

DOI 10.1055/s-0041-1724438

**Citation:** Ellrichmann M, Schulte B, Bethge J et al. OP181 CONFOCAL LASER ENDOMICROSCOPY REVEALS DIFFERENTIAL RESPONSE IN PATIENTS WITH ACTIVE ULCERATIVE COLITIS UNDERGOING ANTI-INTEGRIN COMPARED TO ANTI-TNF-ALPHA THERAPY. *Endoscopy* 2021; 53: S74.

**Aims** Mucosal healing is the central goal of therapy in ulcerative colitis (UC) but is only based on superficial criteria that do not allow assessment of early therapy response. Confocal Laserendomicroscopy(CLE) enables visualisation of dynamic changes of the mucosa and might reliably exhibit very early changes of the architecture. To evaluate CLE for dynamic quantification of the level of inflammation in UC patients undergoing biological therapy (Vedolizumab(VDO) or Infliximab(IFX)) as a marker for early therapy response.

**Methods** 90 patients(54m) with active UC underwent probe based CLE (Cellvizio) in the sigmoid at baseline/2/4/6/14 weeks(wk) after initiation of therapy with IFX(N=46) or VDO(N=44). CLE criteria were: Mucosal barrier dysfunction, vascular alteration, changes of crypt architecture. Data were correlated to eMayo scores and histological activity indices.

**Results** Response to therapy was achieved in 73.9% of IFX and 70.5% of VDO patients. At baseline, fluorescein accumulated in the mucosa after  $8.9 \pm 6.1$ sec, in patients with later response to therapy time to accumulation significantly decelerated within 2 wk to  $14.8 \pm 5.2$ sec, without response  $9.6 \pm 5.4$ sec.;  $p=0.03$ . Capillary diameters were dilated up to  $16.3 \pm 3.2 \mu\text{m}$  prior to therapies, but decreased in case of therapy response by 20.2% ( $13.65 \pm 3.2 \mu\text{m}$ ,  $p=0.001$ ) within 2 wk. Crypts were significantly enlarged up to a diameter of  $114.1 \pm 21.2 \mu\text{m}$  at baseline and showed a significant shrinkage in response to therapy ( $92.9 \pm 12.3 \mu\text{m}$ ;  $p=0.01$ ). Endoscopic Mayo score revealed no differences at wk 2 between responders/non-responders. CLE changes were markedly higher in the IFX group compared to the VDO groups after 2 wk of treatment. Thereafter, no significant changes were observed between the groups.

**Conclusions** Dynamic pCLE criteria allow a reliable quantification of the level of inflammation in UC and predict therapy response after 2 wk of treatment that precede mucosal healing significantly. Dynamic, intramucosal changes occur significantly earlier in patients undergoing IFX therapy compared to VDO.

► **Tab. 1** ECSS (\*VF visual field)

Endocytoscopy items	Score
<b>◆ Crypt architecture:</b>	
Normal, elongated	1
Irregular	2
Necrosis	3
<b>◆ Infiltration of the cell between the crypts:</b>	
$\leq 50\%$	1
$\geq 50\%$	2
<b>◆ Distance between the crypts:</b>	
Normal: 3 or more crypts in a VF *	1
Elongated = $< 2$ crypts in a VF*	1
Intermediate= $2 \leq$ crypts $\geq 3$ in a VF* with infiltrating cells in LP	2
Drop-out/necrosis	3
<b>◆ Visibility of superficial microvessels:</b>	
Not visible	0
Visible	1
<b>ECS total score</b>	3-9

## OP182 EARLY EXPERIENCE OF SPYGLASS DISCOVER CHOLANGIOSCOPE FOR PERCUTANEOUS AND INTRAOPERATIVE CHOLANGIOSCOPY

Authors [Phillpotts S<sup>1</sup>](#), [Fateen W<sup>2</sup>](#), [Kok B<sup>2</sup>](#), [Potts J<sup>2</sup>](#), [Webster G<sup>1,2</sup>](#)

Institute 1 Department of Gastroenterology, University College London Hospitals, London, United Kingdom; 2 Royal Free Hospital, Sheila Sherlock Liver Centre, London, United Kingdom

DOI 10.1055/s-0041-1724439

Citation: Phillpotts S, Fateen W, Kok B et al. OP182 EARLY EXPERIENCE OF SPYGLASS DISCOVER CHOLANGIOSCOPE FOR PERCUTANEOUS AND INTRAOPERATIVE CHOLANGIOSCOPY. *Endoscopy* 2021; 53: S75.

**Aims** Peroral cholangioscopy may be a useful tool for targeted therapy of biliary stones and diagnosis of biliary strictures where a conventional retrograde endoscopic approach is not possible (eg. due to surgically altered anatomy). Previously available equipment was not designed or well suited to percutaneous cholangioscopy. The new SpyGlass Discover cholangioscope (Boston Scientific Inc) has been designed specifically for percutaneous or intraoperative use. The scope has a 65cm working length (compared to the longer, 214cm SpyScope DS II). The working channel is 3.6Fr, through which devices such as biopsy forceps and EHL probes can be passed. We describe our technique and early experience of using SpyGlass Discover in our joint tertiary centre since introduction of the system to the UK in July 2020.

**Methods** Percutaneous technique:

Performed supine, under GAPrior PTBD is performed with tract dilated to 12Fr and matured for 7 days.

At cholangioscopy the percutaneous drain is removed over a 260cm 0.035 wire. A 12Fr Peel Away sheath (Cook Medical) is inserted over the wire and into the biliary tree. The cholangioscope is advanced through this into the intrahepatic ducts (over the wire or freehand). Following cholangioscopy procedure an internal-external locking pigtail drain is left in situ, with subsequent tubogram and drain removal at 7 days if duct clear.

Prophylactic antibiotics in all patients.

**Results**

**Discussion** In all 5 cases cholangioscopy was performed successfully and the intended therapy was completed. In one patient a small retained CBD stone at check tubogram was pushed into the small bowel without incident. There were no adverse events.

**Conclusions** We describe positive outcomes using the SpyGlass Discover scope for percutaneous and intra operative cholangioscopy. The short working length allows excellent responsiveness and manoeuvrability throughout the

► Tab. 1

Age/gender: 46 F	Indication: Cholangitis with intrahepatic stones above anastomotic stricture.	Anatomy: Hepaticojejunostomy following bile duct injury	Procedure: Percutaneous Spy - Anastomotic stricture dilatation, cholangioscopy with EHL, balloon trawls	Outcome: Clear intrahepatic ducts.
47 M	Cholangitis with Intrahepatic stones and above anastomotic stricture.	Hepaticojejunostomy for TB-related cholangiopathy.	Percutaneous Spy - Anastomotic stricture dilatation, cholangioscopy with EHL, balloon trawls	Clear intrahepatic ducts.
77 F	Recurrent cholangitis and large CBD stones	Partial gastrectomy	Percutaneous Spy - Anastomotic stricture dilatation, cholangioscopy with EHL, balloon trawls	Clear intrahepatic ducts.
68 M	PTBD in situ. Targeted tissue sampling and pre-surgical map.	Native anatomy	Percutaneous Spy - Cholangioscopic inspection of stricture. Spy-Bite biopsies.	Diagnosed intrahepatic CCA
80 M	Intrahepatic stones and stricture assessment, not accessible by peroral route	Native anatomy	Intra-operative Spy via cystic duct. Cholangioscopic inspection of stricture, Spy-Bite biopsies, EHL of stones and balloon trawls	Diagnosed intrahepatic CCA and removed intrahepatic stones

intra- and extra-hepatic ducts, producing a promising technology for conditions challenging or impossible to treat via a conventional approach.



Saturday, 27 March 2021

11:00 – 11:45

Resect and discard for diminutive polyps:  
Where do we stand?

Room 6

**OP183 HIGH CONFIDENCE OPTICAL DIAGNOSIS OF SMALL POLYPS AT COLONOSCOPY VERSUS HISTOPATHOLOGY: MOVING TOWARDS A NEW GOLD STANDARD?**

**Authors** Ahmad A<sup>1</sup>, Wilson A<sup>1</sup>, Moorghen M<sup>2</sup>, Dhillon A<sup>1</sup>, Thomas-Gibson S<sup>1</sup>, Suzuki N<sup>1</sup>, Humphries A<sup>1</sup>, Haycock A<sup>1</sup>, Monahan K<sup>1</sup>, Vance M<sup>1</sup>, Saunders B<sup>1</sup>  
**Institute** 1 Wolfson Unit for Endoscopy, Imperial College London, London, United Kingdom; 2 Pathology Department, St Mark's Hospital, London, United Kingdom

DOI 10.1055/s-0041-1724440

**Citation:** Ahmad A, Wilson A, Moorghen M et al. OP183 HIGH CONFIDENCE OPTICAL DIAGNOSIS OF SMALL POLYPS AT COLONOSCOPY VERSUS HISTOPATHOLOGY: MOVING TOWARDS A NEW GOLD STANDARD?. *Endoscopy* 2021; 53: S76.

**Aims** Histopathology is regarded as the gold standard for diagnosis of small colonic polyps. However, there is growing interest in optical diagnosis and implementation of a 'resect and discard' strategy. Our aim is to evaluate accuracy of histopathology reporting where a high confidence diminutive polyp optical diagnosis was made and to assess the impact of performing additional tissue section re-cuts, where there is a discrepancy.

**Methods** Eight bowel cancer screening colonoscopists optically diagnosed 639 diminutive polyps during the period Feb-Nov 2020 in the early phase of a prospective feasibility study of optical diagnosis (DISCARD3). Each polyp diagnosis was evaluated by the colonoscopist as high or low confidence. All retrieved polyps were sent for histopathology. Discrepancy between high confidence optical diagnoses and histopathology were re-reported by a second pathologist blinded to the original optical and histological call. If discrepancy remained after re-review, the polyp was re-cut into deeper levels and a third blinded histopathology review performed.

**Results** Of 639 diminutive polyps, 468 (73.2%) were high confidence optical calls and 171 (26.8%) were low confidence.

High confidence optical diagnosis agreed with histopathology in 78.2% (366/468) of cases and disagreed in 21.8% (102/468). In cases of disagreement, the initial histopathology was reviewed and 7.8% (8/102) were due to histopathology error of which 3.9% (4/102) corrected on second review and 3.9% (4/102) corrected with deeper levels. There were no polyp cancers and 1 case of high grade dysplasia.

**Conclusions** Although the majority of errors in optical diagnosis were related to incorrect high confidence calls a significant number were due to histopathology error. Change in practice to routinely perform additional deeper levels (ie 6 levels instead of 3) for small polyps appears to reduce this error rate by ~50%. Optical diagnosis errors may be reduced by increasing the threshold for assignment of high confidence.

**OP184 LEARNING CURVE OF OPTICAL DIAGNOSIS WITH A RESECT AND DISCARD STRATEGY FOR SCREENING COLONOSCOPY: PRELIMINARY RESULTS FROM THE DISCARD3 STUDY**

**Authors** Ahmad A<sup>1</sup>, Wilson A<sup>1</sup>, Thomas-Gibson S<sup>1</sup>, Suzuki N<sup>1</sup>, Humphries A<sup>1</sup>, Haycock A<sup>1</sup>, Monahan K<sup>1</sup>, Vance M<sup>1</sup>, Dhillon A<sup>1</sup>, Saunders B<sup>1</sup>  
**Institute** 1 Wolfson Unit for Endoscopy, Imperial College London, London, United Kingdom

DOI 10.1055/s-0041-1724441

**Citation:** Ahmad A, Wilson A, Thomas-Gibson S et al. OP184 LEARNING CURVE OF OPTICAL DIAGNOSIS WITH A RESECT AND DISCARD STRATEGY FOR

SCREENING COLONOSCOPY: PRELIMINARY RESULTS FROM THE DISCARD3 STUD. *Endoscopy* 2021; 53: S76.

**Aims** Advanced endoscopic imaging allows optical diagnosis of diminutive polyps. Performance thresholds for optical diagnosis have been set to allow a "resect and discard strategy" which may streamline patient care and reduce histopathology need. Aim: to assess early implementation and quality assurance of this strategy in a bowel cancer screening unit setting (1.1 million population).

**Methods** In this prospective feasibility study, 8 bowel cancer screening colonoscopists completed a validated optical diagnosis training module and performed procedures at St Mark's Hospital, London (Feb-Oct 2020). All ≤5mm polyps had white-light and narrow-band images. Endoscopists classified the optical diagnosis as high or low confidence. All polyps had standard histopathology.

Performance was analysed in 2 month time periods with active feedback given. There was repeat histology review of inaccurate high confidence optical diagnoses.

**Results** In the 8 months to date, 639 polyps were optically diagnosed (468 high confidence and 171 low confidence) from 283 patients who were divided into 4 time periods.

The proportion of low confidence diagnoses increased from 15% in periods 1-2 to 29% in period 4.

In periods 1-2, 1/8 endoscopists achieved the 90% accuracy threshold. In periods 3 and 4, 2/8 and 4/8 endoscopists achieved the threshold respectively. Overall, accurate diagnoses increased from 81% to 86% (period 1 to 4). Of those who reached the threshold by period 4 the mean number of high confidence calls was 60 (range 41-99).

For periods 1-4, the positive and negative predictive values for optical diagnosis of adenomas were 89.3% and 64.4% respectively:

**Conclusions** The learning curve for optical diagnosis in a bowel cancer screening setting varies between individual operators. Over time, and with feedback, there is a gradual increase in optical diagnosis accuracy and in the number of colonoscopists achieving the 90% threshold accuracy target, with a corresponding decrease in the percentage of high confidence calls.

▶ Tab. 1

		Histology		Total
		Adenoma	Non-adenoma	
Optical diagnosis	Adenoma	275	57	332
	Non-adenoma	33	103	136
	Total	308	160	468

**OP185 ADVANCED HISTOLOGY IN DIMINUTIVE AND TINY COLORECTAL POLYPS: PREVALENCE AND CLINICAL IMPLICATIONS FOR THE RESECT AND DISCARD STRATEGY**

**Authors** Rossell A<sup>1</sup>, Mármol C<sup>2</sup>, Arnau A<sup>3</sup>, Ascón N<sup>3</sup>, da Costa J<sup>3</sup>, Puig I<sup>3</sup>  
**Institute** 1 Universidad Internacional de Catalunya, Sant Cugat del Vallès, Spain; 2 Althaia, Xarxa Assistencial Universitària de Manresa, Aparato Digestivo, Manresa, Spain; 3 Althaia, Xarxa Assistencial Universitària de Manresa, Manresa, Spain

DOI 10.1055/s-0041-1724442

**Citation:** Rossell A, Mármol C, Arnau A et al. OP185 ADVANCED HISTOLOGY IN DIMINUTIVE AND TINY COLORECTAL POLYPS: PREVALENCE AND CLINICAL IMPLICATIONS FOR THE RESECT AND DISCARD STRATEGY. *Endoscopy* 2021; 53: S76.

**Aims** Both European and American guidelines suggest that, under strictly controlled conditions, optical diagnosis can replace histopathological diagnosis in diminutive colorectal polyps (resect and discard strategy). However, the low, but not negligible, prevalence of advanced histology has prevented its wide implementation. Moreover, in Eastern countries, a higher prevalence of submucosal invasion has been found in non-polypoid diminutive lesions. The main aim is to compare the prevalence of advanced histology in diminutive and tiny ( $\leq 3$ mm) polyps in order to find a safer threshold.

**Methods** Prospective, observational, cross-sectional unicenter study based on the registry of the bowel cancer screening program based on positive FIT.

**Results** 8816 lesions were found in 3508 patients. 3403 (38.6%) lesions were tiny polyps and 5456 (61.9%) were diminutive. The prevalence of advanced histology was lower in tiny polyps when compared to diminutive ones (1.33% vs. 2.14%  $p < 0.001$ ). When subanalyses were performed, the number of lesions with HGN, villous adenoma with LGN and serrated lesions with dysplasia were less frequent in tiny polyps compared to diminutive ones (0.18% vs. 0.37%,  $p < 0.001$ ; 0.62% vs. 0.97%,  $p < 0.001$  and 0.53% vs. 0.80%,  $p < 0.001$ , respectively). In tiny polyps, histology was unavailable in 275 lesions (8.1%) and showed normal mucosa in 206 (6.1%).

**Conclusions** The prevalence of advanced histology was lower in tiny polyps when compared to diminutive ones. The histology process failed to diagnose up to 14% of tiny polyps. Further studies should address whether the resect and discard strategy is safer in tiny polyps than in diminutive ones and whether it is more accurate than the histology process.

## OP186 DIAGNOSTIC ACCURACY OF APPLYING THE WASP CLASSIFICATION TO BLUE LIGHT IMAGING AND LINKED COLOR IMAGING FOR REAL-TIME COLORECTAL POLYP CHARACTERISATION

**Authors** Houwen BBSL<sup>1</sup>, Vleugels JLA<sup>1</sup>, Pellisé M<sup>2,3</sup>, Rivero-Sánchez L<sup>2,3</sup>, Balaguer F<sup>2,3</sup>, Bisschops R<sup>4</sup>, Tejpar S<sup>4</sup>, Repici A<sup>5</sup>, Ramsoekh D<sup>6</sup>, Jacobs MAJM<sup>6</sup>, Schreuder RM<sup>7</sup>, Kamiński MF<sup>8,9</sup>, Rupińska M<sup>8,9</sup>, Bhandari P<sup>10</sup>, van Oijen MGH<sup>11</sup>, Koens L<sup>12</sup>, Bastiaansen BAJ<sup>1</sup>, Tytgat KMAJ<sup>1</sup>, Fockens P<sup>1</sup>, Dekker E<sup>1</sup>, Hazewinkel Y<sup>13</sup>

**Institute** 1 Department of Gastroenterology and Hepatology, Amsterdam University Medical Centre, location Academic Medical Centre, University of Amsterdam, Amsterdam, Netherlands; 2 Department of Gastroenterology, Hospital Clinic of Barcelona, Barcelona, Spain; 3 Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Universitat de Barcelona, Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Barcelona, Spain; 4 Department of Gastroenterology and Hepatology, University Hospital Leuven, Leuven, Belgium; 5 Department of Gastroenterology and Hepatology, Instituto Clinico Humanitas, Milan, Italy; 6 Department of Gastroenterology and Hepatology, Amsterdam University Medical Centre, location VU University Medical Centre, VU University Amsterdam, Amsterdam, Netherlands; 7 Department of Gastroenterology and Hepatology, Catharina Hospital, Eindhoven, Netherlands; 8 Department of Cancer Prevention, The Maria Sklodowska-Curie Memorial Cancer Centre and Institute of Oncology, Warsaw, Poland; 9 Department of Gastroenterology, Hepatology and Clinical Oncology, Medical Centre for Postgraduate Education, Warsaw, Poland; 10 Department of Gastroenterology, Queen Alexandra Hospital, Portsmouth Hospitals NHS Trust, Portsmouth, United Kingdom; 11 Department of Medical Oncology, Amsterdam University Medical Centre, Cancer Centre Amsterdam, University of Amsterdam, Amsterdam, Netherlands; 12 Department of Pathology, Amsterdam University Medical Centre, location Academic Medical Centre, University of Amsterdam, Amsterdam, Netherlands; 13 Department of Gastroenterology and Hepatology, Radboud University Nijmegen Medical Centre, Radboud University of Nijmegen, Nijmegen, Netherlands

DOI 10.1055/s-0041-1724443

**Citation:** Houwen BBSL, Vleugels JLA, Pellisé M et al. OP186 DIAGNOSTIC

ACCURACY OF APPLYING THE WASP CLASSIFICATION TO BLUE LIGHT IMAGING AND LINKED COLOR IMAGING FOR REAL-TIME COLORECTAL POLYP CHARACTERISATION. *Endoscopy* 2021; 53: S77.

**Aims** The Workgroup Serrated Polyps and Polyposis (WASP) classification for endoscopic characterisation of colorectal polyps has been validated using Narrow Band imaging (NBI) technology, leaving uncertainty regarding its applicability to other imaging techniques. The aim of this study was to address the diagnostic accuracy of real-time polyp characterisation applying the WASP classification to Blue Light imaging (BLI), Linked Color imaging (LCI) and high-definition white light endoscopy (HD-WE).

**Methods** This is a post-hoc analysis of a prospective study in which 22 experienced endoscopists (>2,000 colonoscopies) from eight international centres participated. Lesions were characterised using the WASP classification, including a high- or low-confidence statement. Endoscopists were familiar with the WASP classification, but were not formally trained for the purpose of this study. Endoscopists could use LCI, BLI and HD-WE to assess each lesion. Histopathology was reference standard. For the calculation of the diagnostic accuracies adenomas, sessile serrated lesions and hyperplastic polyps were considered different histological subtypes.

**Results** In 332 patients, 341 lesions were detected. For the analysis, 269 histologically confirmed adenomas ( $n = 165$ ), sessile serrated lesions ( $n = 27$ ) and hyperplastic polyps ( $n = 77$ ) were included for which an optical diagnosis was recorded. Polyp characterisation was performed with high confidence in 82.9%. The overall accuracy for polyp characterisation was 75.1% (95% confidence interval [CI] 69.5-80.1%), which was 78.0% (95% confidence interval [CI] 72.0-83.2%) for high confidence assignments only. Adenomas were characterised with 80.0% (95% CI 73.1-85.8%) accuracy and increased to 84.9% (95% CI 77.8-90.4%) for high-confidence predictions. The accuracy for diminutive polyp characterisation was 74.7% (95% CI 68.4-80.3%), compared with an accuracy of 78.2% (95% CI 71.4-84.0%) for high-confidence assignments.

**Conclusions** This is the first study to determine diagnostic accuracies for colorectal polyp characterisation, when performed by expert endoscopists using the WASP classification with BLI, LCI and HD-WE (NCT03344289).

## OP187 THE WORKGROUP SERRATED POLYPS AND POLYPOSIS (WASP) CLASSIFICATION FOR OPTICAL DIAGNOSIS OF DIMINUTIVE COLORECTAL POLYPS USING ISCAN

**Authors** Soons E<sup>1</sup>, Bisseling T<sup>1</sup>, van der Post C<sup>2</sup>, Nagtegaal I<sup>2</sup>, Hazewinkel Y<sup>1</sup>, Siersema P<sup>1</sup>

**Institute** 1 Department of Gastroenterology and Hepatology, Radboudumc, Nijmegen, Netherlands; 2 Department of Pathology, Radboudumc, Nijmegen, Netherlands

DOI 10.1055/s-0041-1724444

**Citation:** Soons E, Bisseling T, van der Post C et al. OP187 THE WORKGROUP SERRATED POLYPS AND POLYPOSIS (WASP) CLASSIFICATION FOR OPTICAL DIAGNOSIS OF DIMINUTIVE COLORECTAL POLYPS USING ISCAN. *Endoscopy* 2021; 53: S77.

**Aims** The Workgroup Serrated Polyps and Polyposis (WASP) classification system can be used for the endoscopic differentiation of adenomas (ADs), hyperplastic polyps and sessile serrated lesions (SSLs) and was developed for use with narrow band imaging. The aim of this study was to improve the diagnostic accuracy of diminutive colorectal polyps, when applying the WASP classification using iScan (Pentax).

**Methods** Endoscopists predicted polyp histology, including their confidence level, based on 30 videos of diminutive polyps, before and after participating in a training ( $T_0$  and  $T_1$ ). After three months they were invited to score a new set of 30 videos ( $T_2$ ). The primary outcome was the overall diagnostic accuracy at  $T_0$ ,  $T_1$  and  $T_2$ . Secondary outcome was the accuracy for specifically diagnosing SSLs.

**Results** Overall diagnostic accuracy was 0.58 (95% CI 0.55-0.62) at  $T_0$ , which improved to 0.63 (95%-CI 0.60-0.66,  $p = 0.004$ ) at  $T_1$ . For polyps diagnosed

with high confidence (HC), The overall accuracy was 0.70 (95 %-CI 0.64-0.75) at T<sub>0</sub> and 0.74 (95 %-CI 0.69-0.78, p=0.166) at T<sub>1</sub>. The overall accuracy at T<sub>2</sub> was 0.58 (95 %-CI 0.54-0.62, p=0.787, compared to T<sub>0</sub>), and 0.61 (95 %-CI 0.55-0.67, p=0.076) for diagnoses made with HC.

Diagnostic accuracy for SSLs was 0.51 (95 %-CI 0.46-0.56) at T<sub>0</sub>, which improved to 0.55 (95 %-CI 0.49-0.60, p=0.119) at T<sub>1</sub>. For SSLs diagnosed with HC the accuracy was 0.57 (95 %-CI 0.48-0.66) at T<sub>0</sub> and 0.62 (95 %-CI 0.56-0.69, p=0.383) at T<sub>1</sub>. The accuracy for SSLs at T<sub>2</sub> was 0.48 (95 %-CI 0.42-0.55, p=0.520, compared to T<sub>0</sub>), and 0.45 (95 %-CI 0.38-0.53, p=0.083) for HC diagnoses.

**Conclusions** Optical diagnosis of diminutive colorectal polyps significantly improves directly after participating in a training on the use of the WASP classification using iScan; however, this improvement was no longer present after 3 months. Optically diagnosing SSLs was found to be more difficult, without improvement at T<sub>1</sub> nor T<sub>2</sub>.

Saturday, 27 March 2021

12:00 – 12:45

Difficult bile stones in year 2021

Room 5

## OP188 PREDICTING CLEARANCE OF 'DIFFICULT' BILIARY STONES IN THE CHOLANGIOSCOPY ERA

**Authors** Martin H<sup>1</sup>, Patel S<sup>2</sup>, Virdee P<sup>2</sup>, El Menabaway T<sup>1</sup>, Parisinos C<sup>1</sup>, Phillpotts S<sup>1</sup>, Chapman M<sup>1</sup>, Webster G<sup>1</sup>

**Institute** 1 University College Hospital, Pancreatobiliary Medicine, London, United Kingdom; 2 University College London Medical School, London, United Kingdom

**DOI** 10.1055/s-0041-1724445

**Citation:** Martin H, Patel S, Virdee P et al. OP188 PREDICTING CLEARANCE OF 'DIFFICULT' BILIARY STONES IN THE CHOLANGIOSCOPY ERA. *Endoscopy* 2021; 53: S78.

**Aims** A number of predictors of failure of biliary stone clearance at endoscopic retrograde cholangio pancreatography (ERCP) are known, including stones >15 mm, stones above strictures, Mirizzi syndrome and intrahepatic stones(1). The introduction of single operator cholangioscopy (SOC) has improved the ability to treat difficult biliary stone disease(2). However, there have been no studies looking at predicting success or failure of biliary stone disease in the era of SOC.

**Methods** All patients undergoing ERCP with Spyglass DS/DSII™ SOC for biliary stones at a high-volume UK tertiary referral centre between January 2015 to April 2019 were enrolled. Using clinical records and the endoscopy reporting tool; patient demographics, indication for cholangioscopy and procedural success rate were recorded. Success was defined as endoscopist assessment of: incomplete clearance requiring stent insertion, incomplete clearance not requiring stent insertion, and complete clearance of the biliary tree.

**Results** 256 procedures were performed in 211 patients (mean 63.7 years, 60 % female). Seven procedures were excluded due to incomplete documentation. All patients had had previously unsuccessful attempts at stone clearance. Procedure indications included: extrahepatic biliary stones (n=200), stones above strictures (n= 19), intrahepatic stones (n=12) and Mirizzi syndrome (n=25). Complete stone clearance was achieved in 58%, 42%, 75% and 56% respectively. However, where stone fragmentation was felt to be sufficient to not require stent insertion these rates increased to 62%, 58%, 75% and 80% respectively.

**Conclusions** SOC has an important role to play in biliary stone disease where conventional ERCP has failed. It may particularly advance stone clearance in the setting of Mirizzi syndrome and intra hepatic stones. Stones above strictures remain a challenge, even with SOC. Patient selection remains vital and all cases should be discussed in an MDM prior to undertaking SOC.

► Tab. 1

Indication for procedure	Numbers	Complete Clearance	Partial Clearance without stents	Partial Clearance with stents
CBD Stones	200	116 (58%)	8 (4%)	67 (33.5%)
Stones above Stricture	19	8 (42.1%)	3 (15.8%)	7 (36.8%)
Intra Hepatic Stones	12	9 (75%)	0 (0%)	3 (25%)
Mirizzi	25	14 (56%)	6 (24%)	5 (20%)

## OP189 EFFICACY OF ERCP FOR DIFFICULT BILE DUCT STONE CLEARANCE: ENDOSCOPIC PAPILLARY BALLOON DILATION WITH STENT VERSUS STENT

**Authors** Albuquerque M<sup>1,2</sup>, Zaragoza N<sup>3</sup>, Miguel I<sup>3</sup>, Figa M<sup>1</sup>, Pijoan E<sup>3</sup>, Miñana JM<sup>3</sup>, Vargas A<sup>1,2</sup>, Torres G<sup>3</sup>, Reñe JM<sup>3</sup>, González-Huix F<sup>1,3</sup> SEED Working Group on ERCP

**Institute** 1 Clínica Girona, Gastroenterology, Girona, Spain; 2 Hospital de Palamós, Gastroenterology, Girona, Spain; 3 Hospital Universitario Arnau de Vilanova, Gastroenterology, Lleida, Spain

**DOI** 10.1055/s-0041-1724446

**Citation:** Albuquerque M, Zaragoza N, Miguel I et al. OP189 EFFICACY OF ERCP FOR DIFFICULT BILE DUCT STONE CLEARANCE: ENDOSCOPIC PAPILLARY BALLOON DILATION WITH STENT VERSUS STENT. *Endoscopy* 2021; 53: S78.

**Aims** To compare the efficacy of endoscopic papillary balloon dilation with stent (EPBD-s) vs. only stent (OS) for difficult bile duct stone clearance.

**Methods** Comparative analysis of a multicenter prospective endoscopy database (2009-2019) including consecutive patients with naive papilla undergone first ERCP for bile duct stones. Efficacy of EPBD-s vs. OS in following ERCPs was compared.

**Results** There were included 1615 patients (age: 73.3 ±0.39 years old, 52.9% women). Unsuccessful clearance: 6.6% (107 patients). In a multivariate analysis, diameter of largest stone >15mm, OR: 8.08 (95%CI: 4.74 -13.77), number >10 stones, OR: 2.66 (95%CI: 1.16 -6.09), stricture below stone, OR: 17.10 (95%CI: 7.47 -39.11), post-surgical anatomical biliary disturbances (Billroth-II, Roux-en-Y), OR: 4.54 (95%CI: 1.28 -16.12), and common bile duct (CBD) diameter >13mm, OR: 1.81 (95%CI: 1.09 -3.01) were associated with unsuccessful clearance.

Of 107 patients with unsuccessful clearance, 97 undergone subsequent ERCPs. In 49/97 (50.52%), EPBD-s was performed and in 48/97 (49.48%), OS. After subsequent ERCPs, a complete clearance was not achieved in 28/97 patients (28,8%). EPBD-s achieved a higher clearance rate (40/49, 81.6%) than Os (29/48, 60,4%), p=0,026; and it was the only predictor of final complete clearance, OR: 2.91 (95%CI: 1.15 -7.35). There was no difference in complication rate, EPBD-s =14.3% vs. Os =14.6%, p=0.97.

**Conclusions** Endoscopic papillary balloon dilation with stent is superior over only stent for difficult bile duct stone clearance. This strategy (EPBD-s) should be ever raised in patients with biliary stones >15mm, number >10 stones, located above strictures, with post-surgical anatomical biliary disturbances and CBD diameter >13mm.

## OP190 DIFFICULT BILIARY STONES IN THE ELDERLY: ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY. A SINGLE SURGICAL TERTIARY CENTER EXPERIENCE WITH FOLLOW UP

**Authors** Antypas P<sup>1</sup>, Cereatti F<sup>2</sup>, Fiocca F<sup>1</sup>, Cappello A<sup>1</sup>, Eberspacher C<sup>1</sup>, Fanello G<sup>1</sup>, Mascagni D<sup>1</sup>, Donatelli G<sup>2</sup>

**Institute** 1 Sapienza University of Rome, Emergency Endoscopy Unit, Rome, Italy; 2 Hôpital Privé des Peupliers, Ramsay Santé, Unité d'Endoscopie Interventionnelle, Paris, France

**DOI** 10.1055/s-0041-1724447

**Citation:** Antypas P, Cereatti F, Fiocca F et al. OP190 DIFFICULT BILIARY STONES IN THE ELDERLY: ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY. A SINGLE SURGICAL TERTIARY CENTER EXPERIENCE WITH FOLLOW UP. *Endoscopy* 2021; 53: S79.

**Aims** Pancreaticobiliary diseases and choledocholithiasis are common in elderly patients. Endoscopic treatment of biliary stones represents a well-established mini-invasive technique. However, limited data are available regarding the treatment of "difficult" biliary stones in elderly population. The aim of our study is to evaluate the efficacy and safety of therapeutic endoscopic retrograde cholangiopancreatography (ERCP) in patients ≥85 years of age with complex biliary stones.

**Methods** From January 2015 to January 2017, data from ERCP procedures performed for complex biliary stones were retrospectively collected. The patients were divided into two groups based on their age: group A 85 years old or older and group B 65 years or younger. Demographic data, success, complications and recurrence rates for both groups were reported.

**Results** 280 patients over 85 years and 435 patients younger than 65 years old underwent ERCP for biliary stones during study period. The mean age of group A was 88.2±2.5 years and 50.4±10.8 years for group B. "Difficult" biliary stones were diagnosed in 110 patients among elderly (39.2%; group A) and in 62 cases among patients younger than 65 years old (14.2%; group B). Chronic comorbidities (86.3% vs 24.2%; p<0.001) and use of antithrombotic drugs (48.2% vs 19.3%; p<0.001) were more frequent in the elderly. Technical success rate (95.4% vs 96.7%; p>0.6) and complications rate (8.2% vs 13%; p>0.2) were not different among the two groups (Table1). Periampullary diverticula (PAD) were observed more frequently in group A (38.1% vs 17.7%; p<0.006). More patients from group B underwent cholecystectomy during the same admission (8.2% vs 42.3%; p<0.001). Recurrence rate was not different among the groups (7.6% vs 5%; p>0.5). PAD was identified as risk factor for recurrence (p<0.02).

**Conclusions** ERCP in the elderly was found to be a safe procedure, carrying a high degree of success for the treatment of difficult biliary stones.

## OP191 HOW SHOULD WE DEFINE A LARGE COMMON BILE DUCT STONE ?

**Authors** Nakhli A<sup>1</sup>, Sabbah M<sup>1</sup>, Bellil N<sup>1</sup>, Bibani N<sup>1</sup>, Ouakaa A<sup>1</sup>, Elloumi H<sup>1</sup>, Trad D<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute** 1 Faculté de Médecine de Tunis, Gastroenterologie, Habib Thameur Hospital, Tunis, Tunisia

**DOI** 10.1055/s-0041-1724448

**Citation:** Nakhli A, Sabbah M, Bellil N et al. OP191 HOW SHOULD WE DEFINE A LARGE COMMON BILE DUCT STONE ?. *Endoscopy* 2021; 53: S79.

**Aims** The definition of a large stone is not clear ranging from 10 to 15 mm (1) Some authors speak of a large stone if its size is greater than the diameter of the CBD by more than 2 mm (ratio size of the stone/diameter of the CBD> 1). (2) The objective of our study was to identify the threshold at which the diameter of the stone becomes a cause of endoscopic treatment failure.

**Methods** This is a retrospective study that included all patients who had ERCP for common bile duct stones between January 2014 and December 2017. The threshold from which the diameter of the stone is predictive of the failure of the ERCP was identified by the analysis of the ROC curve.

**Results** We included 181 patients whose mean age was 64 years [22-103 years] with a sex ratio M/W = 0.41. The main indications for ERCP were residual or recurrent lithiasis (69%, n = 129) or sequential treatment (18%, n = 33). The success rate of the 1st line treatment was 61.5%. The average stone size was 12.5mm [3-40mm]. On analysis of the ROC curve, the diameter that predicts endoscopic treatment failure in the most sensitive and specific way was 12 mm with a sensitivity of 74% and a specificity of 73%. In univariate analysis, a stone larger than 12 mm was a predictor of standard endoscopic treatment failure (p = 0.001). The ratio stone size/diameter of the CBD was on average equal to 0.74 [0.27-1.67]. In our series, this factor was not significantly associated with ERCP failure (p = 0.276).

**Conclusions** In our series, a stone size greater than 12 mm was a predictor of ERCP failure. The ratio stone size/diameter of the CBD was not significantly associated with endoscopic treatment failure.

## OP192 ADVANCED AGE: A PREDICTOR OF DIFFICULT LITHIASIS DURING ERCP?

**Authors** Nakhli A<sup>1</sup>, Sabbah M<sup>1</sup>, Trad D<sup>1</sup>, Bellil N<sup>1</sup>, Ouakaa A<sup>1</sup>, Elloumi H<sup>1</sup>, Bibani N<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute** 1 Faculté de Médecine de Tunis, Gastroenterologie, Habib Thameur Hospital, Tunis, Tunisia

**DOI** 10.1055/s-0041-1724449

**Citation:** Nakhli A, Sabbah M, Trad D et al. OP192 ADVANCED AGE: A PREDICTOR OF DIFFICULT LITHIASIS DURING ERCP?. *Endoscopy* 2021; 53: S79.

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy and stone extraction using a Dormia balloon or a basket is the standard treatment for common bile duct (CBD) stones. When the clearance of the CBD cannot be obtained by standard techniques, it is referred to as difficult lithiasis. Advanced age is one of the causes of difficult lithiasis (1,2). The objective of this study was to identify parameters that could explain the higher failure rate in older age.

**Methods** This is a retrospective study that included all patients who had ERCP for common bile duct stones between January 2014 and December 2017. The patients were divided into two groups: group 1: patients aged > 65 years and group 2: patients aged ≤ 65 years. Epidemiological, clinical, para-clinical and endoscopic data were compared between the two groups. The statistical study was carried out with SPSS software (p significant if <0.05).

**Results** We included 182 patients who were divided into: group 1 (n = 86) and group 2 (n = 95). The main characteristics of the two groups are summarized in the table below:

► **Tab. 1**

Characteristics	G 1 > 65 years (n = 86)	G 2 ≤ 65 years (n = 95)	p
<i>Epidemiology</i>			
▪ Sex [M/W]	26/60	22/58	0,698
▪ Cholecystectomy	70%	65%	0,512
<i>Indications</i>			
▪ Residual lithiasis	70%	65%	0,512
▪ Sequential treatment	10%	21%	0,055
▪ Clearance of CBD stones without gallbladder removal	20%	14%	0,301



Biology			
▪ ASAT (ULN)	2 (1-8)	2,8 (1-14)	0,244
▪ ALAT (ULN)	2,2 (1-15)	3,5 (1-12)	0,090
▪ Bilirubin ( $\mu\text{mol/l}$ )	39,9 (2-133)	59,5 (3-282)	0,170
▪ Hb (g/dl)	12,5 (8-16)	12,9 (9,5-16,8)	0,305
▪ PT (%)	91,5	89,4%	0,402
Endoscopy			
▪ Small papilla	31 %	29,5%	0,839
▪ Eccentric papilla	3,5 %	2,6 %	0,731
▪ Intra-diverticular papilla	7,1 %	2,6 %	0,185
▪ Para-diverticular papilla	22,4 %	6,4 %	<b>0.004</b>
▪ Papilla hidden by a fold	1,2 %	1,3 %	0,951
▪ Diameter of the CBD (mm)	15,6 (7-30)	12,45 (7-30)	<b>&lt;10<sup>-3</sup></b>
▪ Stone size (mm)	12,36 (5-25)	13,7 (9,5-16,8)	0,539
▪ Average stones number	1,8	1,2	<b>0,026</b>
▪ >3 stones	17,4 %	8,8 %	0,134
▪ Stenosis of the CBD	4 %	2,9 %	0,731
▪ Impacted stone	6,7 %	0	<b>0.030</b>
▪ Clearance of the CBD	54,7 %	70 %	<b>0.042</b>

ALAT: Alanine amino-transférase

ASAT: Aspartate amino-transférase

CBD: common bile duct

Hb: Hémoglobine

ULN: upper limit of normal

PT: prothrombin time

**Conclusions** In our series, the failure rate of ERCP was higher in the elderly. This could be explained by the higher frequencies of para-diverticular papilla and impacted stones, a larger diameter of the CBD and a higher average number of stones.

Saturday, 27 March 2021

12:00 – 12:45

Upper GI endoscopy: Complications, bleeding, and more Room 6

### OP193V DELAYED BLEEDING & INTRA-TUNNEL HEMATOMA AFTER POEM: SALVAGE ENDOSCOPY MANAGEMENT WITH FULL RECOVERY

**Authors** Omella I<sup>1</sup>, de Frutos D<sup>1</sup>, Santiago J<sup>1</sup>, Agudo B<sup>1</sup>, Tormo B<sup>1</sup>, Gomez-Pimpollo L<sup>2</sup>, Matallanos P<sup>1</sup>, Delgado MS<sup>1</sup>, Blazquez E<sup>1</sup>, Artillo M<sup>1</sup>, Bote M<sup>1</sup>, Herreros de Tejada A<sup>1</sup>

**Institute** 1 Department of Gastroenterology, Puerta de Hierro University Hospital, Madrid, Spain; 2 Department of Radiology, Puerta de Hierro University Hospital, Madrid, Spain

DOI 10.1055/s-0041-1724450

**Citation:** Omella I, de Frutos D, Santiago J et al. OP193V DELAYED BLEEDING &

INTRA-TUNNEL HEMATOMA AFTER POEM: SALVAGE ENDOSCOPY MANAGEMENT WITH FULL RECOVERY. Endoscopy 2021; 53: S80.

Per Oral Endoscopy Miotomy (POEM) is a safe technique, and major adverse effects (AE) are commonly <5% in largest series. Delayed bleeding with intra-tunnel hematoma is uncommonly reported in literature. If suspected due to sudden dysphagia, chest pain, hematemesis and/or drop of hemoglobin, urgent chest CT can confirm this serious AE. Salvage endoscopy within 24-48h for mechanical removal of intra-tunnel clot and local hemostasia of bleeding vessels can prevent ischemic phenomena and stop bleeding, allowing complete recovery.

### OP194 TIMING OF UPPER ENDOSCOPY AFFECTS THE OUTCOME AND SURVIVAL IN PATIENTS WITH ACUTE VARICEAL BLEEDING: BREAKING THE ROLES WHATEVER THE COST?

**Author** Hanafy A<sup>1,2</sup>

**Institute** 1 Amr Shaaban Hanafy, Zagazig, Egypt; 2 Zagazig University, Internal Medicine Department – Endoscopy Unit-Gastroenterology and Hepatology Division, Zagazig, Egypt

DOI 10.1055/s-0041-1724451

**Citation:** Hanafy A OP194 TIMING OF UPPER ENDOSCOPY AFFECTS THE OUTCOME AND SURVIVAL IN PATIENTS WITH ACUTE VARICEAL BLEEDING: BREAKING THE ROLES WHATEVER THE COST?. Endoscopy 2021; 53: S80.

**Aims** The timing of endoscopy is important in the management of patients with upper GI bleeding (UGIB). The need for urgent endoscopy is still a matter of debate. The aim was to postulate predictable parameters of adverse outcomes if urgent endoscopy was delayed and if the outcome differs after urgent from non-urgent endoscopy.

**Methods** the patients were randomly assigned into a study group (n=100) which were exposed to urgent endoscopy within 6 hours or a control group that was prepared for 24 hours. Glasgow Blatchford score (GBS) was used for risk stratification of UGIB. Inclusion criteria: acute UGIB, systolic pressure  $\geq$  90 mmHg, hemoglobin  $\geq$ 7gm/dl, creatinine <2 mg. Exclusion criteria were Hemodynamic instability after 3 hours of intravascular volume replacement, associated acute respiratory failure, acute myocardial infarction, acute renal failure. Laboratory investigations included liver, kidney function tests, complete blood count, D-dimer, serum lactate, and serum procalcitonin.

**Results** Death occurred in the control group despite stabilization (10/100, 10%, p=0.000) and longer ICU stay. Urgent endoscopy in a short time 5.05 $\pm$ 1.3 minutes due to esophageal varices grade 3-4 in (65/100), spurter on esophageal varices (17/100), subcardiac spurter (9/100), actively bleeding fundal varix in (5/100), death occurred in 4 (4%) patients due to hypovolemic shock before endoscopy. Survival correlated with ALT (p=0.003), serum creatinine (p=0.026), D-dimer (p=0.000), serum lactate (p=0.000), procalcitonin (p=0.02), GBS (p=0.000), duration of procedure (p=0.000). Logistic regression showed that D-dimer [odds ratio (OR)9.9], serum lactate (OR 5.2), pro-calcitonin (OR 4.3), GBS (OR1.85) were associated with reduced survival if endoscopy was delayed (OR 2.1). Serum lactate at a cut off value of 3.6 mmol/l, D dimer at 350, procalcitonin at 3.8ng/ml, GBS at cutoff 14 necessitated doing urgent endoscopy.

**Conclusions** The decision for urgent endoscopy was guided by prognostic markers as serum lactate, procalcitonin, D dimer, and GBS which if increased above cutoff values are associated with poor survival.

### OP195 GASTROESOPHAGEAL REFLUX DISEASE AFTER PERORAL ENDOSCOPIC MYOTOMY: ANALYSIS OF CLINICAL IMPACT AND RISK FACTORS IN A LARGE SERIES OF PATIENTS

**Authors** Mangiola F<sup>1</sup>, Familiari P<sup>1</sup>, Landi R<sup>1</sup>, Vita CV<sup>1</sup>, Bove V<sup>1</sup>, Perri V<sup>1</sup>, Costamagna G<sup>1</sup>

**Institute** 1 Fondazione Policlinico Universitario A. Gemelli IRCCS, Roma, Italy

DOI 10.1055/s-0041-1724452

**Citation:** Mangiola F, Familiari P, Landi R et al. OP195 GASTROESOPHAGEAL REFLUX DISEASE AFTER PERORAL ENDOSCOPIC MYOTOMY: ANALYSIS OF CLINICAL IMPACT AND RISK FACTORS IN A LARGE SERIES OF PATIENTS. *Endoscopy* 2021; 53: S80.

**Aims** Peroral endoscopic myotomy (POEM) is a fascinating procedure for the treatment of patients with esophageal motility disorders, but it is known to be associated with an high risk of post-operative gastroesophageal reflux (GERD). Aims of this study are to evaluate the incidence of iatrogenic GERD and to identify possible associations with preoperative, perioperative and postoperative factors.

**Methods** All the patients who underwent POEM at a single tertiary referral center since May 2011 until June 2019 and had a complete GERD evaluation, including esophagogastroduodenoscopy, high-resolution manometry and pH-monitoring study after the procedure, were included in the study. Esophagitis was classified according to Los Angeles'. Clinically-relevant GERD was defined by the association of a positive pH-test with heartburn and/or esophagitis. Demographics (gender, age), perioperative (duration of symptoms before treatment, Eckardt score, previous treatments, depth, orientation and length of myotomy), postoperative (4sIRP, esophagitis, deMeester- and Eckardt-score) were collected and analyzed.

**Results** Seven-hundred patients underwent POEM during the study period and 515 (73.6%, mean age 48.9 years, 49.1% males) were included. Altered esophageal acid exposure was confirmed in 198 (38.4%). One-hundred patients (19.4%) had heartburn and 184 esophagitis (35.7%). Interestingly, esophagitis was detected in 56% of patients with an altered pH-study and 23% with a normal one. Clinically-relevant GERD was diagnosed in 135 (26.2%). A trend was observed when examining the relationship between GERD symptoms and severe esophagitis. Previous endoscopic treatments of achalasia were significantly associated with clinically relevant GERD, severe esophagitis or altered esophageal acid exposure ( $p < 0.05$ ). A selective-circular myotomy was associated with a lower incidence of clinically-relevant GERD, altered esophageal acid exposure and esophagitis ( $p < 0.05$ ).

**Conclusions** Previous achalasia endoscopic therapies and depth-of-myotomy are associated with a high risk of severe GERD. Nevertheless, clinically-relevant GERD was diagnosed in less than one-third of patients, and symptoms were always well-controlled with medical therapy.

► Tab. 1

	Clinically-relevant GERD 135 patients	No clinically-relevant GERD 380 patients	p value
Selective circular myotomy	25.9% [35]	36.3% [138]	0.037
Previous endoscopic treatment (Botox – Dilatation)	17.8% [24]	9.7% [37]	0.0154
Basal LES pressure, mmHg	17 ± 9.8	19.5 ± 10	0.017
4sIRP, mmHg	7.5 ± 4.5	8.7 ± 4.8	0.013

## OP196 TREATMENT OF DUODENAL ULCER BLEEDING - EFFICACY OF TRAUMATIC AND ATRAUMATIC OVER-THE-SCOPE-CLIPS (OTSC) – A MULTICENTER RETROSPECTIVE ANALYSIS

**Authors** Hollenbach M<sup>1</sup>, Schmidt A<sup>2</sup>, Decker A<sup>2</sup>, Möschler O<sup>3</sup>, Jung C<sup>4</sup>, Mechie N<sup>5</sup>, Barhoom T<sup>5</sup>, Hegelein A<sup>5</sup>, Knoop R<sup>6</sup>, Blasberg T<sup>5</sup>, Wedi E<sup>5</sup>

**Institute** 1 University of Leipzig Medical Center, Division of Gastroenterology, Medical Department II, Leipzig, Germany; 2 University of Freiburg, Department of Medicine II, Medical Center, Faculty of Medicine, Freiburg, Germany; 3 Department of Internal Medicine/Gastroenterology, Marienhospital Osnabrück, Osnabrück, Germany; 4 AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, Forlì-Cesena, Italy; 5 Sana Clinic Offenbach, Division of Gastroenterology, Offenbach, Germany; 6 University of Göttingen Medical Center, Division of Gastroenterology, Göttingen, Germany

DOI 10.1055/s-0041-1724453

**Citation:** Hollenbach M, Schmidt A, Decker A et al. OP196 TREATMENT OF DUODENAL ULCER BLEEDING - EFFICACY OF TRAUMATIC AND ATRAUMATIC OVER-THE-SCOPE-CLIPS (OTSC) – A MULTICENTER RETROSPECTIVE ANALYSIS. *Endoscopy* 2021; 53: S81.

**Aims** The over-the-scope-clip (OTSC) substantially improved the endoscopic armamentarium for the treatment of severe gastrointestinal bleeding and can potentially overcome limitations of standard clips. Recent data indicated superiority of OTSC in hemostasis as first and second line therapy. However, the impact of the OTSC design (traumatic (-t) or atraumatic (-a) type) in particular in duodenal ulcer bleeding has not been analyzed thus far.

**Methods** Retrospective analysis of a prospective collected database from 2009 until 2020 of 6 German endoscopic centers. All patients who underwent emergency endoscopy and were treated by OTSC for duodenal ulcer bleeding were included to the analysis. Proportions of OTSC-t and OTSC-a were analyzed by chi-square-test, Mann-Whitney-U- or Students' t-test.

**Results** 173 patients (93 OTSC-a, 80 OTSC-t) were included to the final analysis. The baseline characteristics age (71.2 y vs. 71.6 y,  $p=0.255$ ), gender (male gender: 69.9% vs. 67.5%,  $p=0.735$ ), anticoagulant therapy (32.9% vs. 43.0%,  $p=0.176$ ) and Rockall-Score (7.2 vs. 7.4,  $p=0.917$ ) were comparable between both groups. However, OTSC-a group showed significantly less active bleeding ulcers (Forrest Ia/b) than OTSC-t group (51.1% vs. 62.5%,  $p=0.020$ ). OTSC-t was more often use as first-line treatment (95% vs. 77.8%,  $p=0.004$ ). Initial bleeding hemostasis (OTSC-a: 93.5%, OTSC-t: 90%,  $p=0.421$ ) or bleeding-associated mortality (OTSC-a: 3.2%, OTSC-t: 7.8%,  $p=0.125$ ) were not significantly different between both groups but OTSC-t revealed a dramatically higher rate of rebleeding (37.2% vs. 6.5%,  $p < 0.001$ ).

**Conclusions** OTSC-a should be the standard of care for duodenal ulcer bleeding if the endoscopist aims for an over-the-scope-clip.

## OP197 NONINVASIVE MARKERS PREDICTING VARICEAL SIZE: THE ROLE OF LOK SCORE

**Authors** Ayari M<sup>1</sup>, Zaimi Y<sup>1</sup>, Mensi A<sup>1</sup>, Bel Hadj Mabrouk E<sup>1</sup>, Ayadi S<sup>1</sup>, Said Y<sup>1</sup>, Mouelhi L<sup>1</sup>, Dabbeche R<sup>1</sup>

**Institute** 1 Charles Nicolle Hospital, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0041-1724454

**Citation:** Ayari M, Zaimi Y, Mensi A et al. OP197 NONINVASIVE MARKERS PREDICTING VARICEAL SIZE: THE ROLE OF LOK SCORE. *Endoscopy* 2021; 53: S81.

**Aims** Upper gastrointestinal endoscopy is the gold standard method to detect esophageal varices. However, in some cases endoscopy could not be performed or be postponed because of technical difficulties or patient-related factors, and thus diagnosis and treatment may be delayed. The aim of our study was to investigate the correlation between noninvasive scores and variceal size.

**Methods** We performed a retrospective analytical study over 5 years period (2012-2017) including patients with chronic liver disease undergoing endoscopy for oesophageal varices screening or hospitalized for variceal bleeding. Patients with hepatocellular carcinoma or under band ligation protocol and without varices were excluded. We calculated non-invasive scores: Meld, Meld-Na, Fib-4, APRI, PALBI, age-platelet index and Lok score for each patient at the moment of endoscopy.

**Results** During the study period, we enrolled 89 patients. The mean age was 55,9 ± 14,17 years and the sex ratio (F/H) was of 1.02. Most of patients were

cirrhotic and 10% presented non-cirrhotic portal hypertension. Viral hepatitis were the main cause of cirrhosis: viral C in 34.5% of cases and viral B 16.7% of cases. Child-Pugh score A was prevalent (50.6%). Among non-invasive markers calculated, only Lok score was associated to variceal size ( $p < 0.0001$ ). Patients with large esophageal varices were found to have significantly higher Lok score (mean  $0.722 \pm 0.229$ ) versus patients with small esophageal varices (mean  $0.900 \pm 0.124$ ). When analyzing the receiver operating characteristic (ROC) curve, LOK score had the better area under the curve (AUC) in predicting the size of varices (AUC = 0.731,  $p = 0.001$ , 95% CI: 0.593–0.870).

**Conclusions** We found a significant correlation between Lok score and the size of esophageal varices. According to our result, cirrhotic patients with varices who do not consent or tolerate endoscopic surveillance, LOK score can be a useful noninvasive method to evaluate variceal size.

Saturday, 27 March 2021

14:00 – 14:45

Quality and Training in Endoscopy

Room 5

### OP198 UPPER GASTROINTESTINAL ENDOSCOPY IN THE CZECH REPUBLIC 2010-2019

**Authors** Cyraný J<sup>1,2</sup>, Jarkovsky J<sup>3</sup>, Benesova K<sup>3</sup>, Rejchrt S<sup>1</sup>

**Institute** 1 Charles University, Faculty of Medicine and University Hospital, Hradec Králové, 2nd Department of Internal Medicine - Gastroenterology, Hradec Králové, Czech Republic; 2 Department of Internal Medicine, Regional Hospital Jičín, Jičín, Czech Republic; 3 Institute of Health Information and Statistics of the Czech Republic, Prague, Czech Republic

DOI 10.1055/s-0041-1724455

**Citation:** Cyraný J, Jarkovsky J, Benesova K et al. OP198 UPPER GASTROINTESTINAL ENDOSCOPY IN THE CZECH REPUBLIC 2010-2019. *Endoscopy* 2021; 53: S82.

**Aims** To describe upper gastrointestinal endoscopy (UGIE) in the Czech Republic (CR) in terms of descriptive statistics.

**Methods** Data about UGIE and derived procedures during period 2010-2019 were extracted from publicly accessible registers and were subjected to descriptive statistics methods.

**Results** 274442 UGIE were performed in CR during year 2019 and this amount did not varied significantly during last 10 years. Majority of UGIE are performed by gastroenterologists; contribution of surgeons and internists is numerically small and declining (from 6.5 to 4.8% and from 3.6 to 1.3% resp.). Number of UGIE performed yearly is thus 25.8 per 1000 inhabitants (variates from 21.4 to 28.7 among 14 administrative regions of CR). Biopsy sampling is performed in 55% of UGIE, rapid urease tests in 26%. Proportion of ligation versus sclerotisation rose from 49% to 81% among otherwise stable number of 1200 variceal bleeding procedures per year. Number of implanted endoscopic gastrostomies (PEG) rose within ten years from 2845 to 4097 cases yearly. Treatment of neoplastic lesions (either polypectomy or mucosal resection) rose from 3284 to 6018, proportion of mucosal resection technique rose from 3.9 to 7.4%.

**Conclusions** Number of UGIE performed yearly in CR is stable around 270 thousands (26 per 1000 inhabitants) during last 10 years. Significant change in the treatment of variceal haemorrhage in favour of ligation was documented during last 10 years as well as almost double rise in therapy of neoplastic lesions with growing (but still small) proportion of endoscopic mucosal resections. Number of PEG implantation rose by 44% in ten years period.

### OP199 IMPACT OF TRAINEE INVOLVEMENT ON THE ENDOSCOPIST BIOPSY RATE AND DETECTION OF PREMALIGNANT CONDITIONS AT UPPER GASTROINTESTINAL ENDOSCOPY

**Authors** State M<sup>1</sup>, Voiosu A<sup>1</sup>, Bengus A<sup>1</sup>, Voiosu T<sup>1</sup>, Mateescu RB<sup>1</sup>

**Institute** 1 Colentina Clinical Hospital, Gastroenterology, Bucharest, Romania

DOI 10.1055/s-0041-1724456

**Citation:** State M, Voiosu A, Bengus A et al. OP199 IMPACT OF TRAINEE INVOLVEMENT ON THE ENDOSCOPIST BIOPSY RATE AND DETECTION OF PREMALIGNANT CONDITIONS AT UPPER GASTROINTESTINAL ENDOSCOPY. *Endoscopy* 2021; 53: S82.

**Aims** Validated quality indicators for upper-GI endoscopy are essential in order to provide optimal patient care. Recently, the endoscopist biopsy rate (EBR) has been shown to correlate with increased detection of upper GI premalignant conditions (UPC) [1]. We aimed to determine if the EBR rate of the senior endoscopists varied according to trainee involvement in the procedures.

**Methods** We conducted a retrospective analysis of EGDs performed by senior and trainee endoscopists in a teaching hospital from Romania. EBR was defined as the proportion of EGDs with  $\geq 1$  biopsy to all examinations. UPC included histopathology results of intestinal metaplasia, gastric mucosal atrophy, dysplasia, adenoma. EBR and UPC detection rate among seniors and trainee vs. senior endoscopists were calculated. Impact of patient-related factors (age, gender, indication for EGD) on EBR was assessed using a linear regression model.

**Results** One thousand one hundred and eighteen procedures performed by 10 attendants (469) and supervised trainees (649) were analysed. The EBR did not differ according to trainee involvement (37.8% vs. 37.6%,  $p = 0.52 \chi^2$ ) but was very variable among seniors (23 - 64%,  $p < 0.005 \chi^2$ ). Overall the UPC detection rate was 34.6%, with no significant difference between the trainees and seniors ( $p = 0.96 \chi^2$ ) after exclusion of patients with known neoplasia or premalignant lesions. 198 (51.8%) of the biopsies were negative and on multivariate analysis, gender, age above 65 and indication of procedure did not influence the UPC detection rate.

**Conclusions** Trainee involvement in EGD doesn't influence the biopsy and UPC detection rates. The EBR within our unit is high and might reflect variable adherence to guidelines.

[1] Januszewicz W, Wieszczy P, Bialek A et al. Endoscopist biopsy rate as a quality indicator for outpatient gastroscopy: a multicenter cohort study with validation. *Gastrointest Endosc.* 2019 Jun;89(6):1141–1149. doi: 10.1016/j.gie.2019.01.008. Epub 2019 Jan 17.

### OP200 APPROPRIATENESS OF COLONOSCOPY INDICATIONS USING CRITERIA ESTABLISHED BY A EUROPEAN PANEL OF EXPERTS: EXPERIENCE IN AN OPEN ACCESS ENDOSCOPY CENTER IN TUNISIA

**Authors** Hammami A<sup>1</sup>, Hassine A<sup>1</sup>, Zinelabidine F<sup>1</sup>, Dahmani W<sup>1</sup>, Ben Ameur W<sup>1</sup>, Elleuch N<sup>1</sup>, Braham A<sup>1</sup>, Ajmi S<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksiaa M<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute** 1 University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0041-1724457

**Citation:** Hammami A, Hassine A, Zinelabidine F et al. OP200 APPROPRIATENESS OF COLONOSCOPY INDICATIONS USING CRITERIA ESTABLISHED BY A EUROPEAN PANEL OF EXPERTS: EXPERIENCE IN AN OPEN ACCESS ENDOSCOPY CENTER IN TUNISIA. *Endoscopy* 2021; 53: S82.

**Aims** Appropriate use of colonoscopy is a key component of quality management in gastrointestinal endoscopy.

The aim of this study was to evaluate the appropriateness of colonoscopy indications in our clinical practice according to EPAGE II criteria.

**Methods** A retrospective study including all colonoscopies from January 2017 to December 2018 was conducted. Patients with incomplete visualization of the entire colon or colonoscopic findings as indication were excluded. The appropriateness of colonoscopy was assessed based on EPAGE II criteria using a scoring system available on the website (<http://www.epage.ch>).

**Results** A total of 1307 patients were included, with a mean age of 54 years [18-94 years] and a sex ratio of 1.2. Most patients were referred by gastroenterologist (78.5%) in an outpatient setting (75.4%). The most common indications for colonoscopy were abdominal pain (21%) and

uncomplicated diarrhea (11.6%). Appropriateness could be assessed in 97.6% of the colonoscopies. In the remaining 2.4% (n=31), the indication of colonoscopy was not listed in the EPAGE guidelines and they were not evaluated. The indication was considered appropriate in 76.5%; it was uncertain in 10.3% and inappropriate in 10.9%. Surveillance after colonic polypectomy and evaluation of known inflammatory bowel disease were the indications exhibiting higher inadequacy. Significant endoscopic lesions were found in 587 colonoscopies, dominated by polyps in 34.2%. A clinically relevant diagnosis was established in 60.4% (n=335). Among patients with significant diagnosis, 89.2% had an appropriate indication, 7% has an uncertain indication and 10.9% had an inappropriate indication. Having an appropriate indication, increasing age (> 50 years) were significantly associated with more relevant finding at colonoscopy (p<0.0001).

**Conclusions** According to EPAGE II criteria, our indications were appropriate in more than 75% of colonoscopies. Using EPAGE II criteria in clinical practice can enable a better selection of colonoscopy referrals and increase the rate of significant lesions detection.

## OP201 ENDOSCOPIC MANAGEMENT OF INDIVIDUALS AT HIGH-RISK OF GASTROINTESTINAL CANCER: A MULTICENTRE SURVEY IN SPAIN

**Authors** López-Vicente J<sup>1</sup>, Rodríguez Alcalde D<sup>1</sup>, Hernández Villalba L<sup>2</sup>, López-Cerón Pinilla M<sup>3</sup>, Ulloa Márquez E<sup>3</sup>EndoCAR study Group  
**Institute** 1 Hospital Universitario de Móstoles, Gastroenterology, Madrid, Spain; 2 Hospital Santos Reyes, Gastroenterology, Aranda de Duero, Spain; 3 Hospital Universitario 12 de Octubre, Gastroenterology, Madrid, Spain  
**DOI** 10.1055/s-0041-1724458

**Citation:** López-Vicente J, Rodríguez Alcalde D, Hernández Villalba L et al. OP201 ENDOSCOPIC MANAGEMENT OF INDIVIDUALS AT HIGH-RISK OF GASTROINTESTINAL CANCER: A MULTICENTRE SURVEY IN SPAIN. *Endoscopy* 2021; 53: S83.

**Aims** Population at increased lifetime risk of gastrointestinal cancer, due to hereditary factors as Lynch syndrome (LS), familial adenomatous polyposis (FAP), hereditary diffuse gastric cancer (HDGC), or due to self-conditions as serrated polyposis syndrome (SPS) or inflammatory bowel disease (IBD), need specific endoscopic surveillance. Recently several European and American Endoscopy Societies have published guidelines concerning the endoscopic management of these high-risk cancer syndromes. The aim of our study was to determine how these patients are handled in our endoscopy units and if guidelines recommendations are followed.

**Methods** An on-line questionnaire was sent to all members of the EndoCAR group, a research group of the Spanish Society of Digestive Endoscopy focused on endoscopic management of patients at high-risk of gastrointestinal cancer. All responses were collected during November 2020.

**Results** Forty-eight endoscopists from 28 Spanish centres filled the online questionnaire. Most of them (91.5%) are involved in a high-risk gastrointestinal cancer unit. Specific endoscopy timetables are scheduled for these patients in 62.5% of procedures. High-definition endoscopy systems are always used for 87.5% of endoscopists, occasionally for 7.5% and never for 5% of them. The use of virtual chromoendoscopy (VCE), dye-based chromoendoscopy (CE) or high definition white-light endoscopy (HD-WLE) in each high-risk group of patients (LS, FAP, SPS, IBD or HDGC) during surveillance is indicated on the table.

**Conclusions** Most endoscopists surveyed use high definition endoscopes during high-risk gastrointestinal cancer patient surveillance, following recent guidelines recommendations. The use of HD-WLE, VCE and CE varies depending on the patient's syndrome or risk condition, and does not always follow guidelines recommendations.

► **Tab. 1** Use of imaging techniques in individuals at high-risk of gastrointestinal cancer.

	HD-VCE	HD-CE	HD-WLE	No HD No CE
LS	40%	25%	20%	15%
SPS	30%	42,5%	15%	12.5%
IBD	25%	65%	2.5%	5%
FAP	27.5%	32.5%	30%	10%

LS: Lynch Syndrome. SPS: Serrated Polyposis Syndrome. IBD: Inflammatory Bowel Disease. FAP: Familial Adenomatous Polyposis. HD: High Definition. VCE: virtual chromoendoscopy. CE: dye-based Chromoendoscopy. WLE: White Light Endoscopy.

## OP202 THE FEASIBILITY STUDY OF POLISH YOUNG ENDOSCOPISTS GROUP FOR UPPER GASTROINTESTINAL PREPARATION SCALE VALIDATION – THE POLPREP SCALE

**Authors** Romańczyk M<sup>1,2</sup>, Ostrowski B<sup>1</sup>, Kozłowska-Petriczko K<sup>3</sup>, Pawlak K<sup>4</sup>, Kurek K<sup>5</sup>, Zatorski H<sup>6</sup>, Koziej M<sup>7</sup>, Romańczyk T<sup>2</sup>, Wosiewicz P<sup>1</sup>, Marek T<sup>1</sup>, Wiechowska-Kozłowska A<sup>3,4</sup>, Małecka-Panas E<sup>6</sup>, Hartleb M<sup>1</sup>  
**Institute** 1 School of Medicine in Katowice, Medical University of Silesia, Chair and Department of Gastroenterology and Hepatology, Katowice, Poland; 2 H-T. Centrum Medyczne, Endoterapia, Tychy, Poland; 3 SONOMED Medical Center, Endoscopy Unit, Szczecin, Poland; 4 Department of Gastroenterology, Hospital of the Ministry of Internal Affairs in Szczecin, Szczecin, Poland; 5 Department of Gastroenterology and Internal Medicine, Medical University of Białystok, Białystok, Poland; 6 Department of Digestive Tract Diseases, Medical University of Lodz, Łódź, Poland; 7 Department of Anatomy, Jagiellonian University Medical College, Kraków, Poland  
**DOI** 10.1055/s-0041-1724459

**Citation:** Romańczyk M, Ostrowski B, Kozłowska-Petriczko K et al. OP202 THE FEASIBILITY STUDY OF POLISH YOUNG ENDOSCOPISTS GROUP FOR UPPER GASTROINTESTINAL PREPARATION SCALE VALIDATION – THE POLPREP SCALE. *Endoscopy* 2021; 53: S83.

**Aims** Mucosal cleanliness is crucial for detection of abnormalities of mucosa during endoscopic examinations. Although numerous preparation scales for colonoscopy have been worked-out, no validated scale for upper gastrointestinal tract has been developed so far. The aim of our study was to develop and validate easy to use upper gastrointestinal scale estimating quality of mucosal visibility.

**Methods** We have developed four-point scale (0-3) assessing mucosal visibility in the esophagus, stomach and duodenum. This scale was used twice by 12 endoscopists (7 trainees and 5 consultants) to assess 18 photographs of esophagus, stomach and duodenum (second time after two weeks). Inter- and intra-observer reproducibility was calculated. Photo documentation obtained according to ESGE guidelines and endoscopy report of 443 patients who underwent complete diagnostic esophagogastroduodenoscopy (EGD) in 6 endoscopic centers were retrospectively analyzed. Photographs were assessed according to POLPREP scale by two independent clinicians. Endoscopic data: reflux esophagitis, endoscopic suspicion of esophageal metaplasia, esophageal tumors, cervical inlet patch, gastric tumors, gastric polyps and ulcers, duodenal ulcers, duodenal polyps, post-ulcer duodenal bulb deformation and duodenal tumor was recorded.

**Results** The inter-observer reproducibility in use of POLPREP was 0.8 (0.85 for trainees and 0.79 for consultants). The Fleiss Kappa value estimating intra-



observer reproducibility was 0.64 (the value was equal in whole assessed group, trainees and consultants). The inter-observer reproducibility values for esophagus, stomach and duodenum were: 0.74, 0.83 and 0.82, respectively. The difference in detection rate of endoscopic findings for inadequate preparation (points 1) and adequate preparation (points 2 and 3) among assessed segments was statistically significant (7.7% and 19.7% respectively;  $p=0.049$ ). The odds ratio for the detection of abnormalities was 3.2 for point 3 in comparison to point 1 (95%CI 1.1-9;  $p=0.03$ ).

**Conclusions** The POLPREP scale might be a potential tool to inform about mucosal visibility in EGD.

Saturday, 27 March 2021

14:00 – 14:45

How to minimise bleeding after EMR/ESD

Room 6

## OP203 CLINICAL VALIDATION OF ACER, GSSED-RE, GSSED-RE2 SCORES FOR PREDICTION OF DELAYED BLEEDING AFTER ENDOSCOPIC MUCOSAL RESECTION OF LARGE COLORECTAL LESIONS

**Authors** Kamal A<sup>1</sup>, Akshintala VS<sup>1</sup>, Rex DK<sup>2</sup>, Ichkanian Y<sup>2</sup>, Hasan MK<sup>3</sup>, Pleskow D<sup>4</sup>, Elmunzer BJ<sup>5</sup>, Elias PA<sup>5</sup>, Mathew A<sup>6</sup>, Pellise M<sup>7</sup>, Law R<sup>8</sup>, Kavuri SB<sup>1</sup>, Kamal MM<sup>1</sup>, Pohl H<sup>9</sup>, Khashab MA<sup>1</sup> Large Polyp Study Consortium  
**Institute 1** Johns Hopkins Hospital, Division of Gastroenterology and Hepatology, Baltimore, United States; **2** Department of Gastroenterology, Indiana University School of Medicine, Indianapolis, United States; **3** Florida Hospital, Center for Interventional Endoscopy, Orlando, United States; **4** Beth Israel Deaconess Medical Center, Division of Gastroenterology, Boston, United States; **5** Medical University of South Carolina, Division of Gastroenterology and Hepatology, Charleston, United States; **6** Penn State Hershey Medical Center, Division of Gastroenterology and Hepatology, Hershey, United States; **7** Hospital Clínic de Barcelona, Gastroenterology Department, Barcelona, Spain; **8** Mayo Clinic, Rochester, United States; **9** Dartmouth Geisel School of Medicine, Hanover, United States

DOI 10.1055/s-0041-1724467

**Citation:** Kamal A, Akshintala VS, Rex DK et al. OP203 CLINICAL VALIDATION OF ACER, GSSED-RE, GSSED-RE2 SCORES FOR PREDICTION OF DELAYED BLEEDING AFTER ENDOSCOPIC MUCOSAL RESECTION OF LARGE COLORECTAL LESIONS. *Endoscopy* 2021; 53: S84.

**Aims** Several risk factors have been proposed to predict delayed bleeding (DB) after EMR of large colon polyps. Three prediction models (ACER, GSSED-RE, GSSED-RE2) evaluated risk factors, of which GSSED-RE2 reported the highest prediction scores (AUC 0.71). We aimed to validate these three scoring systems for their accuracy to predict DB.

**Methods** Patients with a  $\geq 20$ mm non-pedunculated colon polyp evaluated in a multicenter, randomized trial conducted at 18 centers in North America and Spain (4/2013-10/2017) were included. Scoring systems identified age  $>75$  yrs, ASA  $\geq 3$ , polyp size, proximal polyp location, antithrombotic use, epinephrine use, and clip closure as predicting factors. Risk of DB was classified as low, medium, and high. A high risk score was considered accurate if a patient classified as high risk for DB had a severe bleeding event.

**Results** A total of 919 patients (mean age  $65.13 \pm 9.62$  years, male 59.5%) were included. DB was observed in 49 (5.3%) patients. 610 (66.3%) patients had a large polyp in the proximal. 195 (21.2%), 58 (6.3%) and 103 (11.2%) patients were classified as high risk for DB by ACER, GSSED-RE and GSSED-RE2, respectively. DB, however, occurred in less than 10% among those patients classified as high risk, resulting in high specificity but low sensitivity across the three scoring systems (table). The overall predictive performance of the three scoring systems among patients classified as high risk was similarly poor with AUROC's of

0.57 (95% CI, 0.49-0.66) for ACER, 0.52 (95% CI, 0.43-0.61) for GSSED-RE, 0.53 (95% CI, 0.44-0.67) for GSSED-RE2, respectively.

**Conclusions** Current models are suboptimal in predicting DB after EMR of large colon polyps when validated in a large external cohort of a randomized trial. Improved scoring systems are needed, likely with the use of novel statistical techniques.

► Tab. 1

Scoring system	Patients classified as high risk, n (%)	Patients with true DB event, n (%)	Sensitivity/Specificity/Accuracy	AUROC (95% CI)
ACER	195 (21.2)	17 (8.7)	35.4/79.3/77.0	0.57 (0.49-0.66)
GSSED-RE	58 (6.3)	5 (8.6)	10.4/93.9/89.5	0.52 (0.43-0.61)
GSSED-RE2	103 (11.2)	8 (7.8)	16.7/89.1/85.3	0.53 (0.44-0.67)

## OP204 PROPHYLACTIC CLIPPING FOR THE PREVENTION OF DELAYED BLEEDING AFTER NON-PEDUNCULATED COLORECTAL POLYP RESECTION: AN INDIVIDUAL PATIENT DATA META-ANALYSIS

**Authors** Turan A<sup>1</sup>, Pohl H<sup>2</sup>, Matsumoto M<sup>3</sup>, Lee B<sup>4</sup>, Aizawa M<sup>5</sup>, Desideri F<sup>6,7</sup>, Albéniz E<sup>8</sup>, Raju G<sup>9</sup>, Luba D<sup>1,0</sup>, Barret M<sup>11</sup>, Gurudu S<sup>12</sup>, Ramirez F<sup>12</sup>, Lin W-R<sup>13</sup>, Atsma F<sup>14</sup>, Rex D<sup>15</sup>, Lim B<sup>4,16</sup>, Kwok K<sup>17</sup>, Togashi K<sup>5</sup>, Coriat R<sup>11</sup>, Umar S<sup>12</sup>, C-W Chen<sup>13</sup>, Terhaar sive Droste J<sup>18</sup>, Schrauwen R<sup>19</sup>, Kemper G<sup>1</sup>, Siersema P<sup>1</sup>, van Geenen E<sup>1</sup>

**Institute 1** Department of Gastroenterology and Hepatology, Radboudumc, Nijmegen, Netherlands; **2** VA White River Junction, Section of Gastroenterology and Hepatology, Vermont, United States; **3** Department of Gastroenterology, Sapporo Medical Center NTT EC, Sapporo, Japan; **4** Department of Internal Medicine, University of California, Riverside School of Medicine, Riverside, California, United States; **5** Department of Coloproctology, Aizu Medical Center Fukushima Medical University, Aizuwakamatsu, Japan; **6** Sant'Andrea Hospital, Sapienza University of Rome, Digestive and Liver Disease Department, Endoscopy Unit, Rome, Italy; **7** Gastroenterology Department, San Maurizio Hospital, Bolzano, Italy; **8** Department of Gastroenterology, Complejo Hospitalario de Navarra, Navarrabiomed Biomedical Research Center, UPNA, IdiSNA, Pamplona, Spain; **9** University of Texas MD Anderson Cancer Center, Houston, United States; **10** Monterey Bay Gastroenterology Consultants, Monterey, United States; **11** Department of Gastroenterology, Cochin Hospital, AP-HP, Université de Paris, Paris, France; **12** Department of Gastroenterology, Mayo Clinic, Scottsdale, United States; **13** Department of Gastroenterology and Hepatology, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan, Province of China; **14** Department of IQ Healthcare, Radboudumc, Radboud Institute for Health Sciences, Nijmegen, Netherlands; **15** Department of Gastroenterology and Hepatology, Indiana University School of Medicine, Indianapolis, United States; **16** Department of Gastroenterology, Kaiser Permanente Riverside Medical Center, Riverside, United States; **17** Department of Gastroenterology, Kaiser Permanente Los Angeles Medical Center, Los Angeles, United States; **18** Department of Gastroenterology and Hepatology,

Jeroen Bosch Hospital, 's Hertogenbosch, Netherlands; 19 Department of Gastroenterology and Hepatology, Bernhoven Hospital, Uden, Netherlands  
DOI 10.1055/s-0041-1724468

**Citation:** Turan A, Pohl H, Matsumoto M et al. OP204 PROPHYLACTIC CLIPPING FOR THE PREVENTION OF DELAYED BLEEDING AFTER NON-PEDUNCULATED COLORECTAL POLYP RESECTION: AN INDIVIDUAL PATIENT DATA META-ANALYSIS. *Endoscopy* 2021; 53: S84.

**Aims** Non-pedunculated colorectal polyps are usually endoscopically removed to prevent neoplastic progression. Delayed bleeding is the most common adverse event. Clipping of the resection defect has been suggested to reduce delayed bleedings. The aim of this study was to determine if prophylactic clipping reduces delayed bleedings and to analyze the contribution of polyp characteristics, extent of defect closure and routine antithrombotic use.

**Methods** An Individual Patient Data Meta-Analysis (IPDMA) was performed. Studies on prophylactic clipping in non-pedunculated colorectal polyps were selected from PubMed, Embase, Web of Science and Cochrane database (last selection: April 2020) and authors of eligible studies were invited to share original study data. The primary outcome was delayed bleeding  $\leq 30$  days. Multivariable mixed modeling was used to determine the efficacy of prophylactic clipping in various subgroups adjusted for confounders. Sensitivity analyses were performed on a per patient and polyp level.

**Results** Data of 5,380 patients with 8,948 resected polyps were included from three RCT's, two prospective and eight retrospective studies. Prophylactic clipping was found to reduce delayed bleeding in proximal polyps  $\geq 20$  mm (adjusted OR 0.62; 95% CI 0.44 – 0.88;  $p < 0.01$ ), especially when patients used routine antithrombotics and when complete closure of the resection defect was achieved. Prophylactic clipping did not benefit distal polyps  $\geq 20$  mm when patients used routine antithrombotics (adjusted OR 1.41; 95% CI 0.79 – 2.52;  $p = 0.24$ ). Sensitivity analyses confirmed these results.

**Conclusions** Prophylactic clipping reduces delayed bleeding after resection of non-pedunculated proximal colorectal polyps  $\geq 20$  mm, especially when patients use routine antithrombotics and when complete closure is achieved. No benefit was found for distal polyps  $\geq 20$  mm, independent of antithrombotic use. Our results further identify which patients may benefit from prophylactic clipping.

## OP205 EFFECT OF CLIP CLOSURE ON OUTCOMES AFTER RESECTION OF LARGE SERRATED POLYPS: RESULTS FROM A RANDOMIZED TRIAL

**Authors** Crockett SD<sup>1</sup>, Khashab M<sup>2</sup>, Rex DK<sup>3</sup>, Grimm IS<sup>1</sup>, Levenick JM<sup>4</sup>, Moyer MT<sup>4</sup>, Pohl H<sup>5</sup> Large Polyp Study Consortium

**Institute** 1 University of North Carolina School of Medicine, Division of Gastroenterology and Hepatology, Chapel Hill, United States; 2 Johns Hopkins Hospital, Division of Gastroenterology and Hepatology, Baltimore, United States; 3 Department of Gastroenterology, Indiana University School of Medicine, Indianapolis, United States; 4 Penn State Hershey Medical Center, Division of Gastroenterology and Hepatology, Hershey, United States; 5 Dartmouth Geisel School of Medicine, Hanover, United States  
DOI 10.1055/s-0041-1724469

**Citation:** Crockett SD, Khashab M, Rex DK et al. OP205 EFFECT OF CLIP CLOSURE ON OUTCOMES AFTER RESECTION OF LARGE SERRATED POLYPS: RESULTS FROM A RANDOMIZED TRIAL. *Endoscopy* 2021; 53: S85.

**Aims** Sessile serrated lesions (SSL) are most commonly located in the proximal colon, where post-polypectomy bleeding rates are higher. There is limited clinical trial evidence to guide best practices for resection of large serrated polyps (LSP), and whether clip closure of the resection defect is beneficial.

**Methods** In a multicenter international trial, patients with large ( $\geq 20$ mm) non-pedunculated polyps were randomized to either clipping of the polypectomy defect or not. This analysis is limited to participants with study polyps that had serrated histology [SSL, hyperplastic polyps (HP), or traditional serrated adenomas (TSA)], comparing those randomized to clip vs. control group. The primary outcome was severe post-procedure bleeding within 30 days of colonoscopy. Secondary outcomes included risk of other serious adverse events.

**Results** 195 participants with 220 serrated study polyps were included in the study. Polyps included 198 SSLs, 14 TSAs, and 8 HPs. The mean age was 63 (SD 9.9), and 53.3% were female. 39 (20%) participants used antithrombotic medications, including a higher proportion in the control vs clip group (26% vs 14%,  $p = 0.038$ ). Median size of LSPs was 25mm (IQR 20, 30), and 85% were located in the proximal colon. 99 patients were assigned to clip closure and 96 were assigned to control. Overall, 7 patients (3.6%) experienced post-procedure bleeding. There was no difference in post-procedure bleeding rates between patients in the clip vs control group (4.2% vs 3.0% respectively,  $p = 0.48$ ). 1 patient each had a perforation and post-polypectomy syndrome, both in the control group.

**Conclusions** Results from this clinical trial demonstrate that the post-polypectomy bleeding rate for  $\geq 20$ mm serrated polyps removed via EMR is low, and that there was not a clear benefit of prophylactic clipping of the polypectomy defect in this group. This study suggests that endoscopic clipping may not be necessary to prevent post-polypectomy bleeding after resection of LSPs.

► Tab. 1

	Total (n = 195)	Clip group (n = 99)	Control group (n = 96)	P value
Severe adverse events, n (%)	10 (5.1)	4 (4.0)	6 (6.2)	0.484
Post-procedure bleeding, n (%)	7 (3.6)	3 (4.2)	4 (3.0)	0.483
Proximal/distal, n (%)	5 (2.6)/2 (1.0)	1 (1.0)/2 (2.0)	4 (4.0)/0	
Perforation, n (%)	1 (0.5)	0	1 (1.0)	
Post-polypectomy syndrome/abdominal pain, n (%)	2 (0.5)	1 (1.0)	1 (1.0)	

## OP206 EFFICACY AND SAFETY OF ENDOSCOPIC PIECEMEAL MUCOSAL RESECTION, SUBMUCOSAL DISSECTION AND HYBRID-SUBMUCOSAL DISSECTION OF COLORECTAL SUPERFICIAL NEOPLASTIC LESIONS: EXPERIENCE OF AN ITALIAN TERTIARY REFERRAL CENTRE

**Authors** Papparella LG<sup>1</sup>, Barbaro F<sup>1</sup>, Pecere S<sup>1</sup>, Gibiino G<sup>1</sup>, Burrelli Scotti G<sup>1</sup>, Boskoski I<sup>1</sup>, Petruzzello L<sup>1</sup>, Costamagna G<sup>1</sup>

**Institute** 1 Fondazione Policlinico Universitario Agostino Gemelli IRCCS Università Cattolica del Sacro Cuore – Centre for Endoscopic Research Therapeutics and Training (CERTT), Rome, Italy  
DOI 10.1055/s-0041-1724470

**Citation:** Papparella LG, Barbaro F, Pecere S et al. OP206 EFFICACY AND SAFETY OF ENDOSCOPIC PIECEMEAL MUCOSAL RESECTION, SUBMUCOSAL DISSECTION AND HYBRID-SUBMUCOSAL DISSECTION OF COLORECTAL SUPERFICIAL NEOPLASTIC LESIONS: EXPERIENCE OF AN ITALIAN TERTIARY REFERRAL CENTRE. *Endoscopy* 2021; 53: S85.

**Aims** To compare the efficacy and safety of Endoscopic Piecemeal Mucosal Resection (EPMR), Endoscopic submucosal dissection (ESD) and Hybrid-

Endoscopic Submucosal Dissection (H-ESD) of large colorectal superficial neoplastic lesions in a referral Western Endoscopic Centre.

**Methods** This is a retrospective analysis on a prospective medical database of consecutive colorectal superficial neoplastic lesions larger than 20 mm, resected by EPMR, ESD or H-ESD collected from 2015 to 2019.

**Results** Two hundred twenty nine colorectal superficial neoplastic lesions were included. All lesions were completely endoscopically resected, 151 (65.9%) by EPMR, 45 (19.7%) by ESD and 33 (14.4%) by H-ESD. Median lesion size was 35 mm (IQR 25 -50 mm). Endoscopic control after index procedure was available for 186 (81.2%) lesions. A second surveillance procedure was available in 149 patients (80%). The overall recurrence rate was 13.2%, 0% and 6.1% for EPMR, ESD and H-ESD respectively, with a significant difference between EPMR and ESD ( $p < 0.001$ ). Risk factors of recurrence in EPMR were: rectal location and size  $> 40$  mm. All recurrences were endoscopically treated during follow up procedures. The complete resection rate after the last endoscopic control available was 99.3% in EPMR, 100% in ESD and H-ESD. Risk of complications was not significantly different between the three groups.

**Conclusions** EPMR, ESD and H-ESD are effective and safe procedures for colorectal neoplastic lesions. Recurrence rate in EPMR was higher than ESD but it's not a significant clinical problem as with strict endoscopic surveillance it can be managed endoscopically with high success rates.

EMR performed by an experienced EMR practitioner, in referral centers, should be considered a potential first-line therapy for large colorectal superficial neoplastic lesions. We believe that the additional costs associated with ESD are difficult to justify for lesions with a low risk of containing carcinoma.

## OP207 A RISK SCORE FOR DELAYED BLEEDING AFTER COLORECTAL ESD FROM A COHORT OF MORE THAN 500 PROCEDURES

**Authors** Albouys J<sup>1</sup>, Legros R<sup>1</sup>, Dahan M<sup>1</sup>, Lepetit H<sup>1</sup>, Geyl S<sup>1</sup>, Jacques J<sup>1</sup>

**Institute** 1 CHU Limoges, Limoges, France

**DOI** 10.1055/s-0041-1724471

**Citation:** Albouys J, Legros R, Dahan M et al. OP207 A RISK SCORE FOR DELAYED BLEEDING AFTER COLORECTAL ESD FROM A COHORT OF MORE THAN 500 PROCEDURES. *Endoscopy* 2021; 53: S86.

**Aims** ESD allows en bloc resection rates of over 90%, thus allowing recurrence rates ranging from 1.3 to 3%.

Delayed bleeding is, along with perforation, one of the most frequent adverse effects with rates ranging from 0.5 to 9.5% according to the literature.

**Methods** This is a prospective single-center cohort study of all colorectal ESD conducted in a university hospital center for neoplastic epithelial lesions.

In order to identify the factors causing delayed bleeding, we compared the group with delayed bleeding and the group without bleeding according to the patient, lesion and procedure characteristics.

**Results** Between February 2013 and May 2020, 543 colorectal ESDs (312 colonic and 231 rectal) were performed with a greater mean diameter of 59 mm for a mean procedure duration of 92.95 mm. Delayed bleeding occurred in 39 patients (7.18%).

In multivariate analysis, the risk factors for bleeding were size  $> 50$  mm (OR: 7.85; confidence interval 2.367- 26.047;  $p = 0.001$ ), age  $> 75$  years (OR: 2.76, confidence interval 1.375-5.569;  $p = 0.004$ ) and anticoagulant or antiaggregant use (OR: 1.87; confidence interval 0.920-3.809;  $p = 0.084$ ).

These 3 factors were included in a bleeding risk score with a weighting according to the Odds Ratio.

A score less than or equal to 3 (low risk) is associated with a delayed bleeding risk of 3.5%, while a score of 4 (middle risk) or 5 (high risk) is associated with a risk of 11.6% and 28.8% respectively ( $p < 0.05$ ).

**Conclusions** In a cohort of 543 colorectal ESDs, the main risk factors for delayed bleeding are height  $> 50$ mm, age  $> 75$  years and anti-aggregation or anticoagulant treatment. Our score established using these risk factors allows us to evaluate low-risk and high-risk procedures

Saturday, 27 March 2021

15:00 – 15:45

New exciting technologies in upper GI endoscopy

Room 5

## OP208 MAGNETIC GASTROINTESTINAL UNIVERSAL SEPTOTOME: FIRST RESULTS OF A PILOT STUDY IN ESOPHAGEAL EPIPHRENIC DIVERTICULUM

**Authors** Huberland F<sup>1</sup>, Delattre C<sup>2</sup>, Cauche N<sup>2</sup>, Van Ouytsel P<sup>3</sup>, Delchambre A<sup>4</sup>, Devière J<sup>3</sup>, Rio-Tinto R<sup>5</sup>, Blero D<sup>3</sup>

**Institute** 1 Electro and Mechanical Systems Department, Université Libre de Bruxelles, Bio, Brussels, Belgium; 2 Brussels Medical Device Center, Brussels, Belgium; 3 Department of Gastroenterology, Hepatopancreatology and Digestive Oncology, Erasme Hospital, Université Libre de Bruxelles, Brussels, Belgium; 4 Electro and Mechanical Systems Department, Université libre de Bruxelles, Bio, Brussels, Belgium; 5 Champalimaud Foundation, Gastroenterology, Lisbon, Portugal

**DOI** 10.1055/s-0041-1724472

**Citation:** Huberland F, Delattre C, Cauche N et al. OP208 MAGNETIC GASTROINTESTINAL UNIVERSAL SEPTOTOME: FIRST RESULTS OF A PILOT STUDY IN ESOPHAGEAL EPIPHRENIC DIVERTICULUM. *Endoscopy* 2021; 53: S86.

**Aims** In absence of motility disorders, treatment of symptomatic epiphrenic esophageal diverticulum (EED) is challenging. We have developed a specific device which provides marsupialization of EED after placement of two magnets on each sides of the septum of the diverticulum, linked by a self retractable suture wire, called MAGUS (Magnetic Gastrointestinal Universal Septotome). Once inserted, magnets and self-retractable surgical wire induce a progressive ischemia, leading to tissue necrosis and ultimately its section. We initiated a prospective human study to evaluate technical success, clinical outcome and safety following MAGUS insertion in patient presenting with symptomatic diverticulum.

**Methods** Insertion procedures were done under general anesthesia. MAGUS delivery system is advanced over a guidewire in the esophagus. Under endoscopic guidance proximal magnet is mobilized inside the diverticulum and placed at the bottom of it. Under fluoroscopic guidance the distal magnet is pulled on the esophageal side at the level of the proximal intradiverticular magnet until magnetic apposition occurs. Clinical outcome were followed prospectively.

**Results** During September and October 2020, two men of 73 and 56 years old displaying symptomatic EED were enrolled. Diverticulum and septum sizes measure 52.5 and 21.5 mm in the first one and 58 and 32 mm in the second patient. Technical implantation was successful in both. Device insertion time took 12 and 15 minutes. No clinical adverse event related to the procedure was observed. The magnets migrated spontaneously in the first patient and required an additional endoscopy for retrieval in the second one. One month after insertion, Eckardt score dropped from 2 to 1 and from 6 to 2 respectively.

**Conclusions** Marsupialization of EED using MAGUS system seems to be safe and effective in the two first patients included in a pilot trial, allowing to consider that MAGUS could become one of the endoscopic treatment of symptomatic EED.

## OP209V SUBMUCOSAL TUNNELLING ENDOSCOPIC RESECTION (STER) WITH INTRA-TUNNEL MORCELLATION FOR A GIANT ESOPHAGEAL LEIOMYOMA

**Authors** Bapaye A<sup>1</sup>, Gandhi A<sup>1</sup>, Dharamsi S<sup>1</sup>, Jain R<sup>1</sup>, Bapaye H<sup>2</sup>

**Institute** 1 Deenanath Mangeshkar Hospital & Research Center, Shivanand Desai Center for Digestive Disorders, Pune, India; 2 Byramjee Jeejeebhoy Medical College, Pune, India

**DOI** 10.1055/s-0041-1724473

**Citation:** Bapaye A, Gandhi A, Dharamsi S et al. OP209V SUBMUCOSAL TUNNELLING ENDOSCOPIC RESECTION (STER) WITH INTRA-TUNNEL

MORCELLATION FOR A GIANT ESOPHAGEAL LEIOMYOMA. *Endoscopy* 2021; 53: S86.

**Introduction** Submucosal tunnelling endoscopic resection (STER) recommended for esophageal subepithelial tumors <4cm. Resection of larger lesions is technically challenging. Video demonstrates STER for giant esophageal leiomyoma.

**Patient and methods** 37-years male c/o dysphagia. CT-scan, EGD, EUS-FNA – leiomyoma (6x2.5x4cm) in MP layer at 20cm. STER – SM tunnel from 17cm; tumor enucleated from MP layer; intra-tunnel morcellation of tumor performed; specimen delivered; mucosal closure by endoclips.

**Results** Procedure time 210min. No adverse events. Contrast swallow confirmed no leak. 1-month follow up EGD – healthy mucosal scar. Dysphagia resolved.

**Conclusions** STER can be performed for giant esophageal SET's using intracorporeal morcellation technique.

## OP210 ANTI-REFLUX MUCOSAL ABLATION (ARMA) FOR REFRACTORY GASTROESOPHAGEAL REFLUX DISEASE – AN INTERIM ANALYSIS

**Authors** Kalapala R<sup>1</sup>, Jagtap N<sup>1</sup>, Nabi Z<sup>1</sup>, Darisetty S<sup>2</sup>, Kanakagiri H<sup>2</sup>, Goud R<sup>1</sup>, Karaympudi A<sup>1</sup>, Reddy DN<sup>1</sup>

**Institute** 1 Asian Institute of Gastroenterology, Medical Gastroenterology, Hyderabad, India; 2 Asian Institute of Gastroenterology, Anaesthesia, Hyderabad, India

**DOI** 10.1055/s-0041-1724474

**Citation:** Kalapala R, Jagtap N, Nabi Z et al. OP210 ANTI-REFLUX MUCOSAL ABLATION (ARMA) FOR REFRACTORY GASTROESOPHAGEAL REFLUX DISEASE – AN INTERIM ANALYSIS. *Endoscopy* 2021; 53: S87.

**Aims** Proton pump inhibitor (PPI) refractory gastroesophageal reflux disease (GERD) is major clinical problem. Minimally invasive endoscopic therapies are being developed such as anti-reflux mucosal ablation. We describe safety and short term efficacy of ARMA in PPI-refractory GERD.

**Methods** In this single center, prospective single arm ongoing interventional trial evaluating the outcome of ARMA in 29 patients with PPI refractory GERD. GERD – Health Related Quality of Life Questionnaire (GERD-HRQL) evaluation was analyzed at baseline, 3 and 6 months in 20 patients and compared using ANOVA of repeated measures. Impedance-pH monitoring was performed in all patients at baseline and at 3 months in 10 patients and compared using paired t test. The p value of <0.05 was considered as statistically significant.

**Results** A total of 29 patients (Mean age (SD) 39.59 (12.33) years; 10 female) underwent ARMA between September 2019 to September 2020. Mean procedure time was 29 (range 24 – 30) minutes. There were no major adverse event and all patients were discharged within 48 hours. Mean GERD-HRQL was improved from 39.90 (8.39) at baseline to 9.15 (6.66) at 3 months and 4.85 (5.17) at 6 months (p 0.001). There was significant improvement in heart burn and regurgitation score at 3 and 6 months (p 0.0001). There is trend towards improvement in DeMeester Score (41.52 (52.01) to 25.66 (43.08); p 0.415) and acid exposure time (24.48 (9.45) to 8.23 (14.68); p 0.048) from baseline to 3 months.

**Conclusions** Our initial results shown that ARMA is safe endoscopic therapeutic option for PPI-refractory GERD with significant improvement in symptoms. Objective acid reflux parameters will be studied at 12 months.

► Tab. 1

Parameter	Base-line	3month	6 month	P value
GERD HRQL (n = 20)	39.90 (8.39)	9.15 (6.66)	4.85 (5.17)	0.001
Heart burn score (n = 20)	19.05 (11.51)	5.35 (5.78)	2.70 (2.85)	0.000-1
Regurgitation score (n = 20)	20.45 (8.40)	3.45 (5.30)	2.15 (3.76)	0.000-1
Acid Exposure time (n = 10)	24.48 (9.45)	8.23 (14.68)		0.048

## OP211V RESOLUTION OF PYLORIC STENOSIS USING LUMEN-APPOSING METAL STENT THROUGH THE PYLORUS

**Authors** Chálim Rebelo C<sup>1</sup>, Nunes N<sup>1</sup>, Flor de Lima M<sup>1</sup>, Moura DB<sup>1</sup>, Santos MP<sup>1</sup>, Costa Santos V<sup>1</sup>, Rego AC<sup>1</sup>, Pereira JR<sup>1</sup>, Paz N<sup>1</sup>, Duarte MA<sup>1</sup>

**Institute** 1 Gastroenterology Department, Hospital do Divino Espírito Santo de Ponta Delgada, Ponta Delgada, Portugal

**DOI** 10.1055/s-0041-1724475

**Citation:** Chálim Rebelo C, Nunes N, Flor de Lima M et al. OP211V RESOLUTION OF PYLORIC STENOSIS USING LUMEN-APPOSING METAL STENT THROUGH THE PYLORUS. *Endoscopy* 2021; 53: S87.

78-years-old woman presents with vomiting. Endoscopy showed pyloric stenosis, refractory to balloon dilation. MRI disclosed a mass of the pancreatic head. Was decided for endoscopic treatment.

A guidewire was passed through the pylorus. Then a 20x10mm LAMS (HotAxios BostonScientific) was inserted: distal flange was deployed in a post-pyloric position while the proximal flange was deployed in the stomach. No complications registered. She's still asymptomatic.

LAMS, with its configuration and anchoring flanges with larger diameter (29mm), are associated with lower migration rates. They can become an effective and safe option in the treatment of malignant pyloric stenosis refractory to dilation.

## OP212 ENDOSCOPIC BAND LIGATION WITHOUT RESECTION OF SMALL-SIZED SUBEPITHELIAL TUMOURS: RESULTS IN LONG-TERM FOLLOW UP OF A MULTICENTRE PROSPECTIVE STUDY (BANDING-SET)

**Authors** Bas-Cutrina F<sup>1</sup>, Loras C<sup>2</sup>, Pardo A<sup>3</sup>, Ballester-Clau R<sup>4</sup>, Huertas C<sup>5</sup>, Guarnier-Argente C<sup>6</sup>, Colán-Hernández J<sup>7</sup>, Consiglieri CF<sup>1</sup>, Andujar X<sup>8</sup>, Vilanova-Serra M<sup>3</sup>, González-Huix F<sup>9</sup>, Pardo-Grau L<sup>5</sup>, Maisterra S<sup>10</sup>, Ruiz-Ramírez P<sup>8</sup>, Garcia-Sumalla A<sup>10</sup>, Gornals JB<sup>10</sup>

**Institute** 1 Endoscopy Unit, Digestive Diseases Department, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain; 2 Endoscopy Unit, Department of Digestive Diseases, Hospital Universitari Mútua de Terrassa, Terrassa, Catalonia, Spain; 3 Department of Digestive Diseases, Hospital Universitari Joan XXIII de Tarragona, Tarragona, Catalonia, Spain; 4 Endoscopy Unit, Department of Digestive Diseases, Hospital Universitari Arnau de Vilanova de Lleida, Lleida, Catalonia, Spain; 5 Department of Digestive Diseases, Hospital Universitari de Girona Doctor Josep Trueta, Girona, Catalonia, Spain; 6 Endoscopy Unit, Digestive Pathology Service, Hospital de la Santa Creu i Sant Pau, Barcelona, Catalonia, Spain; 7 Department of Digestive Diseases, Hospital Universitari Germans Trias i Pujol (Can Ruti), Badalona, Barcelona, Catalonia, Spain; 8 Endoscopy Unit, Department of Digestive Diseases, Hospital



Universitari Mútua de Terrassa, Terrassa, Barcelona, Catalonia., Spain; **9** Endoscopy Unit, Department of Digestive Diseases, Hospital Universitari Arnau de Vilanova de Lleida, Lleida, Catalonia., Spain; **10** Endoscopy Unit, Digestive Diseases Department, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Catalonia., Spain  
DOI 10.1055/s-0041-1724476

**Citation:** Bas-Cutrina F, Loras C, Pardo A et al. OP212 ENDOSCOPIC BAND LIGATION WITHOUT RESECTION OF SMALL-SIZED SUBEPITHELIAL TUMOURS: RESULTS IN LONG-TERM FOLLOW UP OF A MULTICENTRE PROSPECTIVE STUDY (BANDING-SET). *Endoscopy* 2021; 53: S87.

**Aims** Endoscopic band ligation (EBL) without resection combined with a single-incision needle-knife (SINK) biopsy is a little reported option in the management of subepithelial tumours (SET). The main aim was to determine the effectiveness of this technique in small-sized SETs: technical and clinical success, diagnostic yield of biopsy, involvement in clinical management, and associated adverse events.

**Methods** Prospective multicentre study. Inclusion criteria: SET ≤15-mm, confirmed by endoscopic ultrasound (EUS). Technical success: complete EBL of the SET plus SINK biopsy. Clinical success: SET total disappearance. Clinical controls: recovery at first 6 hours, calling at 48 hours and 7 days. EUS control at 4-6 weeks and 12 months. ClinicalTrials.gov register: NCT03247231.

**Results** Seven centres, including 122 cases; control 4-6 weeks n = 121; control 12 months n = 90. Esophagus n = 7, stomach n = 94, duodenum n = 20, rectum n = 1. SET medium size: 9-mm (3.5-15 mm). Technical success: 86.9% (n = 106/122). Clinical success 4-6w: 77.7% (n = 94/121); 12m: 61.8% (n = 56/90). Implication in changing SET clinical management: 79.4% (n = 85/107). SET ≤10-mm vs. >10-mm subanalysis: technical success 96.4 vs. 66.7%; clinical success 4-6w 91.6 vs. 44.7%; 12m 83.3 vs. 30.6%; clinical management change 91.4 vs. 56.8%. SET dependence of superficial vs. deep layer subanalysis: technical success 91 vs. 79.6%; clinical success 4-6w 80.8 vs. 69.8%; 12m 68.3 vs. 48.2%; clinical management change 84.5 vs. 69.4%. Pathological diagnosis: 66% (n = 62/94). Six mild adverse events (4.9%), 5 related to the technique (4.1%): bleeding (n=2), pain (n=2), mucosal laceration; one not directly related to it (0.8%): bronchoaspiration by sedation.

**Conclusions** EBL without resection supplemented with SINK biopsy is a feasible and safe endoscopic technique in small-sized SETs. Technical limitations and clinical success are associated with the SET size and deep layers dependence. In SETs not exceeding 10-mm and depending on superficial gastrointestinal layers is where the technique has a greater impact on its clinical management.

► Tab. 1

	SET ≤10-mm	SET >10-mm	Superficial layer	Deep layer
<b>Technical success YES</b>	80/83 (96.4%)	26/39 (66.7%)	71/78 (91.0%)	35/44 (79.6%)
<b>Clinical success 4-6w YES</b>	76/83 (91.6%)	17/38 (44.7%)	63/78 (80.8%)	30/43 (69.8%)
<b>Clinical success 12m YES</b>	45/54 (83.3%)	11/36 (30.6%)	43/63 (68.3%)	13/27 (48.2%)
<b>Clinical management change YES</b>	64/70 (91.4%)	21/37 (56.8%)	60/71 (84.5%)	25/36 (69.4%)

Saturday, 27 March 2021

15:00 – 15:45

Colonic polyp characterisation guides your therapy Room 6

## OP213 USE OF THE CONECCCT CLASSIFICATION OPTIMALLY IDENTIFIES LARGE SUPERFICIAL LESIONS LACKING SUBMUCOSAL CARCINOMAS: A PROSPECTIVE STUDY ON 663 LESIONS

**Authors** Brulé C<sup>1</sup>, Pioche M<sup>2</sup>, Albouys J<sup>1</sup>, Rivory J<sup>2</sup>, Geyl S<sup>1</sup>, Legros R<sup>1</sup>, Rostain F<sup>2</sup>, Lepetit H<sup>1</sup>, Sautereau D<sup>1</sup>, Ponchon T<sup>2</sup>, Auditeau E<sup>1</sup>, Jacques J<sup>1</sup>  
**Institute** 1 CHU Dupuytren, Limoges, France; 2 Hopital Edouard Herriot, Lyon, France

DOI 10.1055/s-0041-1724477

**Citation:** Brulé C, Pioche M, Albouys J et al. OP213 USE OF THE CONECCCT CLASSIFICATION OPTIMALLY IDENTIFIES LARGE SUPERFICIAL LESIONS LACKING SUBMUCOSAL CARCINOMAS: A PROSPECTIVE STUDY ON 663 LESIONS. *Endoscopy* 2021; 53: S88.

**Aims** Endoscopic characterization is a fundamental step to predict lesion histology in order to choose the best resection modality between piece-meal EMR and ESD for large superficial colorectal lesions. CONECCCT classification (COlorectal Neoplasia Endoscopic Classification to Choose the Treatment) grouped overt and covert sign of carcinoma in an all-in-one classification including all previous published criteria. CONECCCT IIC subtype correspond to lesions at risk of submucosal cancer requiring absolute endoscopic en-bloc resection including pit or vascular abnormalities (SANO IIIA, JNET IIB types) and macroscopic worrisome features (LST-NG type; a macronodule larger than 1cm; a depressed area [Paris 0-IIC area]).

**Methods** We performed a diagnostic accuracy assessment study using CONECCCT classification for predicting submucosal carcinoma in colorectal lesions larger than 20mm, with prospective data from two European expert centers using the latest generation of scope without magnification and compared with the final histological analysis. Diagnostic accuracy was compared to previously published worrisome features for risk of submucosal invasion (LST-NG type, macronodule larger than 1 cm, SANO IIIA area, Paris 0-IIC area).

**Results** Between 2016 and 2019, 663 lesions removed by ESD were assessed. CONECCCT classification had a sensitivity of 100%, specificity of 26.2%, PPV 11.6% and NPV 100% to predict at least submucosal adenocarcinoma. CONECCCT IIC lesions included 11.5% of submucosal carcinoma. CONECCCT was significantly more sensitive than the other worrisome feature (SANO IIIA, NG type, Paris 0-IIC area or a macronodule larger than 1 cm) taken independently for prediction of at least submucosal cancer. No differences were observed between FUJIFILM or OLYMPUS scope using the BLI or NBI systems.

**Conclusions** CONECCCT classification, which combines covert and overt signs of carcinoma, identifies with a very high degree of accuracy (Se 100%, NPV 100%) low risk adenomas that could be treated either by piece-meal EMR or ESD according to the center's expertise.

## OP214 APPROPRIATE TREATMENT FOR NON-PEDUNCULATED COLORECTAL POLYPS > 20 MM ACCORDING TO WESTERN AND EASTERN APPROACH: CONDITIONAL INFERENCE-TREE FROM A PROSPECTIVE MULTICENTER COHORT

**Authors** da Costa-Seixas J<sup>1</sup>, López-Cerón M<sup>2</sup>, Arnau A<sup>3</sup>, Rosiñol Ò<sup>4</sup>, Cuatrecasas M<sup>5</sup>, Herreros-de-Tejada A<sup>6</sup>, Ferrández Á<sup>7</sup>, Serra-Burriel M<sup>8</sup>, Nogales Ó<sup>9</sup>, de Castro L<sup>10</sup>, López-Vicente J<sup>11</sup>, Vega P<sup>12</sup>, Álvarez-González MA<sup>13</sup>, González-Santiago JM<sup>14</sup>, Hernández-Conde M<sup>6</sup>, Díez-Redondo P<sup>15</sup>, Rivero-Sánchez L<sup>16,17</sup>, Gimeno-García AZ<sup>18</sup>, Burgos A<sup>19</sup>, García-Alonso FJ<sup>20</sup>, Bustamante-Balén M<sup>21</sup>, Martínez-Bauer E<sup>22</sup>, Peñas B<sup>23</sup>, Rodríguez-Alcalde D<sup>11</sup>, Pellisé M<sup>16,17</sup>, Puig I<sup>1</sup>

**Institute** 1 Althaia Xarxa Assistencial Universitària de Manresa, Digestive Diseases, Manresa, Spain; 2 Institut de Malalties Digestives i Metabòliques,

Hospital Clínic, Institut d'Investigacions Biomèdiques August Pi i Sunyer, University of Barcelona, Gastroenterology, Barcelona, Spain; 3 Althaia Xarxa Assistencial Universitària de Manresa, Clinical Research Unit, Manresa, Spain; 4 Althaia Xarxa Assistencial Universitària de Manresa, Pathology, Manresa, Spain; 5 Hospital Clínic of Barcelona, University of Barcelona, Pathology, Barcelona, Spain; 6 Research Institute Segovia Arana, Hospital Universitario Puerta de Hierro, Gastroenterology, Madrid, Spain; 7 Hospital Clínico Universitario Lozano Blesa, Digestive Diseases, Zaragoza, Spain; 8 University of Zurich, Epidemiology, Biostatistics, and Prevention Institute, Zurich, Switzerland; 9 Hospital General Universitario Gregorio Marañón, Digestive Diseases, Madrid, Spain; 10 Hospital Álvaro Cunqueiro, Digestive Diseases, Vigo, Spain; 11 Hospital Universitario de Móstoles, Digestive Diseases, Madrid, Spain; 12 Complejo Hospitalario Universitario de Ourense, Digestive Diseases, Ourense, Spain; 13 Hospital del Mar, Digestive Diseases, Barcelona, Spain; 14 Complejo Asistencial Universitario de Salamanca, Instituto de Investigación Biomédica de Salamanca, Digestive Diseases, Salamanca, Spain; 15 Hospital Universitario Río Hortega, Digestive Diseases, Valladolid, Spain; 16 Hospital Clínic of Barcelona, Gastroenterology, Barcelona, Spain; 17 Institut d'Investigacions Biomediques August Pi i Sunyer (IDIBAPS), Barcelona, Spain; 18 Hospital Universitario de Canarias, Digestive Diseases, Tenerife, Spain; 19 Hospital Universitario La Paz, Digestive Diseases, Madrid, Spain; 20 Hospital Universitario de Fuenlabrada, Digestive Diseases, Madrid, Spain; 21 Hospital Universitario y Politécnico de La Fe, Digestive Diseases, Valencia, Spain; 22 Corporació Sanitària Parc Taulí, Digestive Diseases, Sabadell, Spain; 23 Hospital Universitario Ramón y Cajal, Digestive Diseases, Madrid, Spain

DOI 10.1055/s-0041-1724478

**Citation:** da Costa-Seixas J, López-Cerón M, Arnau A et al. OP214 APPROPRIATE TREATMENT FOR NON-PEDUNCULATED COLORECTAL POLYPS 20 MM ACCORDING TO WESTERN AND EASTERN APPROACH: CONDITIONAL INFERENCE-TREE FROM A PROSPECTIVE MULTICENTER COHORT. *Endoscopy* 2021; 53: S88.

**Aims** To determine algorithms for choosing the suitable treatment in non-pedunculated colorectal lesions  $\geq 20$  mm assessed by Western endoscopists with NBI and without magnification.

**Methods** Observational prospective multicenter study conducted at 17 academic and community hospitals by 58 endoscopists. Unbiased conditional inference trees (CTREE) were fitted to analyze the association between the appropriate treatment based on the histology (surgery, en bloc resection or piecemeal EMR) based on the endoscopic characteristics of the lesions.

**Results** 542 lesions from 517 patients were included in the analysis. The most important lesion characteristic for choosing piecemeal EMR was the absence of ulceration ( $p < 0.001$ ). In lesions with this feature, the probability of submucosal (sm) invasion was 75%. In lesions without ulceration, the presence of non-granular lateral spreading lesions pseudodepressed type LST-NG (IIa+IIc) also changed the probability of sm invasion to 36% ( $p < 0.001$ ). If none of these 2 features were observed, sessile morphology also changed the probability of sm invasion to 13.7% ( $p < 0.001$ ). However, if none of these 3 features were present, the probability of sm invasion was 3.8% ( $p < 0.001$ ). No definitive algorithm was found to choose en bloc resection or surgery.

**Conclusions** In lesions  $\geq 20$  mm, piecemeal EMR is the adequate treatment in the absence of ulceration, LST-NG pseudodepressed or sessile type. Morphology, location, gross morphological malignant features and the NICE classification are not sufficient to accurately predict sm invasion if any of the previous characteristics are present. In this case, further diagnosis techniques like magnification or diagnostic +/- therapeutic ESD should be considered.

## OP215 IMPROVING DIAGNOSTIC ACCURACY IN ENDOSCOPIC CLASSIFICATION SYSTEM: ROLE OF ADVANCED TRAINING COURSE

**Authors** Sbrancia M<sup>1</sup>, Gibiino G<sup>1</sup>, Frazzoni L<sup>2</sup>, Fusaroli P<sup>3</sup>, Spada C<sup>4</sup>, Cali A<sup>3</sup>, Binda C<sup>1</sup>, Petruzzello L<sup>5</sup>, Gizzi G<sup>6</sup>, Fabbri C<sup>1</sup>, Fuccio L<sup>2</sup>

**Institute** 1 Forlì-Cesena Hospitals, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena, AUSL Romagna, Italy; 2 S. Orsola-Malpighi Hospital, Gastroenterology Unit, Department of Medical and Surgical Sciences, Bologna, Italy; 3 Hospital of Imola (BO), University of Bologna, Gastroenterology Unit, Bologna, Italy; 4 Fondazione Poliambulanza, Digestive Endoscopy Unit, Brescia, Brescia, Italy; 5 Fondazione IRCCS Policlinico A. Gemelli, Digestive Endoscopy Unit, Department of Gastroenterological, Endocrino-metabolic and Nephro-urological Sciences, Roma, Italy; 6 MF Toniolo Hospital, Bologna, Italy  
DOI 10.1055/s-0041-1724479

**Citation:** Sbrancia M, Gibiino G, Frazzoni L et al. OP215 IMPROVING DIAGNOSTIC ACCURACY IN ENDOSCOPIC CLASSIFICATION SYSTEM: ROLE OF ADVANCED TRAINING COURSE. *Endoscopy* 2021; 53: S89.

**Aims** Inverse association is reported between ADR (Adenoma Detection Rate) and interval colorectal cancer risk. Insufficient awareness and recognition of non-polypoid lesions contributes especially to the development of right-sided interval carcinomas. Interactive training programs can improve the diagnostic ability of endoscopists in colorectal lesions detection and classification.

We aimed to assess the improvement of the diagnostic accuracy on current polyp classifications among endoscopists before and after the attendance to an advanced training course.

**Methods** A survey was conducted among endoscopists attending a 2-day masterclass in colonoscopy held in Bologna, Italy, in November 2019. An image-based questionnaire containing 11 items on NICE, Paris, Kudo and LST classification, as well as 5 items on serrated lesions detection was administered at the beginning of the course. Moreover, 5 questions on serrated lesions detection and 7 on Paris classification for depressed lesions were assessed before and after the masterclass.

**Results** Forty-five endoscopists with 5-year median experience (interquartile range, IQR 2-10) participated to the study. Median age was 40 (IQR 36-44), 81% worked in endoscopy services performing  $>1,000$  colonoscopies/year. At baseline, endoscopists had suboptimal performance for NICE, Paris, Kudo and LST classification (77%, 30%, 56% and 63% correct answer rate, respectively). The masterclass markedly improved the detection of serrated lesions and Paris classification for depressed lesions (63% vs. 78% and 42 vs. 43% before and after the masterclass, respectively).

**Conclusions** According to our study, the diagnostic accuracy for colorectal lesions classification among endoscopists is still suboptimal. Focused training courses seem beneficial in this respect.

## OP216 MULTICENTER RANDOMIZED CONTROLLED TRIAL OF METHODS FOR REMOVING POLYPS OF THE COLON UP TO 10 MM

**Author** Nikolaychik T<sup>1,2</sup>

**Institute** 1 Lomonosov Moscow State University, Moscow, Russian Federation; 2 Pirogov Russian National Research Medical University, Moscow, Russian Federation

DOI 10.1055/s-0041-1724480

**Citation:** Nikolaychik T. OP216 MULTICENTER RANDOMIZED CONTROLLED TRIAL OF METHODS FOR REMOVING POLYPS OF THE COLON UP TO 10 MM. *Endoscopy* 2021; 53: S89.

**Aims** To evaluate the effectiveness and safety of cold polypectomy for small polyps.

**Methods** In November 2018 - November 2020, in 2348 patients (m - 893 (38%), f - 1455 (61%), in 1643 (70%) middle and elderly) 2348 colonoscopies were performed. In 1567 (66.7%) patients, polyps up to 10 mm in size were

detected, in most cases, polyps of 6-10 mm were found - 987 (63%). The morphology of polyps was of flat-elevated - 908 (58%), the predominant surface pattern was type II (S. Kudo), in 1222 (78%) cases, by NICE type 2 - 1144 (73%), according to the vascular pattern, type I prevailed (Y. Sano) - 1316 (84%). All polyps were removed endoscopically: using of biopsy forceps for polyps up to 3 mm - 267 (17%) - first group, with a cold snare - polyps 6-10 mm 1081 (69%) - second group and using the EMR method flat polyps 9 -10 mm 125 (8%) and 94 (6%) pedunculated polyps - third group. The polyps were removed «en-bloc» in 1395 (89%), in 172 (11%) residual tissue at the edge of the defect removed immediately with biopsy forceps or a cold snare. Assessment of the presence of residual tissue is more difficult after EMR due to post-coagulant necrosis.

**Results** Complication was observed in the second group (using EMR): in 1 (0.06%) case, bleeding in the early postoperative period. There were no complications in the other groups. All removed polyps were histological examination: the majority of 1159 (74%) polyps corresponded to the serrated type 987 (63%) - HP and 5 8 0 (37%) SSL. In this case, the non-toothed type was determined in 407 (26%) - TA, TVA, VA.

**Conclusions** Removal of polyps up to 10 mm using the cold snare, is a safe method with minimal risk of complications and maximum efficiency.

## OP217 LOW GRADE NEOPLASIA AND COLORECTAL (CR) ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): ARE THE ADVERSE EVENTS ACCEPTABLE? RESULTS OF A PROSPECTIVE MULTICENTRE REGISTRY

**Authors** Marín-Gabriel J<sup>C1</sup>, Herreros-de-Tejada A<sup>2</sup>, Ramos-Zabala F<sup>3</sup>, Rosón-Rodríguez P<sup>J4</sup>, Terán-Lantarón Á<sup>5</sup>, Albéniz-Arbizu E<sup>6</sup>, Santiago-García J<sup>2</sup>, Uchima-Koecklin H<sup>7</sup>, Rodríguez-Sánchez J<sup>1</sup>, Goikotxea-Rodero U<sup>8</sup>, Sánchez-Yagüe A<sup>9</sup>, Amorós-Tenorio A<sup>10</sup>, García-Romero D<sup>10</sup>, Nogales-Rincón Ó<sup>11</sup>, Fernández-Esparrach G<sup>12</sup>, Rodríguez-de-Santiago E<sup>13</sup>, Parejo-Carbonell S<sup>13</sup>, Peñas-García B<sup>13</sup>, De-María-Pallarés P<sup>14</sup>, del-Pozo-García A<sup>1</sup>, Gordillo-Ábalos J<sup>15</sup>, Pérez D<sup>16</sup>, Dolz-Abadía C<sup>17</sup>, Miranda-García P<sup>18</sup>, Cortés-Pérez H<sup>19</sup>, Álvarez-Delgado A<sup>20</sup>, Durán-Bermejo R<sup>21</sup>, Díaz-Canel O<sup>21</sup>, Busquets D<sup>7</sup>, Bustamante-Balen M<sup>22</sup>, Rivero-Sánchez L<sup>12</sup>, Burgos-García A<sup>14</sup>, Gonçalves-da-Cunha P<sup>21</sup>, Guamer-Argente C<sup>15</sup>, Díaz-Tasende J<sup>1</sup>ESD Interest Group - GSEED Endoscopic Resection Working Group

**Institute** 1 '12 de Octubre' University Hospital, Gastroenterology, Endoscopy Unit, Madrid, Spain; 2 'Puerta de Hierro - Majadahonda' University Hospital, Gastroenterology, Endoscopy Unit, Majadahonda, Spain; 3 'HM Montepíncipe' University Hospital, Gastroenterology, Endoscopy Unit, Boadilla del Monte, Spain; 4 Hospital Quirón Salud Málaga, Gastroenterology, Endoscopy Unit, Málaga, Spain; 5 'Marqués de Valdecilla' University Hospital, Gastroenterology, Endoscopy Unit, Santander, Spain; 6 Complejo Hospitalario Universitario de Navarra, Gastroenterology, Endoscopy Unit, Pamplona, Spain; 7 Hospital Germans Trias i Pujol, Gastroenterology, Endoscopy Unit, Badalona, Spain; 8 Donostia University Hospital, Gastroenterology, Endoscopy Unit, San Sebastián, Spain; 9 'Costa del Sol' Health Agency, Gastroenterology, Endoscopy Unit, Marbella, Spain; 10 'Nra. Sra. de la Candelaria' University Hospital, Gastroenterology, Endoscopy Unit, Tenerife, Spain; 11 'Gregorio Marañón' University Hospital, Gastroenterology, Endoscopy Unit, Madrid, Spain; 12 Hospital Clínic, IDIBAPS, Gastroenterology, Endoscopy Unit, Barcelona, Spain; 13 'Ramón y Cajal' University Hospital, Gastroenterology, Endoscopy Unit, Madrid, Spain; 14 'La Paz' University Hospital, Gastroenterology, Endoscopy Unit, Madrid, Spain; 15 'Santa Creu i Sant Pau' University Hospital, Barcelona, Spain; 16 'San Agustín' University Hospital, Gastroenterology, Endoscopy Unit, Avilés, Spain; 17 'Son Llatzer' Hospital, Gastroenterology, Endoscopy Unit, Palma de Mallorca, Spain; 18 'La Princesa' University Hospital, Madrid, Spain; 19 Hospital de Urduliz, Gastroenterology, Endoscopy Unit, Urduliz, Spain; 20 Complejo Universitario Hospitalario de Salamanca, Gastroenterology, Endoscopy Unit, Salamanca, Spain; 21 ServiDigest Clinic, Gastroenterology, Endoscopy Unit, Barcelona,

Spain; 22 'La Fe' University Hospital, Gastroenterology, Endoscopy Unit, Valencia, Spain

DOI 10.1055/s-0041-1724481

**Citation:** Marín-Gabriel JC, Herreros-de-Tejada A, Ramos-Zabala F et al. OP217 LOW GRADE NEOPLASIA AND COLORECTAL (CR) ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): ARE THE ADVERSE EVENTS ACCEPTABLE? RESULTS OF A PROSPECTIVE MULTICENTRE REGISTRY. *Endoscopy* 2021; 53: S90.

**Aims** The European Society of Gastrointestinal Endoscopy (ESGE) has recently published a position statement for optical diagnosis suggesting that, for Vienna category (VC) ≤ 3 colorectal lesions (CRL), performing EMR would be sufficient therapy. Our aims were: 1.) to assess the ESD complication rates when comparing VC ≤ 3 vs. VC ≥ 4 CRL and 2.) to compare the overall ESD risk of complications with a previously published Spanish EMR series.

**Methods** Consecutive patients were enrolled in a prospective multicentre CR-ESD registry since January 2016 to October 2020.

**Results** We recruited 1,314 CRL submitted for ESD and performed by members of the Spanish GSEED Endoscopic Resection Working Group. The procedure was aborted in 62 cases and histological assessment was yet to be finalized in 37, thus 1,215 CR-ESD were analysed. The histology showed VC ≤ 3 in 627 cases (51.6%). These specimens were significantly smaller than those with VC ≥ 4 (median: 45 mm vs. 38 mm; p < 0.0001). Severe fibrosis was less common in VC ≤ 3 (20.4% vs. 25.1%; p = 0.04). The intraprocedural perforation (IPP) rate (17.5% vs 14.5%; p=0.1) and the delayed perforation (DP) rates were similar between both groups (2.3% vs. 2.7%; p = 0.7). There were no differences in the need for surgery because of perforation (NFSP) according to histology: 2.1% vs. 2.2%; p=0.9. When IPP and NFSP for ESD were compared with a previously published Spanish EMR series those figures were significantly increased regardless of the histology: Proportion difference of IPP was +0.15 for ESD (CI 95%: 0.17 - 0.12; p < 0.00001) and NFSP +0.02 (CI 95%: 0.01 - 0.03; p < 0.00001).

**Conclusions** In our CR-ESD series, >50% of the cases showed VC ≤ 3 and the IPP and DP rates were similar to those VC ≥ 4 CRL. When compared with previously published EMR series, the overall IPP rates and the NFSP were significantly increased for ESD.

Saturday, 27 March 2021

16:00 – 16:45

Technical toolbox for endoscopic colorectal resection Room 5

## OP218 EVALUATION OF A NEW LIFTING GEL FOR ENDOSCOPIC SUBMUCOSAL DISSECTION IN AN EX-VIVO BOVINE COLON MODEL: A FRENCH PROSPECTIVE RANDOMIZED STUDY

**Authors** Lambin T<sup>1,2</sup>, Rivory J<sup>1</sup>, Ponchon T<sup>1,2</sup>, Bardin I<sup>1</sup>, Fabritius M<sup>1</sup>, Bonniaud P<sup>1</sup>, Pioche M<sup>1,2</sup>

**Institute** 1 Edouard Herriot Hospital, Gastroenterology and Endoscopy Unit, Pavillon L, Lyon, France; 2 Inserm U 1032, Labtau, Lyon, France

DOI 10.1055/s-0041-1724482

**Citation:** Lambin T, Rivory J, Ponchon T et al. OP218 EVALUATION OF A NEW LIFTING GEL FOR ENDOSCOPIC SUBMUCOSAL DISSECTION IN AN EX-VIVO BOVINE COLON MODEL: A FRENCH PROSPECTIVE RANDOMIZED STUDY. *Endoscopy* 2021; 53: S90.

**Aims** During endoscopic submucosal dissection (ESD), a lifting solution is injected between the muscularis mucosae and the submucosal layer to create a cushion protecting from the risk of perforation and bleeding. Hydroxyethyl starch (HES) is widely used because it provides a long duration of submucosal lifting with a safe profile. Q-gel is a new lifting solution designed by 3-D matrix (Japan) composed of extracellular matrix peptide. The aim of our study was to evaluate the efficacy of the Q-Gel in colonic ESD compared to HES.

**Methods** We performed a prospective randomized study evaluating the efficacy of ESD using either Q-Gel or the HES solution performed by two experts in ESD blinded from the solution. To simulate colonic lesions, we used an ex-

vivo bovine colon model. Bovine colon was inverted then delineation of a virtual lesion was performed by marking coagulation dots around a plastic disk to obtain a 35 mm lesion. For each lesion, dissection speed and quality, volume injected/surface dissected ratio, perforation rate, and global satisfaction of the operator were determined.

**Results** Forty ESD were performed (20 with the Q-gel and 20 with the HES solution). Mean dissection speed was 0.79 +/- 0.27 cm<sup>2</sup>/min in the Q-gel group and 0.63 +/- 0.29 cm<sup>2</sup>/min in the HES group (p = 0.04). All lesions were resected in one piece with lateral security margine (R0). No perforation was recorded for all the procedures. Mean volume injected/surface dissected ratio was inferior in the Q-gel group than in the HES group (2.02 +/- 0.50 ml/cm<sup>2</sup> vs 3.19 +/- 1.36 ml/cm<sup>2</sup> respectively, p = 0.002). In the Q-gel group, global satisfaction was superior than in the HES group.

**Conclusions** Q-gel increased the dissection speed by 25% without increasing the risk of perforation and the quality of the resected piece. These interesting results must be confirmed in a human study.

## OP219 TECHNICAL OUTCOMES AND RISK OF STRICTURE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR LARGE COLORECTAL LESIONS

**Authors** Maselli R<sup>1</sup>, Spadaccini M<sup>1</sup>, Galtieri PA<sup>1</sup>, Pellegatta G<sup>1</sup>, Ferrara EC<sup>1</sup>, Fugazza A<sup>1</sup>, Carrara S<sup>1</sup>, Anderloni A<sup>1</sup>, Repici A<sup>1</sup>

**Institute** 1 Humanitas Research Hospital, Rozzano, Italy

**DOI** 10.1055/s-0041-1724483

**Citation:** Maselli R, Spadaccini M, Galtieri PA et al. OP219 TECHNICAL OUTCOMES AND RISK OF STRICTURE AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR LARGE COLORECTAL LESIONS. *Endoscopy* 2021; 53: S91.

**Aims** Endoscopic submucosal dissection(ESD)is a well-established approach for the minimally invasive treatment of colorectal(CR)neoplasia. Although technical improvements enable en-bloc removal of large circumferential and near-circumferential rectal lesions, the efficacy and safety outcomes, have only been described in few Eastern countries' experiences. The aim of this study is to assess efficacy and safety outcomes of a cohort of patients treated with ESD for large rectal lesions in a tertiary Western center, with a particular focus on the risk of stricture.

**Methods** Between February2011 and June2019,a retrospective analysis of a prospectively maintained database was conducted on patients treated by ESD for large rectal lesions that required ≥75% circumferentialresection at Humanitas Research Hospital in Milan,Italy. The primary outcome considered for this study was the risk of stricture. Secondary outcomes were en-bloc, and R0 resection rates, procedural time, and other adverse events. The curative resection rate was assessed for submucosal invasive lesions.

**Results** Over the study period, 213 consecutive patients underwent a rectal ESD. Eighty-eight of them(mean age:68.5±12.9years old;50-56.8%-males) required ≥ 75% circumferential resection(32 circumferential resections),and were included in the study analysis.The94.3%of lesions were resected in an en-bloc fashion in a mean procedural time of110.6±63.2 min. The rate of R0 resection was80.7%. Eighteen out of 88lesions(20.5%)resulted in CR neoplasia with submucosal invasion. Eight of them(44.4%)showed high-risk features of nodal involvement(non-curativeESD)and were referred for surgery. A total of 3(3.4%) peri-procedural AEs(2 intraprocedural bleedings,1 post-procedural perforation) occurred. Post-ESD rectal strictures occurred in 4 out of 80 patients (5.0%), being strictly associated to circumferential resections (4/32, 12.6%). The 4 patients underwent endoscopic balloon dilation with symptoms resolution.

**Conclusions** Rectal ESD is a safe and effective option for managing large rectal neoplasia in a Western setting. The risk of post-procedural stricture is associated to circumferential resections, and patients should be aware of the possible need of endoscopic dilations.

## OP220V PASSAGE OF THE FTRD SYSTEM WITH THE HELP OF A DILATATION BALLOON DUE TO SEVERE COLONIC ANGULATION AND SUBSEQUENT USE

**Authors** Rosón PJ<sup>1</sup>, Fernandez FM<sup>1</sup>, Romero MA<sup>1</sup>, Albeniz E<sup>2</sup>

**Institute** 1 Hospital QuironSalud Málaga, Gastroenterology, Málaga, Spain; 2 Complejo Hospitalario de Navarra- Pamplona. Navarra. Spain, Gastroenterology Department, Pamplona, Spain

**DOI** 10.1055/s-0041-1724484

**Citation:** Rosón PJ, Fernandez FM, Romero MA et al. OP220V PASSAGE OF THE FTRD SYSTEM WITH THE HELP OF A DILATATION BALLOON DUE TO SEVERE COLONIC ANGULATION AND SUBSEQUENT USE. *Endoscopy* 2021; 53: S91.

Patient with an adenomatous recurrence located in the hepatic angle, on a tattoo area, referred for resection using the FTRD system.

The sigma has a large number of diverticulum, so a test colonoscopy is performed with a Prove Cap test cap, without being able to pass through the sigma through multiple maneuvers.

In order to pass the system, an 18mm dilator balloon is used adapted to the FTRD system, over a guidewire, to rectify the axis of the colon. A test is done first with the test cap, an then the same technique is used to help pass the FTRD.

## OP221 ENDOSCOPIC FULL THICKNESS RESECTION WITH ENDOSCOPIC SUTURING (EFTR-S) IN 107 RECTAL LESIONS: A SINGLE CENTER EXPERIENCE ON SAFETY AND EFFICACY & NBSP

**Authors** Bisello M<sup>1</sup>, Pregnotato P<sup>2</sup>, Antonello LM<sup>3</sup>, Vastola F<sup>4</sup>, Boschetto R<sup>5</sup>, Bertomoro P<sup>6</sup>, Modonesi C<sup>4</sup>, Donelli F<sup>7</sup>, Mengotto V<sup>8</sup>, Cattaneo P<sup>8</sup>

**Institute** 1 Ospedale 'Milani', General Surgery 2, Vicenza, Italy; 2 Ospedali Riuniti Padova Sud, Surgery General, Padova, Italy; 3 Azienda Ospedaliera di Padova, Pediatric Surgery, Padova, Italy; 4 Ospedali Riuniti Padova Sud, Medical Oncology, Padova, Italy; 5 Ospedali Riuniti Padova Sud, Pathological Anatomy, Padova, Italy; 6 Ospedali Riuniti Padova Sud, Medicine, Padova, Italy; 7 Ospedali Riuniti Padova Sud, Radiology, Padova, Italy; 8 Ospedali Riuniti Padova Sud, Anesthesiology, Padova, Italy

**DOI** 10.1055/s-0041-1724485

**Citation:** Bisello M, Pregnotato P, Antonello LM et al. OP221 ENDOSCOPIC FULL THICKNESS RESECTION WITH ENDOSCOPIC SUTURING (EFTR-S) IN 107 RECTAL LESIONS: A SINGLE CENTER EXPERIENCE ON SAFETY AND EFFICACY & NBSP. *Endoscopy* 2021; 53: S91.

**Aims** The aim of this study is to evaluate the efficacy and safety of EFTR with endoscopic suturing in rectal lesions.

**Methods** From June 2014 to November 2020, 107 EFTR procedures were performed in 104 patients. Defects were closed with full thickness endoscopic suturing technique with OverStitch. All resections were performed with flexible endoscopes only. Technical success and R0 resection rates were prospectively recorded and retrospectively analysed. 72 (67.2%) of 107 resections were recurrent lesions after previous endoscopic or surgical treatment (1 TEM, 10 ESD, 2 DFTR, 3 EFTR-S, 56 EMR). Indications for treatment were 96 mucosal lesions (1 Anal canal squamous carcinoma, 2 hyperplasia, 75 adenomas 18 adenocarcinomas) and 11 sub mucosal lesions (5 NET, 5 GIST, 1 carcinoid).

**Results** Technical success of the procedure was 99%, in only 1 of 107 lesions removal was not possible. Size of the lesion was 34.13 +/-4.75 (13-120) mm. The size of removed tissue was 54.10+/-14.94 (25-130) mm. Procedural time including suturing was 104.93 +/-27.18 (68-245) min. Histopathology confirmed R0 was achieved in 97% of cases 103/106 of resections. 30-days complication rate was 4.71%: 2 bleedings (1,88%), 2 suture dehiscence in patients RCT neoadjuvant (1.88%), 1 sigma stenosis (0.94%). At 30 days no postoperative perforation was observed and none of mentioned complications required surgical intervention. Hospital stay was 1.89 +/- 0.89 (1-7) days. In 100% of cases the tissue retrieved was adequate to formulate follow up therapy.



**Conclusions** EFTR with endoscopic suturing can be carried out safely and effectively. In our series we achieved 97% histological R0 rate which is in our opinion a critical factor to choose the most appropriate therapeutic approach. Full thickness endoscopic suturing, providing a safe defects closure, expands the possibility to treat these patients with a minimally invasive approach with low complication rates and fast patient recovery.

### OP222V ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COALESCENT POLYPS IN THE ANAL TRANSITIONAL ZONE AFTER RESTORATIVE PROCTOCOLECTOMY AND ILEAL-POUCH ANAL ANASTOMOSIS IN A PATIENT WITH FAMILIAL ADENOMATOUS POLYPOSIS

**Authors** O'Neill C<sup>1</sup>, Barreiro P<sup>1</sup>, Mendo R<sup>1</sup>, Félix C<sup>1</sup>, Santos T<sup>2</sup>, Chagas C<sup>1</sup>

**Institute** 1 Department of Gastroenterology, Centro Hospitalar Lisboa Ocidental, Lisboa, Portugal; 2 Department of General Surgery, Centro Hospitalar Lisboa Ocidental, Lisboa, Portugal

**DOI** 10.1055/s-0041-1724486

**Citation:** O'Neill C, Barreiro P, Mendo R et al. OP222V ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COALESCENT POLYPS IN THE ANAL TRANSITIONAL ZONE AFTER RESTORATIVE PROCTOCOLECTOMY AND ILEAL-POUCH ANAL ANASTOMOSIS IN A PATIENT WITH FAMILIAL ADENOMATOUS POLYPOSIS. *Endoscopy* 2021; 53: S92.

48-years-old male with familial adenomatous polyposis(FAP), underwent proctocolectomy and ileal-pouch-anal-anastomosis(RPC-IPAA) in 2004. He presented with rectal bleeding. Endoscopy showed multiple coalescent polyps occupying the anal transitional zone and anastomosis. ESD revealed severe fibrosis, surgical clips at the anastomosis, some of which were removed. En-bloc complete excision of the remaining rectal mucosa was achieved.

ESD is effective for complete resection of lesions associated with severe fibrosis as in peri-anastomotic sites. We report the first case of ESD for anal transitional zone lesions after RPC-IPAA in a patient with FAP, which may still leave mucosa prone to neoplasia requiring annual endoscopic surveillance.

Saturday, 27 March 2021

16:00 – 16:45

All about Zenker's

Room 6

### OP223V ZPOEM WITH DIRECT MUCOSOTOMY ON THE SEPTUM, TO FACILITATE ACCESS AND CLOSURE OF THE TUNNEL

**Authors** Rosón PJ<sup>1</sup>, Fernandez FM<sup>1</sup>, Cotta J<sup>1</sup>, Calle J<sup>1</sup>, Albeniz E<sup>2</sup>

**Institute** 1 Hospital QuironSalud Málaga, Gastroenterology, Málaga, Spain; 2 Complejo Hospitalario de Navarra- Pamplona. Navarra. Spain, Unidad de Endoscopia-Endoscopy Unit Servicio de Aparato Digestivo- Gastroenterology Department, Pamplona, Spain

**DOI** 10.1055/s-0041-1724487

**Citation:** Rosón PJ, Fernandez FM, Cotta J et al. OP223V ZPOEM WITH DIRECT MUCOSOTOMY ON THE SEPTUM, TO FACILITATE ACCESS AND CLOSURE OF THE TUNNEL. *Endoscopy* 2021; 53: S92.

Zenker's diverticulum treatment by POEM technique allows a complete myotomy to be performed, reducing the risk of recurrence and improving safety. There are different ways to create the mucosotomy, in the video we present a direct access on the septum that facilitates the difficult maneuverability in the narrow pharyngeal space and the closure of it once it is finished. Once the mucosotomy is done, two tunnels are created, one on the diverticular side and the other on the esophageal side to completely isolate the cricopharyngeal muscle, a complete myotomy of the septum is performed, and the mucosotomy is closed.

### OP224 THIRD-SPACE APPROACH VS FLEXIBLE ENDOSCOPIC SEPTOTOMY FOR THE TREATMENT OF SHORT-SEPTUM ZENKER'S DIVERTICULUM

**Authors** Maselli R<sup>1</sup>, Spadaccini M<sup>1</sup>, Fugazza A<sup>1</sup>, Vespa E<sup>1</sup>, Galtieri PA<sup>1</sup>, Pellegatta G<sup>1</sup>, Ferrara EC<sup>1</sup>, Carrara S<sup>1</sup>, Anderloni A<sup>1</sup>, Repici A<sup>1</sup>

**Institute** 1 Humanitas Research Hospital, Rozzano, Italy

**DOI** 10.1055/s-0041-1724488

**Citation:** Maselli R, Spadaccini M, Fugazza A et al. OP224 THIRD-SPACE APPROACH VS FLEXIBLE ENDOSCOPIC SEPTOTOMY FOR THE TREATMENT OF SHORT-SEPTUM ZENKER'S DIVERTICULUM. *Endoscopy* 2021; 53: S92.

**Aims** Flexible endoscopic septotomy (FES) has been reported as a safe and effective treatment for Zenker's diverticulum (ZD). However, patients with short septum (ss;<20mm) ZD still represent a difficult-to-treat subgroup of patients because of the anatomical limitation leading to reduced operating space for both rigid and flexible endoscopic treatments. Recently, third space tunneling approaches, namely Z-POEM and POES, have been developed to allow a safer, more complete myotomy; however, comparison data the standard flexible septotomy are still lacking. This is a retrospective analysis, comparing efficacy and safety between septotomy performed by a luminal or a third space approach (POES) for treating ssZD.

**Methods** All patients with ZD who were referred for flexible endoscopic septotomy were included in a prospectively maintained database. Exclusion criteria consisted of septum>20mm and follow up time shorter than 12months. Persistent complete or near-complete resolution of dysphagia (D&B:0or1) was defined as clinical success. Adverse events and procedure time were also recorded. Efficacy and safety outcomes were assessed at two different follow-up time points (12-months and 24-months).

**Results** From February 2011 to December 2019, 142 patients have been treated for ssZD by FES(n = 107) and POES(n = 35). The two groups did not differ in terms of demographics (FESgroup:68.9±12.0,M/F:66/41, ASA:1.8±0.6.POES group:68.9±14.1,M/F19/16, ASA2.1±0.6) and baseline clinical features (FESgroup:mean septum size:17.5±11.1; mean dysphagia score:2.6±0.6.POES group:septum size:1.4±6.8; mean dysphagia score 2.5±0.5). Mean procedural time was 19.7±7.3 and 13.6±6.3, respectively. Two perforations and one case of post procedural fever occurred in the FES Group. One case of intra-procedural bleeding occurred in the POES Group.

The 86.9% (93/107) and 94.3% (33/35) of patients were asymptomatic at 12 months follow-up time point after FES and POES respectively (p:0.23). A persistent clinical success was reported for the 80.3% (86/107) and 91.5% (32/35) of patients at the 24 months follow-up time point after FES and POES respectively (p:0.13). Patients with symptoms recurrence were all treated by repeating a flexible endoscopic approach.

**Conclusions** A novel third-space approach appears to be at least comparable to standard flexible endoscopic septotomy in terms of mid-term efficacy and safety for treating short-septum ZD.

### OP225 PERORAL ENDOSCOPIC MYOTOMY IN THE MANAGEMENT OF ZENKER'S DIVERTICULUM: A RETROSPECTIVE MULTICENTER STUDY

**Authors** Budnicka-Borkowicz A<sup>1,2</sup>, Januszewicz W<sup>1,2</sup>, Białek A<sup>3</sup>, Spychalski M<sup>4</sup>, Reguła J<sup>1,2</sup>, Kamiński M<sup>1,2,5</sup>

**Institute** 1 Department of Gastroenterological Oncology, Maria Skłodowska-Curie National Research Institute of Oncology, Warsaw, Poland; 2 Department of Gastroenterology, Hepatology and Oncology, Medical Center for Postgraduate Education, Warsaw, Poland; 3 Department of Gastroenterological Oncology, Szczecin, Poland; 4 Department of Gastroenterological Oncology, Brzeziny, Poland; 5 University of Oslo, Institute of Health and Society, Oslo, Norway

**DOI** 10.1055/s-0041-1724489

**Citation:** Budnicka-Borkowicz A, Januszewicz W, Białek A et al. OP225 PERORAL

ENDOSCOPIC MYOTOMY IN THE MANAGEMENT OF ZENKER'S DIVERTICULUM: A RETROSPECTIVE MULTICENTER STUDY. *Endoscopy* 2021; 53: S92.

**Aims** Peroral endoscopic myotomy (POEM) is an emerging technique in the treatment of Zenker's diverticulum (ZD). This study aimed to analyze the feasibility of Zenker's POEM (Z-POEM) in a multicenter setting and assess its performance using a validated Kothari-Haber Scoring System newly developed for symptom measurement in ZD.

**Methods** This was a multicenter retrospective study involving 3 Polish tertiary referral endoscopic units. The data of consecutive patients with symptomatic ZD treated with Z-POEM in Poland between May 2019 and August 2020 were retrieved and analyzed. Primary outcome measures were technical success and clinical success rate (<3 points in Kothari-Haber Score at 2-3 months follow-up). Secondary outcome measures included procedures' duration, length of hospital stay, and adverse events.

**Results** 22 patients with symptomatic ZD were included. The mean age was 67.6 ( $\pm 10.7$ ) years, and 14 (63.6%) were male. All but 2 patients were treatment naïve. The average size of the ZD was 30 mm (IQR, 24-40 mm). Technical success was achieved in all patients (100%), whereas clinical success was 90.9%. The average Kothari-Haber Score was 6.35 before treatment and has dropped to 0.65 after the treatment ( $P < .0001$ ). The mean procedure time was 48.8 ( $\pm 19.3$ ) minutes, and the median length of hospital stay was 2 days (IQR, 2-3). Three patients (13.6%) had post-procedural emphysema, of which two were mild and self-resolving (9.1%), and one was moderate (4.5%) and complicated with laryngeal edema and prolonged intubation.

**Conclusions** This feasibility study suggests that Z-POEM is a highly effective and safe treatment for ZD, particularly among treatment naïve patients. Comparative studies with other treatment modalities over longer follow-up are warranted.

## OP226V SEVERE CERVICAL BOBORYGMI IN A 74-YEAR-OLD PATIENT WITH A ZENKER'S DIVERTICULUM – BOYCE'S SIGN

**Authors** [Holley E-M](#), [Nagl S](#)<sup>1</sup>, [Messmann H](#)<sup>1</sup>, [Gölder SK](#)<sup>1</sup>

**Institute** 1 [Universitätsklinikum Augsburg, Gastroenterology, MED III, Augsburg, Germany](#)

**DOI** [10.1055/s-0041-1724490](#)

**Citation:** Holley E-M, Nagl S, Messmann H et al. OP226V SEVERE CERVICAL BOBORYGMI IN A 74-YEAR-OLD PATIENT WITH A ZENKER'S DIVERTICULUM – BOYCE'S SIGN. *Endoscopy* 2021; 53: S93.

**Background** A Zenker's diverticulum is located in the dorsal hypopharynx. Common symptoms are dysphagia, regurgitation or Boyce's sign, a cervical boborygmus.

**Case** We are reporting the case of a 74-year-old female patient who presented with a Zenker's diverticulum for mucomyotomia in double incision and snare resection technique. Her major symptom was a gurgling sound during deglutition, remarkably detectable at distance. This allowed us to document this phenomenon on video.

**Conclusion** To our knowledge, a Boyce's sign of this quality has not been described or recorded yet. Awareness of unusual clinical symptoms could help improving preclinic diagnosis.

## OP227V ENDOSCOPIC THERAPY FOR ZENKER'S DIVERTICULUM WITH ARTICULATED BIPOLAR SEALING AND CUT DEVICE

**Authors** [Fernandez-Simon A](#)<sup>1</sup>, [Cordova H](#)<sup>1,2,3</sup>, [Llach J](#)<sup>1,2,3</sup>, [Sendino O](#)<sup>1,2,3</sup>

**Institute** 1 [Institut Clinic de Malalties Digestives i Metabòliques, Hospital Clinic, Endoscopy Unit, Gastroenterology Department, Barcelona, Spain](#); 2 [Institut d'Investigacions Biomèdiques August Pi-Sunyer \(IDIBAPS\), Barcelona, Spain](#); 3 [Ciber de Enfermedades Hepáticas y Digestivas \(CIBEREHD\), Barcelona, Spain](#)

**DOI** [10.1055/s-0041-1724491](#)

**Citation:** Fernandez-Simon A, Cordova H, Llach J et al. OP227V ENDOSCOPIC

THERAPY FOR ZENKER'S DIVERTICULUM WITH ARTICULATED BIPOLAR SEALING AND CUT DEVICE. *Endoscopy* 2021; 53: S93.

We present a 79-year-old woman complaining of severe dysphagia for liquids and solids, regurgitation, odynophagia, and weight loss (Eckardt score 11) with a diagnosis of Zenker's diverticulum. A flexible endoscopic diverticulotomy was successfully performed using a bipolar sealing and cut device, with the aid of a diverticuloscope. In this video, we show this technique step by step, including the management of a suspected complication during the procedure.

Saturday, 27 March 2021

17:00 – 17:45

EUS-guided gastroenterostomy: From theory to practice Room 5

## OP228V EUS-GUIDED GASTROENTEROSTOMY AS A RESCUE TREATMENT AFTER THE FAILURE OF DUODENAL STENTING TO ALLEVIATE MALIGNANT OUTLET OBSTRUCTION DUE TO A CONCOMITANT SMA SYNDROME

**Author** [Lajin M](#)<sup>1</sup>

**Institute** 1 [SHARP HealthCare San Diego, La Mesa, United States](#)

**DOI** [10.1055/s-0041-1724492](#)

**Citation:** Lajin M. OP228V EUS-GUIDED GASTROENTEROSTOMY AS A RESCUE TREATMENT AFTER THE FAILURE OF DUODENAL STENTING TO ALLEVIATE MALIGNANT OUTLET OBSTRUCTION DUE TO A CONCOMITANT SMA SYNDROME. *Endoscopy* 2021; 53: S93.

A 74-year-old female with locally advanced gallbladder cancer presented with vomiting due to a short malignant duodenal stricture. A 2cm Axios was deployed across the stricture.

A few weeks later her symptoms recurred. Endoscopy revealed cancer progression with pyloric obstruction. A duodenal stent (22mm-12cm) was deployed through LAMS bridging the strictures.

Her symptoms persisted. Abdominal CT revealed SMA syndrome.

A gastroscope was advanced through the duodenal stent to D4. A catheter was advanced to the distal duodenum and used to distend the proximal jejunum. EUS-guided gastroenterostomy was then performed using a 2cm hot Axios. She tolerated diet and was discharged.

## OP229 LAPAROSCOPIC VERSUS EUS-GUIDED GASTROENTEROSTOMY FOR GASTRIC OUTLET OBSTRUCTION: AN INTERNATIONAL MULTICENTER PROPENSITY SCORE-MATCHED COMPARISON

**Authors** [Bronswijk M](#)<sup>1,2</sup>, [Vanella G](#)<sup>3</sup>, [van Malenstein H](#)<sup>2</sup>, [Laleman W](#)<sup>2</sup>, [Jaekers J](#)<sup>4</sup>, [Topal B](#)<sup>4</sup>, [Daams F](#)<sup>5</sup>, [Besselink MC](#)<sup>6</sup>, [Arcidiacono PG](#)<sup>3</sup>, [Voermans RP](#)<sup>7</sup>, [Fockens P](#)<sup>8</sup>, [Larghi A](#)<sup>9</sup>, [van Wanrooij RL](#)<sup>8</sup>, [van der Merwe S](#)<sup>2</sup>

**Institute** 1 [Department of Gastroenterology and Hepatology, Imelda General Hospital, Bonheiden, Belgium](#); 2 [Department of Gastroenterology and Hepatology, University Hospitals Gasthuisberg, University of Leuven, Leuven, Belgium](#); 3 [IRCCS San Raffaele Scientific Institute, Pancreatobiliary Endoscopy and Endosonography Division, Milan, Italy](#); 4 [Department of Visceral Surgery, University Hospitals Gasthuisberg, Leuven, Belgium](#); 5 [Department of Surgery, Amsterdam UMC, Vrije Universiteit, Cancer Center Amsterdam, Amsterdam, Netherlands](#); 6 [Department of Surgery, Amsterdam UMC, University of Amsterdam, Cancer Center Amsterdam, Amsterdam, Netherlands](#); 7 [Department of Gastroenterology and Hepatology, Amsterdam UMC, University of Amsterdam, AGEM Institute, Amsterdam, Netherlands](#); 8 [Department of Gastroenterology and Hepatology, Amsterdam UMC, Vrije Universiteit Amsterdam, AGEM institute, Amsterdam, Netherlands](#); 9 [Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, Rome; CERTT, Center for Endoscopic Research Therapeutics and Training, Catholic University, Digestive Endoscopy Unit, Rome, Italy](#)

DOI 10.1055/s-0041-1724493

**Citation:** Bronswijk M, Vanella G, van Malenstein H et al. OP229 LAPAROSCOPIC VERSUS EUS-GUIDED GASTROENTEROSTOMY FOR GASTRIC OUTLET OBSTRUCTION: AN INTERNATIONAL MULTICENTER PROPENSITY SCORE-MATCHED COMPARISON. *Endoscopy* 2021; 53: S93.

**Aims** In the management of gastric outlet obstruction (GOO), EUS-guided gastroenterostomy (EUS-GE) seems safe and more effective than enteral stenting. However, comparisons to laparoscopic gastroenterostomy (L-GE) are scarce. Our aim was to perform a propensity score-matched comparison between EUS-GE and L-GE.

**Methods** An international, multicenter retrospective analysis was performed of consecutive EUS-GE and L-GE procedures in 3 academic centers (Jan-2015 to May-2020). A propensity score-matched design was used in order to minimize selection bias. Age, sex, underlying disease, disease stage, presence of ascites and/or peritoneal carcinomatosis were used as variables, with a standard maximum propensity score difference of 0.1. All EUS-GE were performed using the Wireless EUS-gastroenterostomy Simplified Technique (WEST).

**Results** Overall, 77 patients were treated with EUS-GE and 48 patients with L-GE. By means of propensity score-matching, 37 patients were allocated to both groups, resulting in 74 (1:1) matched patients.

Technical success was achieved in 35/37 EUS-GE-treated patients (94.6%) vs. 100% in the L-GE group ( $p=0.493$ ). Clinical success, defined as eating without vomiting or GOO Scoring System  $\geq 2$ , was achieved in 97.1% and 89.2% respectively ( $p=0.358$ ). Median time to oral intake (1 (IQR 0.3-1.0) vs. 3 (IQR 1.0-5.0) days,  $p<0.001$ ) and median hospital stay (4 (IQR 2-8) vs 8 (IQR 5.5-20) days,  $p<0.001$ ) were significantly shorter in the EUS-GE group.

Overall adverse events (AEs) (2.7% vs. 27.0%,  $p=0.007$ ) and severe AEs (0.0% vs. 16.2%,  $p=0.025$ ) were identified more frequently in the L-GE group.

**Conclusions** For patients with gastric outlet obstruction, EUS-GE and L-GE showed almost identical technical and clinical success. However, reduced time to oral intake, shorter median hospital stay and lower rate of adverse events prudentially suggest that EUS-GE should be the preferred approach. While awaiting high-quality prospective confirmation, these findings should guide gastroenterologists, oncologists and surgeons in considering EUS-GE for treating gastric outlet obstruction.

► Tab. 1

	EUS-GE (n = 37)	L-GE (n = 37)	OR (95% CI), P value
Technical success, n (%)	35 (94.6%)	37 (100%)	0.19 (0.01-4.08), 0.493
Clinical success, n (%)	34 (97.1%)	33 (89.2%)	4.12 (0.44-38.83), 0.358
Overall adverse events, n (%)	1 (2.7%)	10 (27.0%)	0.07 (0.01-0.62), 0.007
Severe adverse events, n(%)	0 (0.0%)	6 (16.2%)	0.07 (0.00-1.19), 0.025

## OP230V SINGLE-SESSION EUS-GUIDED DUODENOJEJUNOSTOMY AND THROUGH-THE-LAMS ERCP COMBINED WITH EUS-GUIDED GALLBLADDER DRAINAGE (EUS-GBD) IN ROUX-EN-Y GASTRECTOMY

**Authors** Fuentes-Valenzuela E<sup>1</sup>, Sánchez-Ocaña R<sup>1</sup>, Chavarría C<sup>1</sup>, De la Serna Higuera C<sup>1</sup>, Pérez-Miranda M<sup>1</sup>  
**Institute 1** Hospital Universitario Río Hortega, Endoscopy Unit, Gastroenterology, Valladolid, Spain

DOI 10.1055/s-0041-1724494

**Citation:** Fuentes-Valenzuela E, Sánchez-Ocaña R, Chavarría C et al. OP230V SINGLE-SESSION EUS-GUIDED DUODENOJEJUNOSTOMY AND THROUGH-THE-LAMS ERCP COMBINED WITH EUS-GUIDED GALLBLADDER DRAINAGE (EUS-GBD) IN ROUX-EN-Y GASTRECTOMY. *Endoscopy* 2021; 53: S94.

An 88-yo subtotal gastrectomy female experienced cholecystitis with CBD stones. ERCP failed and lack of intrahepatic dilatation prevented antegrade EUS-guided stone removal. EUS-guided transportal-cholangiography with 22G-needle confirmed CBD stones. Contrast outflow into the duodenum facilitated afferent limb location and free-hand placement of a duodenojejunal cauterly-enhanced 20-mm lumen-apposing metal stent (LAMS). Using a duodenoscope, a through-the-LAMS ERCP with CBD stone removal was performed. Lastly, echoendoscope passage through-the-LAMS allowed retrograde access to the duodenal bulb and free-hand insertion of a 10-mm LAMS for cholecystoduodenostomy. EUS-guided transportal-cholangiography with transenteric LAMS allow combined ERCP and EUS-GBD in a single-session in nonoperative Roux-en-Y gastrectomy patients.

## OP231V EUS GUIDED GASTROENTEROSTOMY TO TREAT AFFERENT LIMB OBSTRUCTION USING “CONTROLLING THE TWO ENDS OF THE WIRE” TECHNIQUE IN ORDER TO AVOID COVERING THE BILIARY ANASTOMOSIS

**Author** Lajin M<sup>1</sup>  
**Institute 1** SHARP Health Care/San Diego, La Mesa, United States  
 DOI 10.1055/s-0041-1724495

**Citation:** Lajin M. OP231V EUS GUIDED GASTROENTEROSTOMY TO TREAT AFFERENT LIMB OBSTRUCTION USING “CONTROLLING THE TWO ENDS OF THE WIRE” TECHNIQUE IN ORDER TO AVOID COVERING THE BILIARY ANASTOMOSIS. *Endoscopy* 2021; 53: S94.

A 47-year-old female with a history of Whipple presented with afferent limb obstruction manifested as recurrent pancreatitis/cholangitis due to narrowing at the entrance to the afferent limb.

The afferent limb was injected with contrast and was identified by EUS. To ensure sparing the biliary anastomosis, direct Axios deployment was avoided. Instead, a wire was advanced to the afferent limb and then pulled back to the mouth using a colonoscope. After ensuring adequate distance between the wire and the biliary anastomosis, a gastroscope was advanced over the proximal end of the wire. The track was dilated and Axios was deployed.

## OP232 COMPARISON OF SHORT AND MEDIUM TERM RELIEF OF GASTRIC OUTLET OBSTRUCTION SYMPTOMS VIA ENTERAL STENTS OR EUS-GUIDED GASTROENTEROSTOMY

**Authors** Dhir V<sup>1</sup>, Udawat P<sup>1</sup>, Shah R<sup>1</sup>  
**Institute 1** Institute of Digestive and Liver Care, SL Raheja Hospital, Gastroenterology, Mumbai, India  
 DOI 10.1055/s-0041-1724496

**Citation:** Dhir V, Udawat P, Shah R. OP232 COMPARISON OF SHORT AND MEDIUM TERM RELIEF OF GASTRIC OUTLET OBSTRUCTION SYMPTOMS VIA ENTERAL STENTS OR EUS-GUIDED GASTROENTEROSTOMY. *Endoscopy* 2021; 53: S94.

**Aims** To compare the quality of relief of obstructive symptoms following enteral stent placement or EUS-GJ by utilizing the Gastric outlet obstruction scoring system (GOOSS, Adler 2002). A secondary aim was to assess the need for re-intervention after the index procedure.

**Methods** Records of patients who underwent enteral stent or EUS-GJ between March 2019 and October 2020 were entered in a database. The indications, procedure type, and adverse events were noted. GOOSS scores were calculated on discharge and at 16 weeks. Statistical comparisons were done by 2x2 test and T test for continuous variables.

**Results** 16 patients underwent enteral stent placement (median age 67 yrs, 13 males, mean GOOSS 1, 10 uncovered, 6 covered), while 18 patients underwent EUS-guided GJ (median age 62, males 11, mean GOOSS 1). All patients had malignant obstruction. Technical success was achieved in all patients in enteral stent group and in 17/18 patients in EUS-GJ group. There was one perforation in the EUS-GJ group requiring emergency exploration. There were no other adverse events in either group. The improvement in GOOSS was significantly higher in the EUS-GJ group at discharge (mean score 3.0 versus 2.35±0.49,  $p=0.0001$ ), and at 16 weeks (mean score 3.0 versus 2±0.79,  $p=0.0001$ ). At 6 months 9 patients in enteral stent group, and 6 patients in the EUS-GJ had died. Re-intervention was required in 7 patients by 4 months of follow up compared to none in EUS-GJ group ( $p=0.002$ ).

**Conclusions** EUS-GJ provides significantly better early and medium term palliation of gastric outlet obstruction symptoms, with lesser requirement for re-intervention compared to enteral stents.

Saturday, 27 March 2021

17:00 – 17:45

Colonoscopy for screening or surveillance

Room 6

### OP233 INTERVAL CANCER AFTER NEGATIVE FOLLOW-UP COLONOSCOPY WITHIN A FIT BASED CRC SCREENING PROGRAM

**Authors** [van de Schootbrugge-Vandermeer H<sup>1</sup>](#), [Kooyker A<sup>1</sup>](#), [Nagtegaal I<sup>2</sup>](#), [Geuzinge H<sup>1</sup>](#), [van Vuuren A<sup>3</sup>](#), [van Kemenade F<sup>4</sup>](#), [Ramakers C<sup>5</sup>](#), [Dekker E<sup>6</sup>](#), [Lansdorp-Vogelaar I<sup>1</sup>](#), [Spaander M<sup>3</sup>](#), [van Leerdam M<sup>7</sup>](#)

**Institute** 1 Department of Public Health, Erasmus MC University Medical Center, Rotterdam, Netherlands; 2 Department of Pathology, Radboud University Medical Center, Nijmegen, Netherlands; 3 Department of Gastroenterology and Hepatology, Erasmus MC University Medical Center, Rotterdam, Netherlands; 4 Department of Pathology, Erasmus MC University Medical Center, Rotterdam, Netherlands; 5 Department of Clinical Chemistry, Erasmus MC University Medical Center, Rotterdam, Netherlands; 6 Department of Gastroenterology and Hepatology, Amsterdam University Medical Center, Location AMC, Amsterdam, Netherlands; 7 Department of Gastroenterology and Hepatology, Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands  
DOI 10.1055/s-0041-1724497

**Citation:** van de Schootbrugge-Vandermeer H, Kooyker A, Nagtegaal I et al. OP233 INTERVAL CANCER AFTER NEGATIVE FOLLOW-UP COLONOSCOPY WITHIN A FIT BASED CRC SCREENING PROGRAM. *Endoscopy* 2021; 53: S95.

**Aims** After a positive fecal immunochemical test (FIT), participants of the Dutch colorectal cancer (CRC) screening program are referred for a follow-up colonoscopy. In case no relevant findings are detected, participants are re-invited for FIT screening after 10 years. However, there is limited data about the risk of developing CRC in this period.

**Methods** Data were extracted from the Dutch national screening information system. Participants who underwent a follow-up colonoscopy between 2014 and 2018 without relevant findings and/or with referral back to the screening program were selected. CRC diagnoses were validated and only diagnoses at least 180 days after negative colonoscopy were considered. Because of the large number of selected participants, negative colonoscopies were randomly validated to assess whether they were correctly qualified as negative. Main outcome was the CRC risk after negative colonoscopy, which was compared with CRC risk after negative FIT (cut-off at 47 µg hemoglobin/g feces and 2-year interval after negative test result).

**Results** A total of 42,160 participants was selected. After validation, 35,052 participants remained, of which 24 had a validated post-colonoscopy interval CRC. This resulted in a CRC risk after negative colonoscopy of 6.8 per 10,000 participants after an average follow-up of 1.6 years. In comparison, CRC risk after negative FIT was 11.28 per 10,000 participants after an average follow-up

period of 2.0 years. CRC risk after negative colonoscopy per 10,000 person years of follow-up after 2.5 years was approximately equal to CRC risk after negative FIT per 10,000 person years of follow-up after 2 years.

**Conclusions** Risk of post-colonoscopy interval CRC after an average follow-up of 1.6 years in a FIT based screening program is low. However, the 10-year interval used in the Netherlands after a negative follow-up colonoscopy may have to be reconsidered, although data is limited at this point.

### OP234 RISK OF COLORECTAL CANCER AFTER DETECTION OF LOW-RISK OR HIGH-RISK ADENOMAS, COMPARED WITH NO ADENOMA, AT SCREENING COLONOSCOPY: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** [Antonelli G<sup>1,2</sup>](#), [Duvvuri A<sup>3</sup>](#), [Thoguluva Chandrasekar V<sup>3</sup>](#), [Spadaccini M<sup>4</sup>](#), [Repici A<sup>4</sup>](#), [Hassan C<sup>1</sup>](#), [Sharma P<sup>5</sup>](#)

**Institute** 1 Nuovo Regina Margherita Hospital, Digestive Endoscopy Unit, Rome, Italy; 2 Department of Translational and Precision Medicine, Sapienza University of Rome, Rome, Italy; 3 Department of Gastroenterology and Digestive Endoscopy, Kansas City, University of Kansas Medical Center, United States; 4 Humanitas Clinical and Research Center – IRCCS, Endoscopy Unit, Milan, Italy; 5 Department of Gastroenterology and Digestive Endoscopy, University of Kansas Medical Center, Kansas City, United States  
DOI 10.1055/s-0041-1724498

**Citation:** Antonelli G, Duvvuri A, Thoguluva Chandrasekar V et al. OP234 RISK OF COLORECTAL CANCER AFTER DETECTION OF LOW-RISK OR HIGH-RISK ADENOMAS, COMPARED WITH NO ADENOMA, AT SCREENING COLONOSCOPY: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S95.

**Aims** The risk of metachronous colorectal cancer (CRC) among patients with no adenomas, low-risk adenomas (LRAs), or high-risk adenomas (HRAs), detected at index screening colonoscopy, is unclear. We performed a systematic review and meta-analysis to compare incidence rates of metachronous CRC and CRC-related mortality after a baseline colonoscopy for each group.

**Methods** We searched the Pubmed, EMBASE, Google scholar, and Cochrane databases for studies that reported the incidence of CRC and adenoma characteristics after colonoscopy. The primary outcome was odds of metachronous CRC and CRC-related mortality per 10,000 person-years of follow-up after baseline colonoscopy for all the groups.

**Results** Our final analysis included 12 studies with 510,019 patients (mean age, 59.2 ± 2.6 years; 55% male; mean duration of follow up, 8.5 ± 3.3 years). The incidence of CRC per 10,000 person-years was significantly higher among persons with LRAs compared to persons with no adenomas (4.5 vs 3.4; odds ratio [OR], 1.26; 95% CI, 1.06–1.51; I<sup>2</sup>=0), and persons with HRAs compared to persons with LRAs (13.81 vs 4.5; OR, 2.35; 95% CI, 1.72–3.20; I<sup>2</sup>=55%). The CRC related mortality per 10,000 person-years did not differ significantly for persons with LRAs compared to persons with no adenomas (0.78 vs 0.71; OR, 1.15; 95% CI, 0.76–1.74; I<sup>2</sup>=0) but was significantly higher in persons with HRAs compared with LRAs (2.07 vs 0.78; OR, 2.48; 95% CI, 1.30–4.72; I<sup>2</sup>=38%).

**Conclusions** In a systematic review and meta-analysis, we found the risk of metachronous CRC and mortality to be significantly higher for persons with HRAs, and only marginally higher in patients with LRAs, with no difference in mortality, compared to persons with no adenomas, in screening colonoscopies. Follow up of patients with LRAs detected in an initial colonoscopy should be the same as for persons with no adenomas.

### OP235 RISK FACTORS RELATED TO ADVANCED COLORECTAL NEOPLASIA IN COLORECTAL CANCER SCREENING – INTERIM RESULTS OF MULTICENTRIC PROSPECTIVE STUDY

**Authors** [Grega T<sup>1</sup>](#), [Vojtechova G<sup>1</sup>](#), [Ngo O<sup>2,3</sup>](#), [Ambrozova<sup>3</sup>](#), [Majek O<sup>2,3</sup>](#), [Zavoral M<sup>1</sup>](#), [Suchanek S<sup>1</sup>](#)



**Institute 1** Department of Internal Medicine, Faculty of Medicine, Charles University, Military University Hospital, Prague, Czech Republic; **2** Faculty of Medicine, Masaryk University, Institute of Biostatistics and Analyses, Brno, Czech Republic; **3** Institute of Health Information and Statistics, Prague, Czech Republic

DOI 10.1055/s-0041-1724499

**Citation:** Grega T, Vojtechova G, Ngo O et al. OP235 RISK FACTORS RELATED TO ADVANCED COLORECTAL NEOPLASIA IN COLORECTAL CANCER SCREENING – INTERIM RESULTS OF MULTICENTRIC PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S95.

**Aims** The lifetime risk of developing colorectal cancer in average risk population is 4.4%. The prevalence of advanced colorectal neoplasia in the screening population shows great diversity around 3-12% depending on multiple risk factors. The aim of the study was to determine the risk factors associated with the incidence of advanced colorectal neoplasia in the screening population.

**Methods** The prospective multicentric study included asymptomatic individuals aged 45-75 years who underwent preventive colonoscopy in 2012–2015. Data were collected and analyzed using descriptive statistics. The Fisher's exact test was used to compare the risk factors with the occurrence of advanced colorectal neoplasia.

**Results** 1,108 men (56.3%) and 859 women (43.7%) were included (average age 60 years). The total number of advanced colorectal neoplasia was 11.8% (233 individuals). The potential risk factors associated with advanced colorectal neoplasia were age ( $p < 0.001$ ), male gender ( $p = 0.001$ ), smoking ( $p < 0.001$ ), serum concentrations of triglycerides ( $p = 0.029$ ; especially concentrations  $> 2$  mmol/l) and low vitamin D ( $p = 0.033$ ). These are preliminary results which will be specified in the following more detailed data analysis using logistic regression.

**Conclusions** The strongest potential risk factors associated with advanced colorectal neoplasia were age, gender and smoking. In addition to these factors, serum triglyceride levels and low vitamin D were significantly associated with advanced colorectal neoplasia. To individuals with these risk factors should be addressed increased attention and considered primary screening colonoscopy. The study was supported by the Czech Ministry of Health grants No. 17-31909A and No. NV18-08-00246 and projects MO1012 and Progres Q28/LF1.

## OP236 PATIENT PREFERENCE FOR COLON CAPSULE ENDOSCOPY OR COLONOSCOPY IN POPULATION-BASED COLORECTAL CANCER SCREENING: INTERIM ANALYSIS OF FIRST 39,076 INVITATIONS FOR FECAL IMMUNOCHEMICAL TEST IN CAREFORCOLON2015

**Authors** Deding U<sup>1,2</sup>, Bjørsum-Meyer T<sup>1,2</sup>, Kaalby L<sup>1,2</sup>, Kobaek-Larsen M<sup>1,2</sup>, Thygesen MK<sup>1,2</sup>, Baatrup G<sup>1,2</sup>

**Institute 1** Odense University Hospital, Odense, Denmark; **2** Department of Clinical Research, University of Southern Denmark, Odense, Denmark  
DOI 10.1055/s-0041-1724500

**Citation:** Deding U, Bjørsum-Meyer T, Kaalby L et al. OP236 PATIENT PREFERENCE FOR COLON CAPSULE ENDOSCOPY OR COLONOSCOPY IN POPULATION-BASED COLORECTAL CANCER SCREENING: INTERIM ANALYSIS OF FIRST 39,076 INVITATIONS FOR FECAL IMMUNOCHEMICAL TEST IN CAREFORCOLON2015. *Endoscopy* 2021; 53: S96.

**Aims** To compare participation rates for fecal immunochemical test (FIT) prior to offering colon capsule endoscopy (CCE) or colonoscopy with controls offered only colonoscopy as follow-up to positive FIT, and to analyze the choice of screening method in the intervention group within the large randomized clinical trial CareForColon2015<sup>1</sup>.

**Methods** Individuals are being randomized into two groups: control group with regular colorectal cancer screening (FIT followed by colonoscopy) or intervention group introducing CCE as an optional filter test before a potential colonoscopy. These interim analyses were conducted after 39,076 invitations had been distributed. Participation rates for FIT within each group were calculated. Preference distribution within the intervention group was calculated and then tested against an equal distribution using the chi-squared test.

**Results** During the first 86 days of invitations, 19,388 invitations for the control group and 19,688 for the intervention group were distributed. After six weeks of follow-up, 11,525 (59.4%) had returned a FIT sample within the control group. In the intervention group, 11,691 (59.4%) had returned a FIT sample, from which 5,879 (50.3%) indicated preferring CCE, 1,186 (10.1%) preferred colonoscopy while 4,626 (39.6%) gave no indication of preference (Fig. 1). The preference for CCE was significantly more prevalent than that for colonoscopy ( $p < 0.001$ ).

**Conclusions** The participation rates for FIT were equal between control group and intervention group. In the intervention group, more participants preferred CCE than did colonoscopy, although a substantial proportion did not indicate their preference. The patient information material will be reviewed in order to optimize response rate for preference of initial follow-up investigation during the remainder of the trial.

[1] Møller LK, Deding U, Kobaek-Larsen M, Havshøj ALV, Zimmerman-Nielsen E, Thygesen MK, Krojger R, Bjørsum-Meyer T, Baatrup G. Colon capsule endoscopy in colorectal cancer screening: a randomized controlled trial. *BMJ Open Gastro* 2020; 7: e000411. doi: 10.1136/bmjgast-2020-000411

## OP237 INFLAMMATORY BOWEL DISEASE-RELATED COLORECTAL CANCER: WHEN DO WE NEED TO OPTIMIZE SURVEILLANCE?

**Authors** Panarese A<sup>1,2</sup>, Armentano R<sup>1</sup>, Coletta S<sup>1</sup>, Burattini O<sup>1</sup>, de la Cruz R<sup>3</sup>, Labarile N<sup>4</sup>

**Institute 1** Department of Gastroenterology and Digestive Endoscopy, National Institute of Gastroenterology "S De Bellis", Research Hospital, Castellana Grotte, Italy; **2** Department of Gastroenterology and Digestive Endoscopy, "SS Annunziata" Hospital, Taranto, Italy; **3** Department of Gastroenterology and Digestive Endoscopy, Institute of Molecular System Biology, ETH, Zurich, Zurich, Switzerland; **4** "SS Annunziata" Hospital, Taranto, Italy  
DOI 10.1055/s-0041-1724501

**Citation:** Panarese A, Armentano R, Coletta S et al. OP237 OP237 INFLAMMATORY BOWEL DISEASE-RELATED COLORECTAL CANCER: WHEN DO WE NEED TO OPTIMIZE SURVEILLANCE?. *Endoscopy* 2021; 53: S96.

**Aims** Inflammatory bowel diseases (IBD) are a risk factor for colorectal cancer (CRC): they are responsible for approximately 2% of the annual mortality from CRC overall and of the 10–15% of the annual deaths in IBD patients. However, there has been a decline in this incidence over the past 30 years, thank to CRC-surveillance programs. Identify patients' risk factors is important to optimize surveillance. In this study we aimed to evaluate the risk factors of dysplasia and describe the prevalence of IBD related endoscopically dysplasia from a cohort of patients with longstanding disease in endoscopic/histological remission followed in a tertiary referral centre of South Italy.

**Methods** This is a single centre prospective study including 228 consecutive longstanding IBD patients (79 Crohn's disease-CD and 149 Ulcerative Colitis-UC) in histological/endoscopic remission, subjected to regular surveillance using high definition white light endoscopy and Dye/Virtual Chromoendoscopy, from 2016 to 2020, with targeted biopsies in suspicious areas and complete resection of lesion with EMR/ESD. Data analyzed included: disease duration, months of surveillance, smoking, alcohol, site and behavior of disease, extraintestinal diseases, number of endoscopies and surgical interventions, therapies.

**Results** In the overall population we recorded 22 dysplasia in UC patients and none in CD patients: 21 low grade dysplasia and 1 high grade dysplasia on rectum lesion, of which histology confirmed the completed removal. In the comparison of UC-CRC patients and UC patients without CRC, the univariate analysis identified in the duration of the disease the only significant variable ( $p$ -value  $\approx 0.01$ ). We also found a higher incidence of dysplasia in patients in conventional therapy than those in biologics ( $p=0.015$ ).

**Conclusions** In our study population UC and a long duration of disease are two necessary conditions for the development of dysplasia. Patients under conventional therapy have a higher risk of developing dysplasia than those treated with biologics.

## ESGE Days 2021 Digital poster exhibition

### eP1 ENDOSCOPIC MUCOSAL RESECTION (EMR) OF COLONIC POLYPS IN THE OLDER PATIENT – IS IT SAFE?

**Authors** Garvey T<sup>1</sup>, Hadjinicolaou A<sup>1</sup>, Frank M<sup>1</sup>, Nadesalingam V<sup>1</sup>, McDermott E<sup>1</sup>

**Institute** 1 Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Department of Gastroenterology, Cambridge, United Kingdom

**DOI** 10.1055/s-0041-1724502

**Citation:** Garvey T, Hadjinicolaou A, Frank M et al. eP1 ENDOSCOPIC MUCOSAL RESECTION (EMR) OF COLONIC POLYPS IN THE OLDER PATIENT – IS IT SAFE? *Endoscopy* 2021; 53: S97.

**Aims** Controversies surround the risk of performing endoscopic mucosal resection (EMR) in patients ≥ 75 years coupled with difficulties encountered with comorbidities which are often heavily prevalent in this population. We sought to analyse the safety of EMR of large colonic polyps (20mm or greater) in patients ≥ 75 years.

**Methods** We performed a retrospective analysis of all patients who underwent EMR of polyps ≥ 20mm between 1st January 2019 and 1st January 2020. In our institution, polyps found to be ≥ 20mm at colonoscopy are usually brought back on a different date for a therapeutic procedure. Statistical analyses were performed with GraphPad Prism 6.0 (GraphPad Software, Inc., San Diego, CA). Differences between groups were considered to be significant at a P value of <0.05. Fisher Exact test was used to determine statistical significance.

**Results** There was no statistically significant difference between patients less than 75 years and those 75 years and above with regard to post EMR admission within 30 days [p = 0.1365 OR: 2.99 (95% CI: 0.77-11.64)], death within 30 days [p = 0.3091 OR: 6.80 (95% CI: 0.27-170.0)], perforation [p = 0.5239 OR: 2.26 (95% CI: 0.14-36.88)] or bleeding [p = 1.00 OR 1.05 (95% CI: 0.40-2.76)].

**Conclusions** Our analysis shows that EMR in patients ≥ 75 years appears to be safe. However, given that this is a retrospective analysis there are confounding factors such as pre-selected patients for therapeutic intervention. Further large-scale prospective research is required to determine outcomes such as cancer prevention benefit as well as cost effectiveness. The use of life expectancy scores may play a role in deciding which patients should have surveillance +/- therapeutic intervention in the future.

► **Tab. 1** Summary of results

	Age < 75 years	Age 75 years and above
<b>Number of patients</b>	108	47
<b>Admission within 30 days/Death within 30 days</b>	4/0	5/1
<b>Perforation</b>	1 – required right hemicolectomy	1 – micro-perforation
<b>Bleeding (including delayed)</b>	15 (3)	7 (2)

### eP2 MALIGNANT OR BENIGN SUBEPITHELIAL TUMORS (SET) IN THE UPPER GASTROINTESTINAL TRACT <20MM: CURATIVE AND DIAGNOSTIC ENDOSCOPIC RESECTION: RETROSPECTIVE STUDY OF 102 PATIENTS

**Authors** Caillol F<sup>1</sup>, Meunier E<sup>1</sup>, Zemmour C<sup>2</sup>, JP Ratone<sup>1</sup>, Pesenti C<sup>1</sup>, Dahel Y<sup>1</sup>, Hoibian S<sup>1</sup>, Marcx M<sup>1</sup>, Guiramand J<sup>3</sup>, Poizat F<sup>4</sup>, Giovannini M<sup>1,1</sup>

**Institute** 1 Paoli Calmettes Institute, Endoscopy, Marseille, France; 2 Paoli Calmettes Institute, Statistic, Marseille, France; 3 Paoli Calmettes Institute, Surgery, Marseille, France; 4 Paoli Calmettes Institute, Pathology, Marseille, France

**DOI** 10.1055/s-0041-1724503

**Citation:** Caillol F, Meunier E, Zemmour C et al. eP2 MALIGNANT OR BENIGN SUBEPITHELIAL TUMORS (SET) IN THE UPPER GASTROINTESTINAL TRACT <20MM: CURATIVE AND DIAGNOSTIC ENDOSCOPIC RESECTION: RETROSPECTIVE STUDY OF 102 PATIENTS. *Endoscopy* 2021; 53: S97.

**Aims** Diagnosis of SET < 20mm in the upper part of gastrointestinal tract (UPGT) can be challenging. Accuracy of EUS-FNA is around of 46% in case of SET < 20mm. To avoid long-term and coercing monitoring, endoscopic resection (ER) in case of suspicious malignant SET or in case of uncertain diagnosis was performed. The goal of this study was to confirm safety for ER for SET < 20mm.

**Methods** Single centre retrospective study. Patients who underwent a ER of SET in UPGT from 2007 to 2019 were included and divided in 2 groups: B-SET for benign SET, M-SET for malignant SET.

**Results** One hundred and two patients (mean age = 60 years, 53 women) underwent ER for SET. Pre-therapeutic evaluation showed: mean size (EUS) of 16.9mm (+/-7.7), gastric localization in 67.5%, and in the third layer in 55.9%. ER indications were uncertain diagnosis in 90% of the cases.

EMR was performed in 46%, ESD in 31%, hybrid resection in 23% of the cases. Morbidity was 4%. One bleeding needing hemostasis, and 2 perforations endoscopically managed. 82/102 SET were B-SET et 20 were M-SET. In 28/102 (27%), a malignant lesion was wrongly suspected (including 2 false positives biopsies: 1 GIST, 1 lesion with low grade dysplasia). At the opposite, 2 M-SET was found after ER. An adjuvant treatment has been necessary for 4 M-SET. New ER for doubtful margin in 1 NET grade 1 and 1 GIST with low grade malignancy because of refusal of surgery; Two complementary surgery for 1 NET grade 2, and 1 GIST with intermediary risk. No relapse was reported for M-SET with a follow-up of 33 months (4-127) (mean GIST follow-up = 61 months; 17-127).

**Conclusions** ER of SET < 20mm allows a reliable diagnosis with very low morbidity. Follow-up for B-SET is avoided. ER for M-SET seems to be curative with a long-term follow-up.

### eP3 USE OF PURASTAT IN MANAGEMENT OF GASTRO-INTESTINAL BLEEDING: OUR EXPERIENCE

**Authors** Labianca O<sup>1</sup>, Sica M<sup>1</sup>, Zulli C<sup>1</sup>, Maurano A<sup>1</sup>

**Institute** 1 AOU San Giovanni di Dio e Ruggi d'Aragona, Gaetano Fucito Hospital - Digestive Endoscopy Unit, Mercato San Severino, Italy

**DOI** 10.1055/s-0041-1724504

**Citation:** Labianca O, Sica M, Zulli C et al. eP3 USE OF PURASTAT IN MANAGEMENT OF GASTRO-INTESTINAL BLEEDING: OUR EXPERIENCE. *Endoscopy* 2021; 53: S97.

**Aims** Many possible causes of bleeding from upper and lower gastro-intestinal (GI) tract, are burdened by significant morbidity and mortality. Lately innovative topical hemostatic agents have been developed for endoscopic use. The aim of report is demonstrate efficacy and safety of PuraStat, a new absorbable hemostatic, to control, alone or in association with a second hemostatic technique, an active GI bleeding.

**Methods** From October 2018 to September 2020, we observed a case series of 24 patients (15 males, 9 females; range age 44-87 years; mean age 69.8

years) admitted to our Digestive Endoscopy Unit, with anemia due to an active GI bleeding. In particular, 10 patients showed melena and 3 had hematemesis for gastric or duodenal active peptic ulcer, 2 patients had melena after Vater ampulla's sphincterotomy, 9 patients presented hematochezia after polypectomy or mucosectomy in the colon. Ten patients were on antiplatelet/anticoagulant therapy (4 aspirin and 6 NOAC). PuraStat, a gel used in GI endoscopy to control venous and arteriolar bleedings, was used for primary haemostasis during emergency endoscopy.

**Results** In our case series, PuraStat was used alone as first hemostatic technique and was effective in haemostasis in 25% of cases (6/24), and it was also used as second hemostatic technique after injective or clipping and was effective in haemostasis in 75% of cases (18/24). In all cases, we used a layer of PuraStat applying in a targeted manner about 2,5 ml. of transparent gel, and complete stable control of bleeding was achieved in all patients. No technical difficulties in application encountered, and no incidences of catheter blockage. No complication or delayed bleeding occurred. There were no instances of allergic reaction.

**Conclusions** According to our experience, PuraStat is an effective, safe and easy to use hemostatic agent for management in different types of active GI bleeding, reducing risk of delayed bleeding.

#### eP4 LONG-TERM OUTCOMES OF NON-CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION RESECTION OF GASTRIC LESIONS

**Authors** Silva Mendes S<sup>1,2</sup>, Ferreira A<sup>1</sup>, Costa R<sup>1</sup>, Leal T<sup>1</sup>, AC Caetano<sup>1,2</sup>, Gonçalves R<sup>1</sup>

**Institute** 1 Braga Hospital, Gastroenterology Department, Braga, Portugal; 2 University of Minho, School of Medicine, Life and Health Sciences Research Institute (ICVS), Braga, Portugal

DOI 10.1055/s-0041-1724505

**Citation:** Silva Mendes S, Ferreira A, Costa R et al. eP4 LONG-TERM OUTCOMES OF NON-CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION RESECTION OF GASTRIC LESIONS. *Endoscopy* 2021; 53: S98.

**Aims** Recent studies questioned the benefit of additional surgery in all patients submitted to a non-curative endoscopic submucosal dissection (ESD) for early malignant lesions. This study aims to evaluate the outcomes of patients selected for gastric ESD in a tertiary center.

**Methods** Data were collected from all patients referred to ESD for resection of dysplastic or early malignant gastric lesions in a tertiary center, from May 2012 to August 2020. All procedures were performed by the same endoscopist and the expanded criteria were used to define endoscopic cure. Demographic data, characteristics of the lesion and of the procedure, complications, histological results, and recurrence were recorded. Follow-up was performed with endoscopy at 3-6 months after the ESD and then annually.

**Results** Two hundred and eighty eight ESDs were performed in 260 patients over 98 months. One hundred fifty-eight patients were male, with an average age of 68.79±9.89, and 188 patients (65.28%) presented significant comorbidities. The most significant ESD complications were post-procedure bleeding (n = 18; 6.25%), and intra-procedure perforation (n = 2; 0.69%), with successful endoscopic treatment in all patients. The proportion of R0 resection was 87.50%. Forty-six (15.97%) ESD were considered non-curative, from which 24 were referred for surgical resection. Ten of the 24 patients did not undergo surgery due to patients' wishes or frailty. Of the 14 patients that underwent surgery, only 4 (28.57%) had residual dysplastic tissue in the surgical specimens. Four patients had major complications from surgery, with one death. Regarding the 28 patients that maintained endoscopic surveillance, the average follow-up time was 30.65±21.76 months. Recurrence was found in 8 patients (28.57%) with dysplastic lesions managed endoscopically in all cases.

**Conclusions** In this cohort, it was observed a benign course during long-term follow-up of patients after non-curative ESDs. Further studies may allow a better selection of patients who benefit from additional surgical treatment.

#### eP5 ILEOSCOPY YIELD DURING COLONOSCOPY PROCEDURES: AN INDICATION-BASED ANALYSIS

**Authors** Abu Baker F<sup>1</sup>, Khoury T<sup>2</sup>, Mahamid M<sup>2</sup>, Shorbaji A<sup>3</sup>, Kopelman Y<sup>1</sup>, Mari A<sup>2</sup>

**Institute** 1 Hillel Yaffe Medical Center, Gastroenterology and Hepatology, Hadera, Israel; 2 Nazareth Hospital EMMS, Gastroenterology and Hepatology, Nazareth, Israel; 3 Galilee Medical Center, Gastroenterology and Hepatology, Nahariya, Israel

DOI 10.1055/s-0041-1724506

**Citation:** Abu Baker F, Khoury T, Mahamid M et al. eP5 ILEOSCOPY YIELD DURING COLONOSCOPY PROCEDURES: AN INDICATION-BASED ANALYSIS. *Endoscopy* 2021; 53: S98.

**Aims** While the routine performance of ileoscopy during colonoscopy procedures is perceived to have a low yield, its utility during colonoscopies performed for specific indications have not been well studied. The current study aims to assess the diagnostic yield of indication-based ileoscopies in the real life practice.

**Methods** We reviewed endoscopic reports of patients who had undergone colonoscopies over a 7-year period (2011-2018) and who had routine ileoscopy during these procedures. Demographic data, indications for colonoscopy, and endoscopic findings were documented. Diagnostic yield and odds ratio for terminal ileum findings were calculated for each indication.

**Results** Ileoscopy was performed in 1800 patients. Among them, 216 patients had findings in the terminal ileum (ileitis or ulcers). Ileoscopy was performed more in younger population when compared to the overall age of the entire cohort (42.9 ± 11 vs. 51.3 ± 14 years; P<0.05) and terminal ileum findings were more prevalent in younger ages (38.3 ± 17.6 vs. 43.6 ± 20; P<0.05). The greatest yield of ileoscopy was evident when performed for the evaluation of chronic abdominal pain and diarrhea (14.4% vs. 9.3%; OR = 1.62; P<0.05) as well as in the setting of follow-up for inflammatory bowel disease (44.4% vs. 10.6%; OR = 6.7; P<0.05). Positive fecal occult blood testing (OR = 0.1, CI 0.02-0.5; P = 0.005) and constipation (OR = 0.44, CI 0.2-0.9; P = 0.04) were negatively associated with terminal ileum findings.

**Conclusions** Ileoscopy may have the greatest utility in evaluating suspected IBD patients or in their follow up, but may not add value to the evaluation of constipation and positive fecal occult blood. A case-by-case evaluation should be followed for other indications.

#### eP6 EFFICACY AND SAFETY OF VERY LOW-VOLUME BOWEL PREPARATION WITH 1L PLENVU COMPARISON WITH 2L PEG-ASC: MULTICENTER, RANDOMIZED, ENDOSCOPIST-BLINDED STUDY

**Authors** Hong SN<sup>1</sup>, CK Lee<sup>2</sup>, Plm J<sup>3</sup>, CH Choi<sup>4</sup>, JS Byeon<sup>5</sup>, YS Cho<sup>6</sup>, SA Jung<sup>7</sup>, TI Kim<sup>8</sup>, YT Jeon<sup>9</sup>

**Institute** 1 Samsung Medical Center, Department of Medicine, Seoul, Korea, Republic of; 2 Kyung Hee University School of Medicine, Center for Crohn's and Colitis, Department of Gastroenterology and Hepatology, Seoul, Korea, Republic of; 3 Seoul National University College of Medicine, Department of Internal Medicine and Liver Research Institute, Seoul, Korea, Republic of; 4 Chung-Ang University College of Medicine, Department of Internal Medicine, Seoul, Korea, Republic of; 5 Asan Medical Center, University of Ulsan College of Medicine, Department of Gastroenterology, Seoul, Korea, Republic of; 6 Seoul St. Mary's Hospital, The Catholic University of Korea, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Seoul, Korea, Republic of; 7 Ewha Womans University College of Medicine, Department of Internal Medicine, Seoul, Korea, Republic of; 8 Yonsei University College of Medicine, Department of Internal Medicine, Seoul, Korea, Republic of; 9 Korea University Anam Hospital, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Seoul, Korea, Republic of

DOI 10.1055/s-0041-1724507

**Citation:** Hong SN, Lee CK, Plm J et al. eP6 EFFICACY AND SAFETY OF VERY

LOW-VOLUME BOWEL PREPARATION WITH 1L PLENUVU COMPARISON WITH 2L PEG-ASC: MULTICENTER, RANDOMIZED, ENDOSCOPIST-BLINDED STUDY.

Endoscopy 2021; 53: S98.

**Aims** Polyethyleneglycol (PEG)-based bowel preparation is effective and safe but required high volume intake, which reduces adherence and tolerability. Although 2L PEG-Asc enables small volume preparation, lower-volume bowel preparation is beneficial for patients.

**Methods** This multicenter, randomized, endoscopist-blinded study has randomized the patients requiring colonoscopy to receive 1L PEG-Asc, Plenvu versus 2L PEG-Asc at nine hospitals in Korea. Bowel cleansing was assessed using the Boston Bowel Preparation Scale (BBPS). The primary endpoints were overall bowel cleansing success (each BBPS segment score  $\geq 2$ ).

**Results** Of 360 patients, bowel cleansing was analyzed in 346 (1L PEG-Asc, n = 174; 2L PEG-Asc, n = 172). 1L PEG-Asc showed non-inferiority in successful bowel cleansing compared with 2L PEG-Asc (93.10% [162/174] vs. 91.86% [158/172], difference, 1.24%; one-sided 97.5% lower confidence limit, -4.31%; non-inferiority p < 0.0001). Right colon BBPS score was significantly higher in 1L PEG-Asc than 2L PEG-Asc group (2.56 $\pm$ 0.60 vs. 2.43 $\pm$ 0.60, p = 0.029), although the differences of transverse and left colon BBPS scores were not significant between the groups. Polyp detection rate (PDR) of 1L PEG-Asc group was significantly higher than that of 2L PEG-Asc group (48.85% vs. 37.79%, p = 0.0379) and adenoma detection rate (ADR) of 1L PEG-Asc group was numerically higher than that of 2L PEG-Asc group (24.71% vs. 20.35%, p = 0.3314). The mean numbers of polyps and adenomas per patient of 1L PEG-Asc group were tended to be higher than those of 2L PEG-Asc group (0.33  $\pm$  0.49 vs. 0.27  $\pm$  0.48, p = 0.0606; 0.14  $\pm$  0.31 vs. 0.12  $\pm$  0.31, p = 0.3427). 1L PEG-Asc was well tolerated, with more mild adverse events compared with 2L PEG-Asc (65.71% [115/175] vs. 52.91% [91/172], p = 0.0152).

**Conclusions** Plenvu was as effective in overall bowel cleansing as 2L PEG-Asc, with improved right colon cleansing and PDR.

## eP7 SAFETY AND EFFICACY OF COLONOSCOPY IN NONAGENARIANS IN A SECONDARY CENTER

**Authors** Coelho M<sup>1</sup>, Dantas E<sup>1</sup>, Sequeira C<sup>1</sup>, Santos I<sup>1</sup>, Freire R<sup>1</sup>, Cremers I<sup>1</sup>, Oliveira A<sup>1</sup>

**Institute** 1 Centro Hospitalar de Setúbal, Gastroenterology, Setúbal, Portugal  
DOI 10.1055/s-0041-1724508

**Citation:** Coelho M, Dantas E, Sequeira C et al. eP7 SAFETY AND EFFICACY OF COLONOSCOPY IN NONAGENARIANS IN A SECONDARY CENTER. Endoscopy 2021; 53: S99.

**Aims** Colonoscopy is considered the gold standard for colorectal examination. However, even with life expectancy increasing globally, data concerning performance, diagnostic yield and safety of colonoscopy in the elderly population is still scarce.

**Methods** In a retrospective study, we collected data of patients  $\geq 90$ y old, who underwent colonoscopy between January of 2017 and December of 2019 in a secondary health care center. Main outcome measures were completion rates, diagnostic yield, treatment, adverse events and 30-day mortality.

**Results** A total of 55 colonoscopies were performed in 45 patients (62% female), with a mean age of 92y old, 67% in an inpatient setting. The crude completion rate was 51%, when adjusted to bowel preparation was 69%. Diverticulosis (31%) and adenocarcinoma (15%) were the most common diagnosis and 13% of the colonoscopies were normal. Cancers were found in 27% of patients referred with anemia and in 7% with hematochezia. Despite overall reasonable diagnostic yield, only 13% of the colonoscopies resulted in targeted therapy (endoscopic or surgical) to the findings. There were no complications. The 30-day survival rate was 84%.

**Conclusions** In our study, performing colonoscopy in nonagenarians was associated with higher risk of inadequate bowel preparation and a low cecal intubation rate, but was overall safe, with reasonable diagnostic yield translating into minor therapeutic benefit.

## eP8 PORTAL HYPERTENSION AND CELIAC DISEASE: EVOLUTION OF PORTAL HYPERTENSION WITH A GLUTEN FREE DIET

**Authors** Chbourk S<sup>1</sup>, Borahma M<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana F-Z<sup>1</sup>

**Institute** 1 University Mohammed V, Ibn Sina Hospital, Gastroenterology C, Rabat, Morocco

DOI 10.1055/s-0041-1724509

**Citation:** Chbourk S, Borahma M, Benelbarhdadi I et al. eP8 PORTAL HYPERTENSION AND CELIAC DISEASE: EVOLUTION OF PORTAL HYPERTENSION WITH A GLUTEN FREE DIET. Endoscopy 2021; 53: S99.

**Aims** Celiac disease (CD) is immune-mediated multisystem disorder that may affect several organ induced by the ingestion of gluten. The association with portal hypertension (PH) is rare. The aim of our work is to describe the association between PH and CD and to study the influence of the gluten-free diet (GFD) on the evolution of PH.

**Methods** This is a retrospective study over a period of 20 years, involving 20 patients with CD and PH out of a total of 304 celiac patients. The diagnosis of CD was based on histological (LEL  $\geq 30\%$ ) and serological criteria.

**Results** 20 patients were collected, the sex ratio F/M was 3. The mean age was 34.2 years (19-60). Gastroduodenal endoscopy was performed. Esophageal varices (OV) were found in 55%: OV grade 1 in 30%, OV grade 2 in 20% and OV grade 3 in 5%, red signs were present in 10%. abdominal doppler ultrasonography showed port-systemic CVC, a homogeneous liver in 65%, heterogeneous liver with spiculate contours in 35%, a portal cavernoma in 25%, and focal thrombosis of IVC in one case. Common causes of chronic liver disease were excluded in all patients. Hepatic histology was performed revealing: MVPS (porto-sinusoidal vascular disease) in 40%, celiac cirrhosis in 20%, granulomatous hepatitis associated with CD in 15%, normal in 21%. OV ligation until eradication was performed in 10%, primary prevention with B-blockers was instituted in 27%. An endoscopic control was performed after 2 years of GFD and showed the disappearance of OV in 45% with good adherence of GFD, while in 55%, a reappearance of OV was noted in those who did not adhere to the GFD.

**Conclusions** Our study has shown that the association between CD and PH is not rare (6.5% in our series). The commitment to a GFD has a beneficial effect on the evolution and severity of PH.

## eP9 DIAGNOSIS AND ENDOSCOPIC REMOVAL OF GOSSYPBOMA FROM SUPRAHEPATIC SPACE: A CASE REPORT

**Authors** Stupnytskyy A<sup>1</sup>, Hula H<sup>1</sup>, Stupnytska N<sup>1</sup>, Shevyak P<sup>1</sup>

**Institute** 1 St. Paraskeva Medical Center, Lviv, Ukraine

DOI 10.1055/s-0041-1724510

**Citation:** Stupnytskyy A, Hula H, Stupnytska N et al. eP9 DIAGNOSIS AND ENDOSCOPIC REMOVAL OF GOSSYPBOMA FROM SUPRAHEPATIC SPACE: A CASE REPORT. Endoscopy 2021; 53: S99.

**Aims** The aim is to present the case of gossypiboma of the suprahepatic space and own experience of its endoscopic removal. In the analysis of the medical literature, we did not find reports of endoscopic treatment of such retained foreign bodies (RFBs).

**Methods** We present a case of a 52-year-old male who presented with non-specific symptoms 5 years post-laparoscopic cholecystectomy. Hyperechogenic growth 5 cm in diameter in suprahepatic space was detected by ultrasound and confirmed by CT. The RFB was suspected, but the patient didn't agree to be treated. Repeated CT was performed after 1.5 years, RFB with reactive inflammatory changes of adjacent tissues was detected.

**Results** «Drainage of the hematoma» was performed in other clinic, after which a fistula was formed. The patient with complaints of aching abdominal pain, purulent discharge from the wound came to our clinic for surgery. We decided to conduct an endoscopy of the fistula. The Fujifilm EG-740N



endoscope was easily held with a formed fistula about 5 mm in diameter to a depth of 9 cm in the direction of the space between the liver, the right costal arch and the diaphragm dome. The fistula passes into an irregular oval cavity, 6 cm long along the longer axis, with multiple fibrin and fibrous alterations and pockets of the diverticulum type. In the cavity is RSB (gauze). One end of the PST was grasped and pulled to the skin surface with a tool for removing foreign bodies of the "alligator" type and removed completely with a surgical clamp. After 2 weeks, the drainage was removed from the fistula; the wound is cleaned and heals by secondary tension.

**Conclusions** Successfully applied endoscopic removal of RFB in a patient after laparoscopic cholecystectomy through a formed external fistula made it possible to avoid surgery and became a radical method of treatment.

## eP10 OUTCOMES OF ESOPHAGEAL VARICES IN CASE OF SEGMENTAL PORTAL HYPERTENSION

**Authors** Hmimass S<sup>1</sup>, Borahma M<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>  
**Institute** 1 Mohammed V University, Gastroenterology C, Rabat, Morocco  
**DOI** 10.1055/s-0041-1724511

**Citation:** Hmimass S, Borahma M, Lagdali N et al. eP10 OUTCOMES OF ESOPHAGEAL VARICES IN CASE OF SEGMENTAL PORTAL HYPERTENSION. *Endoscopy* 2021; 53: S100.

**Aims** Segmental portal hypertension (SHT) is one of the rare causes of extrahepatic portal hypertension. Our work aims to assess the evolution of varices during segmental portal hypertension.

**Methods** It was a retrospective descriptive and analytical study, conducted between 2013 and 2018, and including all patients with SHT.

**Results** During the period of study, we had recorded 18 patients with SHT. The mean age of patients was 34 years +/- 17.46 with a sex-ratio M/F of 1.6. Clinically, 27.7% (n=5) of patients had an upper digestive hemorrhage, 22.2% (n=4) had a splenomegaly, 22.2% (n=4) of patients had jaundice, 1 patient had collateral venous circulation (5.55%), 1 patient had ascites. Endoscopically, 27.7% (n=5) had gastroesophageal varices (GOV) grade II, 1 patient had isolated gastric varices type I, and 1 patient had Portal hypertensive gastropathy, 11 patients didn't develop varices despite splenomegaly and collateral venous circulation. the causes of SHT were as following: 44.4% (n=8) of the cases were pancreatic body tumor, 4 patients (22.4%) had a gastric tumor, one had a pancreatic pseudocyst, one had chronic calcific pancreatitis, one had a wandering spleen, one had a left pheochromocytoma, and one had a splenic vein thrombosis. The evolution of varices was marked by no recurrence of GOV after eradication in 16.6% (n=3) of cases, variceal hemorrhage in one case (5.55%), regression of isolated gastric varices type I in one case (5.55%) after cephalic duodenopancreatectomy, and persistence of GOV grade I without hemorrhage in one case (5.55%).

**Conclusions** SPH is a rare cause of varices. it was essentially gastroesophageal varices in our experience which the evolution was marked by the no recurrence of GOV after eradication and disappearance of the varices once the cause is resolved.

## eP11 FEASIBILITY, SAFETY AND EFFECTIVENESS OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTROINTESTINAL LESIONS IN OUT- VS INPATIENT SETTING

**Authors** Sferrazza S<sup>1</sup>, Maida M<sup>2</sup>, Vieceli F<sup>1</sup>, de Pretis N<sup>3</sup>, Armelao F<sup>1</sup>, Tasini E<sup>1</sup>, de Pretis G<sup>1</sup>  
**Institute** 1 Santa Chiara Hospital, APSS, Gastroenterology and Endoscopy Unit, Trento, Italy; 2 S Elia – Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 3 Regional Hospital of Bolzano, Gastroenterology Unit, Bolzano, Italy

**DOI** 10.1055/s-0041-1724512

**Citation:** Sferrazza S, Maida M, Vieceli F et al. eP11 FEASIBILITY, SAFETY AND

EFFECTIVENESS OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTROINTESTINAL LESIONS IN OUT- VS INPATIENT SETTING. *Endoscopy* 2021; 53: S100.

**Aims** Endoscopic submucosal dissection (ESD) allows 'en-bloc' resection of superficial gastrointestinal neoplasms, which has implications for complete excision and pathological analysis. Patients undergoing ESD are usually managed as inpatients. This study aimed to compare feasibility, safety and efficacy of ESD for in- and outpatient setting.

**Methods** We retrospectively reviewed a prospective cohort of 111 consecutive patients undergoing ESD at one Italian tertiary referral center, from March 2018 to March 2020.

**Results** One hundred and eleven in- and outpatients with 111 lesions undergoing ESD were reviewed. Of these, 77.5% were inpatients and 22.5% outpatients. Mean age was 70.45±12.6 and 66.6±11.8 years, respectively (p=0.19). In both groups, most lesions were lateral spreading tumors (LSTs): 51.8% and 52%, respectively. Inpatients showed a slightly larger mean lesion size (37.3±15.1 vs 34.8±16.5 mm, p=0.48) and a higher prevalence of Kudo type IV lesions (70.4% vs 54.2%, p=0.04). All procedures but one were technically successful. The median procedure time was 110.3 vs 80.2 minutes (p=0.006). Complications were registered in 6/86 (7%) of inpatients vs 1/25 (4%) of outpatients (p=0.25) and included 2 intraprocedural perforations and 4 cases of bleeding in the inpatient group, 1 bleeding in the outpatient group. All outpatients were observed for 4-6 hours and discharged the same day of procedure. R0 resection was achieved in 73/87 (84.9%) and 19/25 (76%) of patients, respectively (p=0.3). After a median follow-up of 10.5 months, recurrence was observed in 1/86 inpatients and in 0/25 outpatients. The only case of recurrence was radically treated with cold EMR.

**Conclusions** Our experience confirmed that ESD is feasible, effective and safe also in outpatient settings for selected gastrointestinal lesions.

## eP12 EFFECTIVENESS AND SAFETY OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTROINTESTINAL LESIONS WITH SIGNIFICANT SUBMUCOSAL FIBROSIS: A WESTERN PROSPECTIVE COHORT STUDY

**Authors** sferrazza s<sup>1</sup>, Vieceli F<sup>1</sup>, Maida M<sup>2</sup>, Tasini E<sup>1</sup>, Armelao F<sup>1</sup>, de Pretis G<sup>1</sup>, Fuccio L<sup>3</sup>

**Institute** 1 Santa Chiara Hospital, APSS, Gastroenterology and Endoscopy Unit, Trento, Italy; 2 S Elia – Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 3 S.Orsola-Malpighi University Hospital, Department of Medical and Surgical Sciences, Bologna, Italy

**DOI** 10.1055/s-0041-1724513

**Citation:** sferrazza s, Vieceli F, Maida M et al. eP12 EFFECTIVENESS AND SAFETY OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTROINTESTINAL LESIONS WITH SIGNIFICANT SUBMUCOSAL FIBROSIS: A WESTERN PROSPECTIVE COHORT STUDY. *Endoscopy* 2021; 53: S100.

**Aims** During ESD, submucosal fibrosis can be an additional and often unexpected obstacle to technical success. This study aimed to assess the outcomes and the safety of ESD when submucosal fibrosis is detected.

**Methods** All consecutive patients undergoing ESD at our center as first treatment for gastrointestinal lesions were prospectively enrolled from March 2018 to March 2020. Collected data included patient demographics, procedural outcomes and complication rate. Fibrosis was classified as F0 (no fibrosis), F1 (mild fibrosis in the blue submucosal layer), F2 (whitish submucosa or severe fibrosis). According to fibrosis grade, two groups of lesions were defined: no/mild fibrosis (F0-F1) and severe fibrosis (F2).

**Results** 111 patients (65.8% males, median age 70.9 years) with 111 lesions undergoing ESD were enrolled. 78/111 (70.3%) were colorectal lesions, while 33/111 (29.7%) were located in the upper GI tract. Mean lesion size was 36.7 mm (range 15-82 mm). Technical success rate was 110/111 (99.1%). En bloc resection was not achieved for one lesion with severe fibrosis (F2). In the colon, R0-resection rate was 85.5% for lesions with no/mild fibrosis (F0-F1) and

71.4% for lesions with severe fibrosis (F2) ( $p=0.16$ ). Curative resection rate was significantly higher for F0-F1 lesions compared to F2 lesions (90.9% vs 73.9%,  $p=0.049$ ). No difference in complication rate between the two groups was highlighted. In the upper GI, R0 resection rate was similar between F0-F1 group and F2 group: 84.6% vs 85.7%, respectively. Curative resection rate was higher in the F0-F1 group (88.5% vs 71.4%), without statistical difference ( $p=0.26$ ). Bleeding rate was significantly higher in the F2 group (28.6% vs. 3.8%,  $p=0.043$ ). Mean procedure time was higher for F2 lesions (130 vs 92.5 minutes), with no statistical difference ( $p=0.12$ ).

**Conclusions** Detection of severe fibrosis during ESD could affect procedural outcomes and increase complication rates, therefore it should always be expected and overcome with the correct strategies.

### eP13 EFFECTIVENESS, SAFETY AND FEASIBILITY OF ENDOSCOPIC SUBMUCOSAL DISSECTION: A PROSPECTIVE WESTERN EXPERIENCE LOOKING TO EAST

**Authors** sferrazza s<sup>1</sup>, Maida M<sup>2</sup>, Fuccio L<sup>3</sup>, Vieceli F<sup>1</sup>, de Pretis N<sup>4</sup>, Iori A<sup>1</sup>, Faitini K<sup>1</sup>, Tasini E<sup>1</sup>, Armelao F<sup>1</sup>, Maselli R<sup>5</sup>, Repici A<sup>5</sup>, de Pretis G<sup>1</sup>

**Institute** 1 Santa Chiara Hospital, APSS, Gastroenterology and Endoscopy Unit, Trento, Italy; 2 S Elia – Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 3 S.Orsola-Malpighi University Hospital, Department of Medical and Surgical Sciences, Bologna, Italy; 4 Regional Hospital of Bolzano, Gastroenterology Unit, Bolzano, Italy; 5 Humanitas Research Hospital, Digestive Endoscopy Unit, Division of Gastroenterology, Milan, Italy  
DOI 10.1055/s-0041-1724514

**Citation:** sferrazza s, Maida M, Fuccio L et al. eP13 EFFECTIVENESS, SAFETY AND FEASIBILITY OF ENDOSCOPIC SUBMUCOSAL DISSECTION: A PROSPECTIVE WESTERN EXPERIENCE LOOKING TO EAST. *Endoscopy* 2021; 53: S101.

**Aims** Endoscopic submucosal dissection (ESD) allows en-bloc resection of superficial gastrointestinal neoplasms, which has implications for complete excision, recurrence and pathological analysis. This study aimed to assess the effectiveness, safety and feasibility of ESD as a treatment for gastrointestinal lesions in a western cohort.

**Methods** All consecutive patients undergoing ESD at one Italian tertiary referral center were prospectively enrolled from September 2018 to March 2020. Primary outcomes were en-bloc resection rate, R0 resection rate and adverse events rate.

**Results** One hundred and eleven patients (65.8% males, median age 70.9 years) with 111 lesions undergoing ESD were included in the study. Among these, 86/111 (77.5%) were managed as inpatients, 25/111 (22.5%) as outpatients. Overall, 63/111 lesions (56.8%) were located in the rectum, 15/111 (13.5%) in the colon, 27/111 (24.3%) in the stomach and 6/111 (5.4%) in the esophagus. The mean lesion size was 36.7 mm (range 15-82 mm).

En bloc resection was achieved in all but one case (99.1%). R0 resection was achieved in 95/111 patients (85.6%): 55/63 for rectal (87.3%), 12/15 for colonic (80%), 23/27 for gastric (85.2%) and 5/6 for esophageal lesions (83.3%). The overall curative resection rate was 82.0%. Median procedure time was 95 minutes (IQR 75-120). Major adverse events were observed in 12 cases (10.8%): 5 cases of intra-procedural perforations (4.5%), 6 post-procedural bleeding (5.4%) and one case of transient urinary retention. All luminal adverse events were treated endoscopically. After a median follow-up of 9.1 months (range 3-25.5), only one case of recurrence, radically treated with cold EMR, was registered.

**Conclusions** Our experience confirms that ESD is an effective, safe and feasible treatment for early gastrointestinal neoplasia and that Asian's standards can also be obtained in Western endoscopy units. Therefore, also in Western countries, ESD should be considered as a therapeutic option for lesions that require an 'en-bloc' resection.

### eP14 PNEUMATIC BALLOON DILATION FOR THE TREATMENT OF POST-FUNDOPLICATION SYMPTOMS: LONG-TERM EFFICACY AND SAFETY RESULTS

**Authors** Gkolfakis P<sup>1</sup>, Lorenzo D<sup>1</sup>, Blero D<sup>1</sup>, Louis H<sup>1</sup>, Lemmers A<sup>1</sup>, Arvanitakis M<sup>1</sup>, Eisendrath P<sup>1</sup>, Devière J<sup>1</sup>

**Institute** 1 Erasme University Hospital, Université Libre de Bruxelles, Department of Gastroenterology Hepatopancreatology and Digestive Oncology, Brussels, Belgium

DOI 10.1055/s-0041-1724515

**Citation:** Gkolfakis P, Lorenzo D, Blero D et al. eP14 PNEUMATIC BALLOON DILATION FOR THE TREATMENT OF POST-FUNDOPLICATION SYMPTOMS: LONG-TERM EFFICACY AND SAFETY RESULTS. *Endoscopy* 2021; 53: S101.

**Aims** Post-laparoscopic fundoplication (LF) dysphagia occurs in 5%-17% of patients and its optimal management remains questionable. We assessed the safety and efficacy of pneumatic dilation (PD) in patients with post-LF symptoms.

**Methods** Medical files of all patients treated with at least one PD for post-fundoplication-associated symptoms were reviewed. Demographic, clinical, radiological and endoscopic data were collected. Long-term clinical success was the primary outcome, while PD-related complication incidence comprised the secondary endpoint.

**Results** From 2006 to 2019, 50 patients [76% women, 58.5±11.8 years, median follow-up 665 (304-1566) days] underwent 79 PD (mean: 1.58±0.84) with dysphagia being the most common symptom (78%; mean Eckardt score 4.84±1.88), followed by pain (10%) and vomiting (6%). A 30mm, 35mm and 40mm balloon was used in 45.6%, 43% and 11.4% of the dilations, respectively. Among 49 patients with available follow-up, 39 (79.6%; 95%CI 65.2-89.3) had an initial clinical response, while symptoms recurred in 9 patients (23.1%; 95%CI 11.7-39.7) and 4 of them were effectively treated by a new dilation. Thus, the overall long-term success rate of PD was 34/49 (69.4%; 54.4-81.3%). Among 15 non-responders to PD, 12 underwent surgery (24.5% 95%CI 13.8-39.2; Nissen redo 58%). Overall, 4 complications (2 perforations, 1 muscularis dilaceration and 1 severe bleeding) occurred in 4 patients [incidence: 5.1% (95%CI; 2-12.3)]. The first perforation occurred at the level of the plicature (PD at 30mm), the second at the lower esophagus (PD at 40mm), while dilaceration occurred also at the lower esophagus after a PD at 35mm. An intrathoracic slipping of the Nissen was absent in all three cases. They were effectively treated with self-expandable metallic esophageal stents. Significant bleeding followed a PD at 35mm and was ceased using hemostatic clips.

**Conclusions** Pneumatic balloon dilation for post-fundoplication-associated symptoms is associated with satisfactory long-term success rate and acceptable safety profile.

### eP15 THE TRUE FALSE NEGATIVE RATE OF COLON CAPSULE ENDOSCOPY IS LOW

**Authors** Semenov S<sup>1,2</sup>, MS Ismail<sup>1,2</sup>, O'Hara F<sup>1,2</sup>, O'Donnell S<sup>1</sup>, O'Connor A<sup>1</sup>, Breslin N<sup>1</sup>, Ryan B<sup>1</sup>, McNamara D<sup>1,2</sup>

**Institute** 1 Tallaght University Hospital, Gastroenterology, Dublin, Ireland; 2 Trinity College Dublin, Trinity Academic Gastroenterology Group, Dublin, Ireland

DOI 10.1055/s-0041-1724516

**Citation:** Semenov S, Ismail MS, O'Hara F et al. eP15 THE TRUE FALSE NEGATIVE RATE OF COLON CAPSULE ENDOSCOPY IS LOW. *Endoscopy* 2021; 53: S101.

**Aims** Colon capsule endoscopy (CCE) is an established diagnostic tool for colonic pathology. There is a lack of clinical data on the true capsule false negative (FN) rates. We aimed to assess the causes of missed pathology in a CCE cohort.

**Methods** Single-centre retrospective 9-year study. 2<sup>nd</sup> generation CCEs with at least one follow-up colonoscopy within 18 months were identified. Missed pathology on the index capsule were identified by comparing reports against colonoscopy. Indication, bowel preparation, missed lesion/pathology

characteristics (type, significance, location and histology) were collated. FN studies were re-read by experts unblinded to CCE and colonoscopy findings. On re-reading, new lesions/pathology were verified by an expert panel. Missed lesions identified on re-reading the original study were considered reader error, those not identified on re-reading were considered true FN events.

**Results** Of 532 CCEs, 210 (39%) had a comparative colonoscopy (mean interval 4 months; range 0-18). In all, 49 (23%) had missed pathology, 30/49 (61%) reached the section of the colon with the missed pathology.

Of the 30 discrepant studies, 24 (80%) had adequate preparation. Indications included 14 (47%) polyp surveillance, 12 (40%) GI symptoms, 3 (10%) IBD and 1 (3%) screening. Missed pathology included diminutive polyps 18 (60%), polyps  $\geq 6$ mm 8 (27%), inflammation 4 (13%). Missed lesions were evenly distributed, 14 right and 16 left colon. Of polyps 18/26 (69%) were adenomas. No cancers were missed.

Reader error accounted for 23/30 (77%) cases, while 7/30 (23%) CCEs were true FN events. Missed pathology was due to true capsule error 7/210 (3.3%), reader error 23/210 (11%), incomplete studies 19/210 (9%). Poor preparation was a factor in 6/30 (20%) cases. Missed pathology was more likely a result of reader error versus capsule error, OR 3.2 ( $p=0.018$ , 95%CI:1.22-8.80).

**Conclusions** Our study suggests a low true CCE false negative rate. Reader error accounts for most missed pathology.

## eP16 THE ADVANTAGE OF WATER-ASSISTED COLONOSCOPY REGARDING TOTAL PROCEDURE TIME, CECUM INTUBATION AND ADENOMA DETECTION RATE

**Authors** Chiriac S<sup>1,2</sup>, Stanciu C<sup>2</sup>, Cojocariu C<sup>1,2</sup>, Sfarti C<sup>1,2</sup>, A-M Singeap<sup>1,2</sup>, Girleanu I<sup>1,2</sup>, Huiban L<sup>1</sup>, Cuciureanu T<sup>1</sup>, Cristina M<sup>1</sup>, Trifan A<sup>1,2</sup>

**Institute** 1 "Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania; 2 St. Spiridon" Emergency Hospital, Institute of Gastroenterology and Hepatology, Iasi, Romania

DOI 10.1055/s-0041-1724517

**Citation:** Chiriac S, Stanciu C, Cojocariu C et al. eP16 THE ADVANTAGE OF WATER-ASSISTED COLONOSCOPY REGARDING TOTAL PROCEDURE TIME, CECUM INTUBATION AND ADENOMA DETECTION RATE. *Endoscopy* 2021; 53: S102.

**Aims** Water-assisted colonoscopy (WAC) has been used as a reliable alternative to air insufflation colonoscopy (AIC), reducing pain and facilitating completion of difficult colonoscopies. It consists of replacing gas insufflation with water during colonoscopy. The adenoma detection rate (ADR) is inversely associated with the risk of colon cancer and is also applied in patients undergoing colonoscopy for diagnostic indications. We aimed to establish the impact of WAC in hospitalized patients undergoing colonoscopy for diagnostic indications.

**Methods** Consecutive patients undergoing colonoscopy between January and March 2019, in out-patient and in-patient setting were retrospectively included. WAC or AIC were indicated by the physician. The ADR, total procedure time (TPT) and cecum intubation rate (CIR) were calculated.

**Results** 43 patients were included, 74.4% men, aged 59.62 $\pm$ 16.32 years. The indications were: gastrointestinal bleeding (58.1%), abdominal pain (23.3%), bowel habit change (11.6%), anemia (7%). Mean TPT was 31.5 $\pm$ 11.5 minutes. Cecum intubation was achieved in 83.8% cases. The reasons for failed CIR were obstructive colon cancer in 50% and pain in 50% of cases. There were no periprocedural complications. The overall ADR was 51.2%, 53.1% in men and 45.5% in women. WAC was used in 15 (34.9%) of patients and was associated with lower TPT (29 $\pm$ 7.9 vs 33 $\pm$ 13.1 minutes,  $p=0.236$ ) higher CIR (92.9% vs 78.3%,  $p=0.043$ ), and with a slightly lower ADR (46.7% vs 53.6%,  $p=0.666$ ) than AIC.

**Conclusions** WAC is a reliable and safe method in diagnostic colonoscopy, reducing TPT and improving CIR without reducing ADR.

## eP17 OVER-THE-SCOPE CLIPS (OTSC®) VERSUS SURGERY FOR REFRACTORY PEPTIC ULCER BLEEDING

**Authors** Kuellmer A<sup>1</sup>, Mangold T<sup>1</sup>, Bettinger D<sup>1,2</sup>, Maruschke L<sup>3</sup>, Wannhoff A<sup>4</sup>, Caca K<sup>4</sup>, Wedi E<sup>5</sup>, Jung C<sup>6</sup>, Kleemann T<sup>7</sup>, Schulz T<sup>8</sup>, Thimme R<sup>1</sup>, Schmidt A<sup>1</sup>

**Institute** 1 University of Freiburg, Faculty of Medicine, Department of Medicine II, Medical Center Freiburg, Freiburg, Germany; 2 University of Freiburg, Berta-Ottenstein-Programme, Freiburg, Germany; 3 University of Freiburg, Faculty of Medicine, Department of Radiology, Freiburg, Germany; 4 Hospital Ludwigsburg, Department of Internal Medicine and Gastroenterology, Ludwigsburg, Germany; 5 Sana Klinikum Offenbach, Medizinische Klinik II/IV, Offenbach, Germany; 6 University Medical Center Göttingen, Department of Gastroenterology and Gastrointestinal Oncology, Göttingen, Germany; 7 Carl-Thiem-Klinikum Cottbus, Medizinische Klinik IV, Cottbus, Germany; 8 Carl-Thiem-Klinikum Cottbus, Institut für Radiologie, Cottbus, Germany

DOI 10.1055/s-0041-1724518

**Citation:** Kuellmer A, Mangold T, Bettinger D et al. eP17 OVER-THE-SCOPE CLIPS (OTSC®) VERSUS SURGERY FOR REFRACTORY PEPTIC ULCER BLEEDING. *Endoscopy* 2021; 53: S102.

**Aims** Surgery and Transcatheter arterial embolization are considered standard treatment of peptic ulcer bleeding (PUB) refractory to endoscopic hemostasis. Over-The-Scope clips (OTSC) have shown superiority to standard endoscopic treatment but a comparison with surgery has not been performed, yet.

**Methods** In this retrospective study, 103 patients with refractory peptic ulcer bleeding treated either with OTSC (n=66) or surgery (n=37) between 2009-2019 at four academic centers were analyzed. Primary endpoint was clinical success defined as successful hemostasis and absence of rebleeding within 7 days and in-hospital mortality. Main secondary endpoints were overall and procedure-related adverse events, length of hospital and intensive care unit stay and number of transfusions. Univariate and multivariate logistic regression was performed for analysis of risk factors for mortality.

**Results** Baseline characteristics were similar in both groups regarding age, comorbidities, number of prior hemostasis attempts, ulcer size  $>20$ mm, and localization. The surgical group included significantly more Forrest Ia bleedings (64.9% vs. 19.7%  $p=0.001$ ) and had more patients in shock (78.1% vs. 43.9%:  $p=0.002$ ). Clinical success was similar in both groups (OTSC: 74.2% vs surgery: 83.8%;  $p=0.329$ ). In-hospital mortality was significantly higher in the surgical group (35.1% vs. 9.1%;  $p=0.002$ ) as well as stay on the ICU (7.1 vs. 18.8 days;  $p<0.001$ ), number of blood transfusions (9.4 vs. 19.9;  $p<0.001$ ), and complications arising from re-therapy after failure of OTSC or surgical treatment (37.5% vs. 4.5%;  $p<0.001$ ). Univariate and multivariate logistic regression confirmed complications after re-therapy as main risk factor for in-hospital mortality.

**Conclusions** OTSC treatment for refractory peptic ulcer bleeding shows comparable efficacy to surgery and a significantly reduced mortality. Complications following surgical treatment are responsible for this difference as shown in univariate and multivariate logistic regression.

## eP18 AN EVALUATION OF OUTCOMES FOLLOWING ENDOSCOPIC BALLOON DILATATION OF STRICTURES IN CROHN'S DISEASE PATIENTS IN A TERTIARY IRISH HOSPITAL

**Authors** Walker C<sup>1</sup>, Carroll A<sup>1</sup>, McKearney E<sup>1</sup>, Deane C<sup>1</sup>, Breslin N<sup>1</sup>, McNamara D<sup>1</sup>, O'Donnell S<sup>1</sup>, Ryan B<sup>1</sup>, O'Connor A<sup>1</sup>

**Institute** 1 Tallaght University Hospital, Gastroenterology Department, Tallaght, Dublin, Ireland

DOI 10.1055/s-0041-1724519

**Citation:** Walker C, Carroll A, McKearney E et al. eP18 AN EVALUATION OF OUTCOMES FOLLOWING ENDOSCOPIC BALLOON DILATATION OF STRICTURES IN CROHN'S DISEASE PATIENTS IN A TERTIARY IRISH HOSPITAL. *Endoscopy* 2021; 53: S102.

**Aims** To evaluate outcomes following endoscopic balloon dilatation (EBD) of strictures in patients with Crohn's disease (CD).

**Methods** A retrospective study of 45 EBDs on 23 patients. Details about the stricture and dilatation were obtained from endoscopy reports. Charts were reviewed for information about re-admission, escalation of medical therapy, repeat EBD, and surgery.

**Results** 98% of EBDs were successful without complications. One failed due to inability to pass the guidewire. Within 30 days of EBD, 9% were admitted, three for management of flares and one for *C.difficile* infection.

The range of diameter of dilatation was 8–20mm. The median was 15mm. In dilatations >15mm 50% required surgery, and <15mm 35% required surgery. When EBD was applied to anastomotic strictures, 33% required surgery, compared to 45% in native strictures.

Triamcinolone was used in 9% of EBDs - 4% of first dilatations and 17% of repeat dilatations. Where medical therapy was escalated within 12 months of EBD, reflecting active disease, 50% avoided surgery.

**Conclusions** EBD of strictures in CD is a safe treatment which can delay and reduce the need for surgery. Following EBD, 56% of patients did not require surgical intervention at 5 years. As studies suggest, EBD of anastomotic strictures yielded a better response than when applied to native strictures. However contrary to other studies, surgical intervention was less frequent following EBD with a smaller balloon diameter. Further determination of predictors of positive outcomes would allow for more selective application of EBD.

► **Tab. 1** Outcomes Following EBD

	No Further Intervention	Repeat Dilatation	Surgery
Year 1	68 %	12 %	20 %
Year 3	42 %	29 %	29 %
Year 5	28 %	28 %	44 %

## eP19 EVOLUTION OF BARRETT'S ASSESSMENT IN A TERTIARY REFERRAL CENTER OVER TIME

**Authors** Rasool J<sup>1</sup>, Janjua F<sup>1</sup>, Aoko O<sup>1</sup>, Christopher B<sup>1</sup>, Cheriyan D<sup>1</sup>, Patchett S<sup>1</sup>

**Institute** 1 Beaumont Hospital, Gastroenterology, Dublin, Ireland

**DOI** 10.1055/s-0041-1724520

**Citation:** Rasool J, Janjua F, Aoko O et al. eP19 EVOLUTION OF BARRETT'S ASSESSMENT IN A TERTIARY REFERRAL CENTER OVER TIME. *Endoscopy* 2021; 53: S103.

**Aims** Barrett's oesophagus is associated with 24 fold increase in risk of Oesophageal cancer. Seattle biopsy protocol is gold standard in Barrett's surveillance. Adherence to Seattle protocol increases dysplasia detection rate (DDR). In addition, the inclusion of chromoendoscopy with Narrow band imaging (NBI) and Acetic Acid spray (AA) is also associated with improved dysplasia detection rate. Our aim was to review how our assessment of Barrett's oesophagus with regards to the use of chromoendoscopy, adherence to Seattle Protocol and documentation of Prague classification has evolved over time at our institute and if dysplasia detection rate improved concomitantly.

**Methods** It was a retrospective study. First 50 patients with Barrett's oesophagus at 3 different time points (2013, 2016, 2019) were included. Data of consecutive 50 patients from each year was retrieved through electronic database. Patients with known dysplasia, prior treatment for dysplasia and contraindication for biopsy were excluded.

**Results** A total of 150 patients were included in the study. Mean age 65 (66% males). Documentation of Prague classification increased from 50% (2013) to

94% (2019) while Seattle protocol adherence increased from 56% (2013) to 89.6% (2019). Seattle Protocol adherence in short segment Barrett's (SSBE) improved from 50% (2013) to 94.7% (2019) and in long segment Barretts (LSBE) from 62.5%(2013) to 86.2% (2019). Dysplasia detection rate increased from 8% (2013) to 18% (2019) and was higher in long segment (16%) than short segment (2%). Also use of Chromoendoscopy has increased from 0% AA, & 4%NBI (2013) to 62% & 86% (2019).

**Conclusions** Our study showed improvement in adherence to Seattle protocol, use of chromoendoscopy and dysplasia detection rate over time.

## eP20V HITTING THE BULL'S-EYE IN BARRETT'S ESOPHAGUS: THE IMPORTANCE OF CAREFUL INSPECTION

**Authors** Küttner-Magalhães R<sup>1,2</sup>, Garrido M<sup>1</sup>, Alves-Silva J<sup>1</sup>, Marques-de-Sá I<sup>3</sup>, Peixoto C<sup>4</sup>, Pedroto I<sup>1,2</sup>

**Institute** 1 Santo António Hospital, Porto University Hospital Center, Gastroenterology, Porto, Portugal; 2 Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal; 3 Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal; 4 Santo António Hospital, Porto University Hospital Center, Pathology, Porto, Portugal

**DOI** 10.1055/s-0041-1724521

**Citation:** Küttner-Magalhães R, Garrido M, Alves-Silva J et al. eP20V HITTING THE BULL'S-EYE IN BARRETT'S ESOPHAGUS: THE IMPORTANCE OF CAREFUL INSPECTION. *Endoscopy* 2021; 53: S103.

A 67-year-old female with heartburn underwent upper endoscopy revealing a Grade C reflux esophagitis. After twice a day proton pump inhibitor, upper endoscopy was repeated and a COM1-2 (~15mm) Barrett's Esophagus with a diminutive Paris 0-IIa suspicious lesion with high grade dysplasia was detected. Band-assisted endoscopic mucosal resection was performed. Histopathological result was consistent with a 2mm, well/moderately differentiated adenocarcinoma, m3, LVO, RO in Barrett's Esophagus.

We highlight the importance of repeating upper endoscopy after reflux esophagitis and the value of very carefully inspecting Barrett's Esophagus to be able to detect discreet, although clinically relevant lesions.

## eP21 BARRETT'S ESOPHAGUS RADIOFREQUENCY ABLATION AND 24-HOUR PH-METRY

**Authors** Steshenko A<sup>1</sup>, Kiosov A<sup>1</sup>

**Institute** 1 Zaporizhzhia State Medical University, Faculty Surgery, Zaporizhzhia, Ukraine

**DOI** 10.1055/s-0041-1724522

**Citation:** Steshenko A, Kiosov A. eP21 BARRETT'S ESOPHAGUS RADIOFREQUENCY ABLATION AND 24-HOUR PH-METRY. *Endoscopy* 2021; 53: S103.

**Aims** The aim of our study to determine the effect of the duration of acid reflux with daily pH-metry on the incidence of recurrence of specialized cylinder cell metaplasia with LGD and changes in management.

**Methods** The study included 15 patients with Barrett's esophagus with the length of the circular segment more than 5 cm. In all cases, low grade dysplasia was histologically confirmed in different laboratories and with a second opinion from an expert pathologist. All patients underwent radiofrequency ablation using a balloon 360-degree probe or focal probes according to the standard technique. All patients received proton pump blockers. The patients were divided into two groups. The first group included 8 (53,3%) patients whose acid reflux was less than 20% according to daily pH-metry. The second group included 7 (46,7%) patients whose acid reflux was more than 40% according to daily pH-metry. All statistical analyzes were performed using SPSS V27.0 software (IBM).

**Results** The study showed that in the first group, to remove metaplastic epithelium, it was sufficient to perform one stage of radiofrequency ablation followed by therapy with proton pump blockers and fundoplication. The



second group required two stages of radiofrequency ablation of metaplastic epithelium. In cases of PPI-refractory esophagitis, the first step was endoscopic antireflux argon plasma ablation (ARMA) or laparoscopic fundoplication, and the second step was radiofrequency ablation. In the long-term period, there was no recurrence of the disease.

**Conclusions** To improve the results of radiofrequency ablation of Barrett's esophagus and determine the optimal treatment management, daily pH-metry can be used.

## eP22 5-YEAR FOLLOW-UP OF PATIENTS AFTER HYBRID-APC OF BARRETT'S ESOPHAGUS WITH DYSPLASIA: CASE-SERIES RESULTS

**Authors** Kashin S<sup>1</sup>, Vidyaeva N<sup>2</sup>, Kuvaev R<sup>1,3</sup>, Kraynova E<sup>4</sup>, Manner H<sup>5</sup>  
**Institute** 1 Yaroslavl Regional Cancer Hospital, Endoscopy, Yaroslavl, Russian Federation; 2 Yusupov Hospital, Endoscopy, Moscow, Russian Federation; 3 Pirogov Russian National Research Medical University, Gastroenterology, Moscow, Russian Federation; 4 Yaroslavl Regional Cancer Hospital, Pathology, Yaroslavl, Russian Federation; 5 Klinikum Frankfurt Höchst, Clinic for Internal Medicine 2, Frankfurt am Main, Germany  
 DOI 10.1055/s-0041-1724523

**Citation:** Kashin S, Vidyaeva N, Kuvaev R et al. eP22 5-YEAR FOLLOW-UP OF PATIENTS AFTER HYBRID-APC OF BARRETT'S ESOPHAGUS WITH DYSPLASIA: CASE-SERIES RESULTS. *Endoscopy* 2021; 53: S104.

**Aims** The purpose of present study was to evaluate long-term efficacy and safety of new Hybrid-APC therapy for dysplastic Barrett's esophagus (BE) after onsite training.

**Methods** Therapeutic procedures were performed by single operator after onsite training by experienced in Hybrid-APC endoscopist. During that training was developed standardized protocol, according to which Hybrid-APC has to be carried out by hybrid-APC probe with waterjet system (ERBE, Germany) as 5-step procedure: marking, submucosal injection, 1<sup>st</sup> mucosa ablation (60 Watt), removal of tissue remnants, 2<sup>nd</sup> ablation (40Watt). Endoscopic surveillance with 4-quadrant biopsies from former BE segment was performed in 3, 6 months and then annually. An experienced gastrointestinal pathologist assessed biopsy specimens.

**Results** 11 patients with dysplastic BE (5 male and 6 female, mean age 46 years (range 25 – 63)) were treated with Hybrid-APC from July 2014 to September 2017. The mean BE length was C1M2. 5 EMRs of visible lesions and 18 Hybrid-APC sessions were successfully performed. Complete BE eradication was achieved in all patients after a mean of 1.6 (range 1-3) ablation sessions. There was one treatment-related stricture (9.1%) after Hybrid-APC combined with EMR in same session; it was managed by balloon dilatation. Patients were followed-up for a mean of 4.9 years (range 41-77 months) after complete BE eradication. Recurrence of metaplasia or dysplasia was not seen in any patient. We took 274 biopsy samples, 36 of them (13.1%) contained subepithelial lamina propria. Buried intestinal metaplasia or dysplasia was not found in any biopsies specimens.

**Conclusions** According to this case-series study, Hybrid-APC was effective and safe method for treatment of dysplastic BE. During 5-year follow-up there were not any recurrences of intestinal metaplasia and dysplasia or any serious complications. Since Hybrid-APC is highly operator dependent technique our data emphasizes importance of proper training and adherence to standardized treatment and surveillance protocol to provide good long-term results.

## eP23 SCREENING FOR SYNCHRONOUS ESOPHAGEAL SECOND PRIMARY TUMORS IN PATIENTS WITH HEAD AND NECK CANCER

**Authors** van de Ven SEM<sup>1</sup>, de Graaf W<sup>1</sup>, Bugter O<sup>2</sup>, Spaander MCW<sup>1</sup>, Nikkessen S<sup>1</sup>, de Jonge PJF<sup>1</sup>, Hardillo JA<sup>2</sup>, Sewnaik A<sup>2</sup>, Monserez DA<sup>2</sup>, Mast H<sup>3</sup>, Keereweer S<sup>2</sup>, Bruno MJ<sup>1</sup>, Baatenburg de Jong RJ<sup>2</sup>, Koch AD<sup>1</sup>  
**Institute** 1 Erasmus MC Cancer Institute, University Medical Center Rotterdam, Gastroenterology and Hepatology, Rotterdam, Netherlands; 2 Erasmus MC

Cancer Institute, University Medical Center Rotterdam, Otorhinolaryngology and Head and Neck Surgery, Rotterdam, Netherlands; 3 Erasmus MC Cancer Institute, University Medical Center Rotterdam, Oral and Maxillofacial Surgery, Rotterdam, Netherlands

DOI 10.1055/s-0041-1724524

**Citation:** van de Ven SEM, de Graaf W, Bugter O et al. eP23 SCREENING FOR SYNCHRONOUS ESOPHAGEAL SECOND PRIMARY TUMORS IN PATIENTS WITH HEAD AND NECK CANCER. *Endoscopy* 2021; 53: S104.

**Aims** Patients with head and neck squamous cell carcinoma (HNSCC) have an increased risk of developing esophageal second primary tumors (SPTs). We aimed to determine the incidence, stage and outcome of synchronous esophageal SPTs in patients with HNSCC in a Western population.

**Methods** We performed a prospective, observational, cohort study. Patients diagnosed with HNSCC in the oropharynx, hypopharynx, any other sub-location in combination with alcohol abuse, or patients with two synchronous HNSCCs, between February 2019 and February 2020, were included. Screening esophagogastroduodenoscopy (EGD) was performed in all patients during the work-up for HNSCC. In general, EGD was performed with white light high resolution endoscopy, narrow-band imaging and Lugol chromoendoscopy by an experienced interventional endoscopist within two weeks after HNSCC diagnosis. Esophageal SPT was defined as presence of esophageal squamous cell carcinoma (ESCC) or high grade dysplasia (HGD).

**Results** Eighty-five patients were included. The majority of HNSCC was located in the hypopharynx (33%) or oropharynx (29%). A lesion suspected for esophageal SPT was detected in 24 of 85 patients, which was pathologically confirmed in 5 patients (1 ESCC, 4 HGD). The radiotherapy field was extended to the esophagus in 2 of 5 patients, HGD was treated with endoscopic resection in 3 of 5 patients. None of the esophageal SPTs were detected on MRI and/or CT-scan prior to EGD. Of the remaining 19 patients, 3 had low grade dysplasia on histology whereas the other 16 patients had benign lesions.

**Conclusions** Incidence of synchronous esophageal SPT was 5.9% in our cohort of HNSCC patients. All SPTs were diagnosed at an early stage and treated with curative intent. We believe that screening for synchronous esophageal SPTs in patients with HNSCC is promising and should be first considered in high-risk patients.

## eP24 DYSPHAGIA AS INAUGURAL PRESENTATION OF LYMPHOMA: A DIAGNOSIS HARD TO SWALLOW

**Authors** Bento-Miranda M<sup>1</sup>, João M<sup>2</sup>, Gravito-Soares E<sup>1</sup>, Gravito-Soares M<sup>1</sup>, Souto P<sup>1</sup>, Figueiredo P<sup>1</sup>  
**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal; 2 Instituto Português de Oncologia Francisco Gentil de Coimbra, Gastroenterology, Coimbra, Portugal  
 DOI 10.1055/s-0041-1724525

**Citation:** Bento-Miranda M, João M, Gravito-Soares E et al. eP24 DYSPHAGIA AS INAUGURAL PRESENTATION OF LYMPHOMA: A DIAGNOSIS HARD TO SWALLOW. *Endoscopy* 2021; 53: S104.

**Aims**

**Methods**

**Results** An 18-year-old woman, with no relevant medical history, presented at the Emergency Department for progressive dysphagia, initially for solids and later for liquids, associated with weight loss of 10 kg within 9 months. She had a mild increase in C-reactive protein (3.18 mg/dL; N <0.5). A stenosis of the middle third of the esophagus was identified in esophagogastroduodenoscopy, patent only to the ultra-thin endoscope with normal mucosa, suggesting extrinsic compression. Biopsies of the stenosis showed nonspecific infiltration of the mucosa by normal B lymphocytes. Cervicothoracic CT scan revealed thickening of the upper half of the esophagus, densification of the mediastinal fat and lung parenchyma, and peri-tracheal and hilar adenopathies. The 18-FDG-PET-scan revealed hypermetabolic uptake of the esophagus, supra-diaphragmatic lymph nodes, pleuropulmonary tissue, muscle and bone marrow,

suggestive of high-grade malignancy. Days later, the patient developed right cervicobrachial paraesthesia in relation to a growing cervical mass causing spinal compression from C5 to D1 vertebrae. A guided-ultrasound biopsy followed by a first surgical biopsy of this mass were also inconclusive, so we performed a second surgical macrobiopsy, which finally allowed the definitive diagnosis of an unclassifiable non-Hodgkin B-cell lymphoma, after an extensive workup excluding infectious, autoimmune, immunodeficiency or other malignancy causes. The patient started chemotherapy regimen with R-CHOP followed by R-EPOCH, with symptomatic remission and complete response on 1-month 18-FDG-PET-scan after completion of therapeutic protocol.

**Conclusions** Less than 1% of lymphomas involve the esophagus, and even rarer are the reports of dysphagia as its presentation, being the 2<sup>nd</sup> case in which dysphagia resulted from extrinsic compression/infiltration of the esophageal wall without mucosa macroscopic involvement. Although a young patient, the concomitance of constitutional symptoms with dysphagia should raise lymphoma hypothesis in the differential diagnosis. Additionally, this case highlights the challenging histopathological diagnosis often requiring multiple biopsies. Endoscopic, imaging and histological iconography is presented.

## eP25 A RARE ESOPHAGEAL METASTASIS OF PANCREATIC ADENOCARCINOMA

**Authors** Demirli Atici S<sup>1</sup>, Sert I<sup>2</sup>, Calik B<sup>2</sup>

**Institute** 1 University of Health Sciences Tepecik Training and Research Hospital, General Surgery, Izmir, Turkey; 2 University of Health Sciences Tepecik Training and Research Hospital, General Surgery, Izmir, Turkey

**DOI** 10.1055/s-0041-1724526

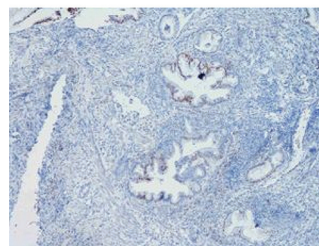
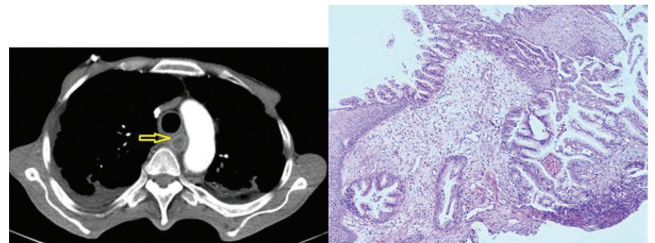
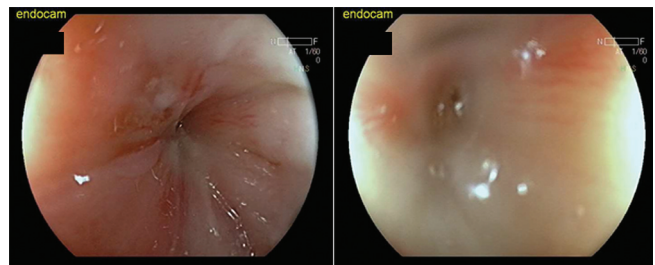
**Citation:** Demirli Atici S, Sert I, Calik B. eP25 A RARE ESOPHAGEAL METASTASIS OF PANCREATIC ADENOCARCINOMA. *Endoscopy* 2021; 53: S105.

**Aims** Pancreatic adenocarcinoma (PA) which is the most common subtype of pancreatic cancer has an aggressive course. Esophageal metastasis (EM) of PA, which has the potential to metastasize to many places, is a rare condition in the literature, and it is difficult to distinguish EM of PA from primary and metachronous esophageal tumors by clinical, endoscopic and radiological imaging methods.

**Methods** A 56-year-old male patient presented with weight loss, epigastric fullness and swelling. Due to the complaints of him, abdomen CT was performed. Then, surgery was performed due to the mass located in the pancreatic body and tail with no distant metastasis finding. The patient was discharged on the 7th day. Histopathological examination showed a 6.5x3.7x2.2cm mass localized in the pancreatic body-tail with 1/9 metastatic lymph node. Surgical margins were free and the tumor compatible with well-differentiated PA.

**Results** The patient was referred to the medical oncology department for postoperative adjuvant chemotherapy. Control imaging methods were performed, due to the decrease in oral intake and increased dysphagia against solid foods in the 20th postoperative month. Upper gastrointestinal endoscopic examination was performed. An appearance of a tumoral mass was detected in the lower end of the esophagus, which obstructed almost the entire lumen. Biopsy was compatible with PA. CT showed that the esophageal lumen was very narrow and there was no distant metastasis finding in the abdomen. Since the tumoral mass in the esophagus was T3 tumor, it was decided to give radiotherapy and chemotherapy to the patient, which was discussed in the multidisciplinary council. Palliative jejunostomy was performed due to increased feeding difficulty. He was referred to the medical oncology department.

**Conclusions** Although primary tumor has been eliminated in patients who have been operated for PA, recurrence may occur with EM during follow-up. Therefore, carefully questioning the anamnesis of the patients regarding oral intake during the follow-up and performing gastroscopy in these patients in case of clinical suspicion may enable the detection of metastasis at earlier stages.



► Fig. 1

## eP26V ENDOSCOPIC MANAGEMENT OF INTRA-GASTRIC MIGRATION OF AN ESOPHAGEAL STENT

**Authors** Oustani M<sup>1</sup>, Zazour A<sup>1</sup>, El Mekkaoui A<sup>1</sup>, Khannoussi W<sup>1</sup>, Kharrasse G<sup>1</sup>, MZ Ismaili<sup>1</sup>

**Institute** 1 Mohammed VI University Hospital, Mohammed the First University, Digestive Disease Research Laboratory, Oujda, Morocco, Gastroenterology, Oujda, Morocco

**DOI** 10.1055/s-0041-1724527

**Citation:** Oustani M, Zazour A, El Mekkaoui A et al. eP26V ENDOSCOPIC MANAGEMENT OF INTRA-GASTRIC MIGRATION OF AN ESOPHAGEAL STENT. *Endoscopy* 2021; 53: S105.

A 78-years-old patient with a metastatic esophago-gastric junction moderately differentiated adenocarcinoma. He presents an aphagia with alteration of the general state. The biological evaluation was without abnormality. Upper gastrointestinal endoscopy showed a tumor stenosis of the lower esophagus that could not be passed. The fully covered esophageal stent was placed (the only one available). The X-ray control the next day showed that the stent had migrated intra-gastric. In this video, we show the technique of stent repositioning.

## eP27 EFFECT OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) TUBE FEEDING ON NUTRITIONAL STATUS IN PATIENTS UNDERGOING CHEMORADIOTHERAPY FOR OESOPHAGEAL CANCER

**Authors** Lemos Garcia J<sup>1</sup>, Vale Rodrigues R<sup>1</sup>, Mão-de-Ferro S<sup>1</sup>, Ferreira S<sup>1</sup>, Serrano M<sup>1</sup>, Faias S<sup>1</sup>, Castela J<sup>1</sup>, Sacarrão R<sup>1</sup>, Francisco F<sup>1</sup>, Trindade J<sup>1</sup>, Sousa L<sup>1</sup>, Dias Pereira A<sup>1</sup> Oesophageal and Gastric Cancer Multidisciplinary Group, Instituto Português de Oncologia de Lisboa Francisco Gentil  
**Institute 1** Instituto Português de Oncologia de Lisboa Francisco Gentil, Gastroenterology, Lisbon, Portugal

DOI 10.1055/s-0041-1724528

**Citation:** Lemos Garcia J, Vale Rodrigues R, Mão-de-Ferro S et al. eP27 EFFECT OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) TUBE FEEDING ON NUTRITIONAL STATUS IN PATIENTS UNDERGOING CHEMORADIOTHERAPY FOR OESOPHAGEAL CANCER. *Endoscopy* 2021; 53: S106.

**Aims** Oesophageal cancer in advanced stages causes dysphagia and weight loss. Malnutrition further worsens with multimodal treatment. Our aim was to evaluate the impact of percutaneous endoscopic gastrostomy (PEG) placement in the nutritional status of patients with oesophageal cancer requiring chemoradiotherapy (CRT).

**Methods** Prospective study. Oesophageal cancer patients proposed to CRT (neoadjuvant/definitive) with dysphagia grade >2 and/or weight loss >10% were submitted to PEG tube placement (pull method) before CRT. A stoma swab was obtained immediately after placement and sent for cytology; in surgical patients, the stoma was resected evaluated for tumour seeding. A matched historical cohort without PEG placement was used as control. Trial ACTRN12616000697482.

**Results** 29 patients included (intervention group, IG), compared to 30 patients (control group, CG). Groups were comparable ( $p > 0.05$ ) – IG: male = 96.6%, age = 65.14 ± 8.66 (50-79), squamous cell carcinoma = 89.7%, stage III = 75.9%, at diagnosis BMI = 22.1 ± 3.9 (16.0-30.8) Kg/m<sup>2</sup> and weight loss of 11.54 ± 7.72%. In the CG, during CRT, 14 (46.7%) patients presented with dysphagia grade 3-4 and 12 required additional nutritional support: nasogastric tube feeding (n = 10), surgical gastrostomy (n = 1) and oesophageal dilation (n = 1). In the IG, 89.7% used the PEG tube during CRT, exclusively in 51.7%. Technical success: 100%. Complications were mainly minor (n = 12, 41.38%), mostly late peristomal infections; 1 major complication (exploratory laparotomy due to suspected colonic interposition, not confirmed). No cytological or histological (n = 12) evidence of stoma tumour seeding.

**Conclusions** Weight loss, hospital admissions, surgical complications and mortality were identical in oesophageal cancer patients referred for CRT, regardless of prophylactic PEG. However, half of the patients required exclusive enteral nutritional support throughout the course of CRT, making PEG tube placement an alternative to consider.

► **Tab. 1** Main outcomes.

	IG (n = 28)	CG (n = 30)	p-value
Weight loss during CRT, % (median [IQR])	6.85 (2.57-10.70)	8.30 (3.62-13.61)	0.289
6-months mortality after CRT or surgery, %	17.2	26.7	0.383
Perioperative complications	6 (54.5%)	5 (55.6%)	1.000
Unplanned hospital admissions	10 (34.5%)	12 (40.0%)	0.661

## eP28 A RARE CASE OF ESOPHAGEAL NEUROENDOCRINE CARCINOMA ARISING ON AN ENDOSCOPIC RESECTION SCAR

**Authors** Ortigão R<sup>1</sup>, Pita I<sup>1</sup>, Marques Sá I<sup>1</sup>, Pinto C<sup>1</sup>, Bastos P<sup>1</sup>, Pimentel-Nunes P<sup>1,2</sup>, Isidro R<sup>3</sup>, Cunha AL<sup>3</sup>, Dinis-Ribeiro M<sup>1,2</sup>, Libânio D<sup>1,2</sup>

**Institute 1** Oncology Institute of Porto, Gastroenterology Department, Porto, Portugal; **2** Faculty of Medicine, University of Porto, MEDCIDS, Porto, Portugal; **3** Oncology Institute of Porto, Pathology Department, Porto, Portugal

DOI 10.1055/s-0041-1724529

**Citation:** Ortigão R, Pita I, Marques Sá I et al. eP28 A RARE CASE OF ESOPHAGEAL NEUROENDOCRINE CARCINOMA ARISING ON AN ENDOSCOPIC RESECTION SCAR. *Endoscopy* 2021; 53: S106.

**Aims** Neuroendocrine carcinoma (NEC) of the esophagus is an extremely aggressive and rare cancer, with a reported incidence of less than 2% of the esophageal cancers.

### Methods

**Results** A 61-year-old woman with gastroesophageal reflux disease underwent esophagogastroduodenoscopy (EGD) due to worsening of epigastric pain. EGD revealed a 10mm flat lesion on the middle third of the esophagus and biopsies demonstrated high grade dysplasia. The patient was referred to our hospital and was submitted to curative endoscopic submucosal dissection (ESD) of the esophageal lesion (high-grade dysplasia, free margins). The patient was submitted to follow-up EGD at 6 and 12 months, that showed a regular scar. Seven months after the last follow-up, the patient presented with chest pain and dysphagia. EGD revealed an ulcero-vegetating tumor with 3cm at the same location of previous ESD. After histological and immunostaining analysis, biopsies showed a poorly differentiated small cell NEC (positivity for synaptophysin; Ki67 > 80%). Subsequent computed tomography supported EGD esophageal findings and identified peri-tumor and hilar adenopathies, and an extensive periceliac nodal conglomerate adherent to the liver. The patient was presented at a multidisciplinary meeting where palliative radiochemotherapy was planned.

**Conclusions** The existence of esophageal NEC with components of adenocarcinoma or squamous cell carcinoma is well established. In this case, the first lesion was curatively resected and consisted only of high-grade dysplasia. This does not support the association between the two lesions, and histopathology revision of the ESD specimen confirmed the absence of neuroendocrine proliferation in the initial lesion. This clinical case highlights the rapidly progressive and aggressiveness of this lesion, and reminds us that alarm symptoms should trigger additional investigation even if there is a recent EGD. This is, to our knowledge, the first case described of esophageal NEC arising on the endoscopic resection scar.

## eP29 DOUBLE LAYER STENT FOR THE TREATMENT OF LEAKS AND FISTULA AFTER UPPER GASTROINTESTINAL ONCOLOGIC SURGERY: A RETROSPECTIVE STUDY

**Authors** [Mandarino FV<sup>1</sup>](#), [Esposito D<sup>2</sup>](#), [Spelta G<sup>1</sup>](#), [Fanti L<sup>2</sup>](#), [Azzolini F<sup>2</sup>](#), [Viale E<sup>2</sup>](#), [Cavestro GM<sup>1</sup>](#), [Testoni PA<sup>1,2</sup>](#)

**Institute** 1 Vita Salute San Raffaele University, Gastroenterology and Digestive Endoscopy, Milan, Italy; 2 San Raffaele Hospital, Gastroenterology and Digestive Endoscopy, Milan, Italy

**DOI** [10.1055/s-0041-1724530](#)

**Citation:** Mandarino FV, Esposito D, Spelta G et al. eP29 DOUBLE LAYER STENT FOR THE TREATMENT OF LEAKS AND FISTULA AFTER UPPER GASTROINTESTINAL ONCOLOGIC SURGERY: A RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S107.

**Aims** Anastomotic dehiscence is one of the most morbidity related and deadly complication after foregut oncologic surgery. The use of self-expanding metal stents (SEMS) has been found effective for the treatment of esophageal post-surgical leaks or fistula. The aim of the study is to evaluate the effectiveness of double layer stents (Niti-S Beta Esophageal Stent) in the management of dehiscences after upper gastrointestinal oncologic surgery.

**Methods** We retrospectively studied consecutive patients who underwent Niti-S Beta Esophageal Stent placement from June 2014 to September 2019 for the treatment of anastomotic leaks/fistula following esophagectomy or gastrectomy for cancer. Data were collected in a dedicated database including patients' characteristics. Univariate 2-sided logistic regression analysis was used to evaluate possible predictors successful anastomotic leak/fistula closure. Data were analysed with MedCalc software (MedCalc Software Ltd, Ostend, Belgium).

**Results** A total of 37 patients were studied and 75 stents were positioned in these patients during the endoscopic procedures. Effective leak/fistula closure was obtained in 23/37 (62.2%). No technical endoscopic failure or complications ensued during the placing of the devices. Regarding delayed complications, migration was observed in 17/75 (22.7%) procedures and stent leaking in 29/75 (38.6%).

Three variables significantly favoured stent treatment failure, namely previous neoadjuvant therapy (OR=9.3 - P=0.01), fistula (instead of leak) (OR=6.5 - P=0.01), and stent leak (OR=17.0 - P=0.01).

**Conclusions** Placement of Beta Niti-S Esophageal stent is a safe and effective method that could be considered for the management of leaks and fistula after upper gastrointestinal for cancer. Crucial points in the management of post-surgical leaks with this technique are the prompt recognition of leaks and fistula, the prompt endoscopic/radiologic drain of collection and the choice of adequate size of the stent.

## eP30 CURATIVE CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION OF A PRIMARY PIGMENTED MELANOMA OF THE ESOPHAGUS AFTER RFA OF BARRETT ESOPHAGUS

**Authors** [Dumoulin J<sup>1</sup>](#), [Abdelhafez M<sup>1</sup>](#), [von Figura G<sup>1</sup>](#), [Krackhardt AM<sup>2</sup>](#), [Mogler C<sup>3</sup>](#), [Schmid RM<sup>1</sup>](#), [Schlag C<sup>1</sup>](#)

**Institute** 1 Klinikum rechts der Isar of TU Munich, II. Medizinische Klinik, Muenchen, Germany; 2 Klinikum rechts der Isar of TU Munich, III. Medizinische Klinik, Muenchen, Germany; 3 TU Munich, Institute of Pathology, Muenchen, Germany

**DOI** [10.1055/s-0041-1724531](#)

**Citation:** Dumoulin J, Abdelhafez M, von Figura G et al. eP30 CURATIVE CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION OF A PRIMARY PIGMENTED MELANOMA OF THE ESOPHAGUS AFTER RFA OF BARRETT ESOPHAGUS. *Endoscopy* 2021; 53: S107.

**Aims** Here we present the case of an 85-year-old male who had received multiple treatment for dysplasia in a Barrett's esophagus by radiofrequency

ablation (RFA) and APC. On endoscopic follow up 16 months after the last the patient showed multiple small polypoid (0-IIa) lesions of black color extending in the former Barrett area which histologically turned out to be a malignant melanoma.

**Methods** Staging (including EUS and PET CT) did not show lymph node or distant metastasis. The lesion was resected en bloc by circumferential endoscopic submucosal dissection (ESD).

**Results** Histopathology showed an R0 resected malignant melanoma with tumor thickness of 1,7 mm and a maximum tumor length axis of 5 cm. Safety margin of 0,1 cm (vertical) and 0,2 cm (lateral), no infiltration of the submucosal layer was revealed. The tumor was negative for BRAF- n-RAS- or cKIT mutation and no MSI. After interdisciplinary discussion of the case, adjuvant treatment with Nivolumab was recommended. The treatment was started 2 months after ESD. A close follow up was initiated.

**Conclusions** PMME are rare tumors arising in >90% of the cases in the distal part of the esophagus. In the case presented the tumor had developed after treatment of Barrett's esophagus by RFA and APC. Thus, it can be speculated that either condition or both contributed to the PMME development. ESD was successful for curative minimal invasive and organ preserving treatment in this elderly comorbid patient.

## eP31V ENDOSCOPIC TREATMENT OF A GIANT ZENKER'S DIVERTICULUM: YES WE CAN!

**Authors** [Sferrazza S<sup>1</sup>](#), [Maida M<sup>2</sup>](#), [Vieceli F<sup>1</sup>](#), [Faitini K<sup>1</sup>](#), [Tasini E<sup>1</sup>](#), [de Pretis G<sup>1</sup>](#)

**Institute** 1 Santa Chiara Hospital, APSS, Gastroenterology and Endoscopy Unit, Trento, Italy; 2 S Elia – Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy

**DOI** [10.1055/s-0041-1724532](#)

**Citation:** Sferrazza S, Maida M, Vieceli F et al. eP31V ENDOSCOPIC TREATMENT OF A GIANT ZENKER'S DIVERTICULUM: YES WE CAN! *Endoscopy* 2021; 53: S107.

A female 79-year-old patient admitted to our hospital due to cachectic state with associated rhabdomyolysis and acute renal failure. The patient had a history of progressive dysphagia that had worsened over the past 5 years. Besides, the most recent clinical history reported access to the emergency department for aspiration pneumonia. Weight at the admission 38 kg. A large and 8 cm deep Zenker's diverticulum was diagnosed. Flexible endoscopic septotomy was performed in general anesthesia. Procedura time 20 minutes. After 24 hours liquid diet was resumed without complication. The patient resumed a semi-solid diet 48 hours after the procedure.

## eP32 RESULTS OF THE ENDOSCOPIC TREATMENT OF PATIENTS WITH ZENKER'S DIVERTICULUM

**Authors** [Pavlov I<sup>1</sup>](#), [Shishin K<sup>1</sup>](#), [Nedoluzhko I<sup>1</sup>](#), [Kurushkina N<sup>1</sup>](#), [Shumkina L<sup>1</sup>](#)

**Institute** 1 Moscow Clinical Scientific Center, Operative Endoscopy, Moscow, Russian Federation

**DOI** [10.1055/s-0041-1724533](#)

**Citation:** Pavlov I, Shishin K, Nedoluzhko I et al. eP32 RESULTS OF THE ENDOSCOPIC TREATMENT OF PATIENTS WITH ZENKER'S DIVERTICULUM. *Endoscopy* 2021; 53: S107.

**Aims** Endoscopic techniques are currently a priority in treating patients with Zenker's diverticulum (ZD). Nevertheless, standard endoscopic treatment is associated with an increased number of disease relapses – up to 20%. On the one hand, the tunnel technique allows performing the adequate volume of myotomy regardless of the diverticulum size. On the other hand, the residual cavity of the diverticulum can be left, which determines the potential risk of recurrence. Therefore we have developed a novel technique that combines all the advantages of standard and tunnel operations.

**Methods** In the period from July 2014 to November 2020, endoscopic operations for ZD were performed in 170 patients. The average diverticulum size was 2.8 cm (0.5 to 7 cm). 34 patients were operated using the standard technique and 38 patients using the tunnel technique. The average time of surgery



in the two groups was 40 minutes. 98 patients were operated on using the combined technique. The average time of surgery was 35 minutes. Upper esophageal myotomy up to 3-7 cm, depending on the size of the diverticulum, was performed in addition to tunnel and combined techniques.

**Results** All patients underwent EGD 3 and 12 months after surgery, followed by annual endoscopic control. In the presence of complaints, an additional X-ray examination was performed. Over the entire follow-up period, 4 (11.8%) patients operated by the standard technique in the postoperative period revealed a relapse of clinical manifestations of the disease, which required a total of 7 (17.1%) repeated operations. After tunnel and combined operations, no relapse of the disease was encountered. No complications in the postoperative period were observed in all three groups.

**Conclusions** The study has shown the high efficiency of combined interventions in the treatment of ZD. Therefore this technique can be used regardless of the size of diverticulum.

### eP33V A RARE CASE OF BILATERAL KILLIAN-JAMIESON DIVERTICULA: IS THERE A PLACE FOR ENDOSCOPIC TREATMENT?

**Authors** Félix C<sup>1</sup>, O'Neill C<sup>1</sup>, Mendo R<sup>1</sup>, Azevedo Rodrigues J<sup>1</sup>, Barreiro P<sup>1</sup>, Chagas C<sup>1</sup>

**Institute** 1 Centro Hospitalar Lisboa Ocidental, Gastroenterology, Lisbon, Portugal

**DOI** 10.1055/s-0041-1724534

**Citation:** Félix C, O'Neill C, Mendo R et al. eP33V A RARE CASE OF BILATERAL KILLIAN-JAMIESON DIVERTICULA: IS THERE A PLACE FOR ENDOSCOPIC TREATMENT? *Endoscopy* 2021; 53: S108.

We present the case of a 68-year-old man with two symptomatic synchronous Killian-Jamieson (KJ) diverticula (2 and 4cm).

Endoscopic diverticulotomy was proposed. A submucosal tunnel was created, starting proximally to the diverticula and extended to both the end of the larger diverticulum and the proximal esophagus.

The septum was exposed and a complete septotomy performed. At 8-weeks follow-up, patient remains asymptomatic.

Endoscopic therapies for KJ diverticulum have been reported as safe and effective. To the best of our knowledge this is the first case of the use of the peroral endoscopic myotomy technique for the treatment of bilateral KJ diverticula.

### eP34 SUBMUCOSAL TUNNELLING TECHNIQUES FOR ZENKER'S DIVERTICULUM: A SYSTEMATIC REVIEW OF EARLY OUTCOMES WITH POOLED ANALYSIS

**Authors** Spadaccini M<sup>1</sup>, Maselli R<sup>1</sup>, Thoguluva Chandrasekar V<sup>2</sup>, Patel HK<sup>3</sup>, Fugazza A<sup>1</sup>, Galtieri PA<sup>1</sup>, Pellegatta G<sup>1</sup>, Attardo S<sup>4</sup>, Carrara S<sup>1</sup>, Anderloni A<sup>1</sup>, Alkandari A<sup>5</sup>, Sharma P<sup>3</sup>, Khashab M<sup>6</sup>, Repici A<sup>1</sup>

**Institute** 1 Humanitas Research Hospital, Rozzano, Italy; 2 Arizona Mayo Clinic, Scottsdale, United States; 3 Kansas City University, Kansas City, United States; 4 Ospedale Maggiore della Carità, Novara, Italy; 5 Al Jahra Hospital, Kuwait City, Kuwait; 6 Johns Hopkins, Baltimore, United States

**DOI** 10.1055/s-0041-1724535

**Citation:** Spadaccini M, Maselli R, Thoguluva Chandrasekar V et al. eP34 SUBMUCOSAL TUNNELLING TECHNIQUES FOR ZENKER'S DIVERTICULUM: A SYSTEMATIC REVIEW OF EARLY OUTCOMES WITH POOLED ANALYSIS. *Endoscopy* 2021; 53: S108.

**Aims** In the last decade, flexible endoscopic septotomy has been reported as a safe and effective treatment for Zenker's diverticulum (ZD). More recently, novel endoscopic submucosal tunneling techniques, namely standard Z-POEM (Zenker PerOral Endoscopic Myotomy) and POES (PerOral Endoscopic Septotomy) (Fig. 1), have been proposed in order to obtain complete muscular septum exposure and deeper myotomy. The aim of this study is to provide a systematic review with meta-analysis of the first experiences of third space approaches for ZD.

**Methods** Electronic databases (Medline, Scopus, EMBASE) were searched up to October 2020. Studies including patients with symptomatic ZD who underwent endoscopic treatment by submucosal tunneling technique were eligible. Procedural, clinical, and safety outcomes were assessed by pooling data with a random-effect model to obtain a proportion with a 95% confidence interval.

**Results** Ten retrospective studies were eligible for inclusion (229 patients). Six studies were performed in the United States, 2 in Europe, and 2 in Asia. Most of the studies (n=7) were single-center experiences, and three studies involved multiple centers. Endoscopic pyloromyotomy was feasible in the 97.3% (I<sup>2</sup>=0%) of patients. In most of the studies (n=7, 166 patients) authors used the standard Z-POEM technique reporting a technical success of 97.5% (I<sup>2</sup>=0%), in a mean procedural time of 44.3 ± 7.5 minutes. In the remaining 3 studies including POES approach performed on 63 patients, the technical success rate was 96.5% (I<sup>2</sup>=0%), in a mean procedural time of 20.4 ± 9.3 minutes. Clinical success was achieved after 93.4% (I<sup>2</sup>=0%) of procedures with comparable rates between standard Z-POEM and POES (93.7% vs 91.1%, respectively). The overall adverse events rate was 5.3% (I<sup>2</sup>=0%) with comparable rates between standard Z-POEM and POES (5.2% vs 7.7%, respectively).

**Conclusions** Flexible endoscopic treatment of ZD performed by a submucosal tunneling technique appears to be a feasible option, with convincing data in terms of safety and promising clinical results in the short term.

### eP35 EFFICACY AND SAFETY OF ENDOSCOPE-GUIDED PNEUMATIC DILATION FOR TREATMENT OF ESOPHAGEAL ACHALASIA

**Authors** Hammami A<sup>1</sup>, Harbi R<sup>1</sup>, Ben Ameer W<sup>1</sup>, Dahmani W<sup>1</sup>, Elleuch N<sup>1</sup>, Braham A<sup>1</sup>, Ajmi S<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksaa M<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute** 1 University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sousse, Tunisia

**DOI** 10.1055/s-0041-1724536

**Citation:** Hammami A, Harbi R, Ben Ameer W et al. eP35 EFFICACY AND SAFETY OF ENDOSCOPE-GUIDED PNEUMATIC DILATION FOR TREATMENT OF ESOPHAGEAL ACHALASIA. *Endoscopy* 2021; 53: S108.

**Aims** Pneumatic dilation (PD) is considered the first line therapy for achalasia. The aim of our work is to evaluate the efficiency of this procedure and to establish the predictive factors of its failure.

**Methods** This is a retrospective study conducted in a Tunisia including all patients who underwent PD for Esophageal achalasia. Clinical remission was defined as an Eckardt score ≤ 3 or adequate symptom reduction measured with a similar validated questionnaire. Treatment failure is defined as the persistence of dysphagia after 3 dilatations or relapse within 2 years.

**Results** We included 42 men and 48 women with an average age of 42 years. Dysphagia and weight loss were the main symptoms found in all patients. Chest pain was noted in 43 patients (47.8%). Regurgitation was observed in 88 patients (97.77%). Upper gastroscopy showed functional stenosis of the esophago-gastric junction in 38 patients (43%). The barium swallow was performed in 68 patients (75.55%). It was normal in 4 patients. Manometry findings showed esophageal aperistalsis and lower esophageal sphincter relaxation disorder in all patients. 38 patients (42.2%) had a lower esophageal sphincter hypertonia and 26 patients (28.8%) had lower esophageal sphincter at normal pressure. After one month of the first balloon dilatation session at 30mmHg: 39 patients (43%) had a score of Eckardt ≤ 3. 24 patients underwent a second 35mmHg balloon dilatation, 8 of whom answered and 4 were in failure. These 4 patients underwent a third balloon dilatation session of 40mmHg and achieved clinical remission. No immediate complication was noted. In bivariate analysis, only young age < 40 years and the presence of chest pain were predictive of failure (p = 0.006). However, no factor was found in multivariate analysis.

**Conclusions** Endoscope-guided PD is an efficient and safe nonsurgical therapy with results comparable to other treatment modalities with low rate of complications.

## eP36 POEM AS A TREATMENT OPTION FOR ACHALASIA IN PATIENTS 65 YEARS OF AGE AND OLDER

**Authors** Kanishev I<sup>1</sup>, Nedoluzhko I<sup>1</sup>, Shishin K<sup>1</sup>, Kurushkina N<sup>1</sup>, Shumkina L<sup>1</sup>

**Institute** 1 Moscow Clinical Scientific Center, Operative Endoscopy, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724537

**Citation:** Kanishev I, Nedoluzhko I, Shishin K et al. eP36 POEM AS A TREATMENT OPTION FOR ACHALASIA IN PATIENTS 65 YEARS OF AGE AND OLDER. *Endoscopy* 2021; 53: S109.

**Aims** POEM is an effective method of treatment in patients with achalasia. The efficacy of that endoscopic intervention is comparable to Heller's operation. Shorter operation time and length of hospital stay, as well as lower complication rate, are among the advantages of the peroral procedure. However, the usage of this operation in patients over 65 years with comorbidities is doubtful.

**Methods** From July 2014 to October 2020 in Moscow Clinical Scientific Center POEM was performed in 280 patients with achalasia. There were 49 patients over 65 years with a mean age of 70.6 years (65-84). Pre-operation diagnostics included high-resolution manometry, upper endoscopy and X-ray imaging. From July 2014 to October 2020 in Moscow Clinical Scientific Center POEM was performed in 280 patients with achalasia. They were 49 patients over 65 years with a mean age of 70.6 years (65-84). Pre-operation diagnostics included high-resolution manometry, upper endoscopy and X-ray imaging.

**Results** The mean operation time was 88.8 minutes. The average number of days at the hospital was 2.91. The results are comparable with a group of patients under 65 years old. Endoscopic control was performed 3, 6 and 12 months after surgery. In all patients, except for two cases, no complications related to POEM were encountered. None of the clinical observations showed the development of complications associated with comorbidities. One patient after the operation had clinical symptoms of reflux esophagitis, which was corrected after the appointment of PPI. Another patient had a relapse of complaints after 11 months. POEM was performed again. Although there are no symptoms for 5 months, dynamic follow-up continues.

**Conclusions** The patient's age and physical status do not affect the duration or technical features of surgery. POEM has shown effectiveness and feasibility in the group of patients over 65 years and may possibly substitute established treatments of achalasia.

## eP37 C-POEM IN ACHALASIA OF THE CRICOPHARYNX: TO DO OR NOT TO DO

**Authors** Albeniz E<sup>1</sup>, Estremera F<sup>2</sup>, Zabalza L<sup>2</sup>, Rosón PJ<sup>3</sup>, Fernández F<sup>3</sup>, Gómez M<sup>2</sup>, Heredia ML<sup>4</sup>, Vila JJ<sup>2</sup>

**Institute** 1 Complejo Hospitalario de Navarra. Navarrabiomed. UPNA. IDISNA, Endoscopy Unit, Pamplona, Spain; 2 Complejo Hospitalario de Navarra, Endoscopy Unit, Pamplona, Spain; 3 Hospital Quirón Malaga, Endoscopy Unit, Malaga, Spain; 4 Hospital Mateu Orfila, Endoscopy Unit, Mahón, Spain

**DOI** 10.1055/s-0041-1724538

**Citation:** Albeniz E, Estremera F, Zabalza L et al. eP37 C-POEM IN ACHALASIA OF THE CRICOPHARYNX: TO DO OR NOT TO DO. *Endoscopy* 2021; 53: S109. Cricopharyngeal achalasia (CA) is a rarely reported entity.

**1st-case:** 40y woman with chronic cervical dysphagia: gastroscopy, barium transit(BT), high-resolution manometry(HRM), ultrasound, CT compatible with CA. During gastroscopy for CA myotomy(C-POEM), an upper pulsating compression was observed. Angio-CT diagnosed lusoria dysphagia.

**2nd-case:** 83y with upper dysphagia and microaspirations. BT, HRM, Angio-CT, Videoradiology CA compatible. Patient only accepted botulinum toxin, worsening symptomatology. Finally patient agreed C-POEM. After tunneling without a cap due to the limited space, myotomy of the cricopharyngeal bar was performed. Immediate symptomatic improvement from the first day.

CA without Zenker's diverticulum requires a careful diagnosis. Endoscopic treatment is feasible.

## eP38 SUBMUCOSAL TUNNELING DIVERTICULAR SEPTOTOMY (STESD) BY DIVERTICULAR PERORAL ENDOSCOPIC MYOTOMY (D-POEM) FOR TREATMENT OF DIVERTICULA OF THE MIDDLE AND LOWER ESOPHAGUS

**Authors** Nagl S<sup>1</sup>, Goelder SK<sup>1</sup>, Ebigbo A<sup>1</sup>, Messmann H<sup>1</sup>

**Institute** 1 University Hospital of Augsburg, Gastroenterology, Augsburg, Germany

**DOI** 10.1055/s-0041-1724539

**Citation:** Nagl S, Goelder SK, Ebigbo A et al. eP38 SUBMUCOSAL TUNNELING DIVERTICULAR SEPTOTOMY (STESD) BY DIVERTICULAR PERORAL ENDOSCOPIC MYOTOMY (D-POEM) FOR TREATMENT OF DIVERTICULA OF THE MIDDLE AND LOWER ESOPHAGUS. *Endoscopy* 2021; 53: S109.

**Aims** Esophageal diverticula are rare conditions, causing symptoms such as dysphagia and regurgitation. Large symptomatic diverticula are mostly managed by surgical myotomy and fundoplication. However, surgery can be challenging due to its extensive invasiveness. Minimal invasive endoscopic approaches such as diverticular peroral endoscopic myotomy (D-POEM) may be a less-invasive, transoral treatment option. We prospectively analysed the technical and clinical success after D-POEM.

**Methods** Between 2018 and 2020, six patients with symptomatic diverticulum of the middle or lower esophagus were included. Two of these patients had Achalasia (one pretreated with POEM), one patient with diffuse esophageal spasm as an underlying motility disorder. A symptomatic scoring system was used to prospectively evaluate the severity of diverticular symptoms. D-POEM was performed by creating a submucosal tunnel in the 6 o'clock position and starting about 3 to 5 cm above the diverticular bridge. After exposing the proper muscle layer of the diverticular bridge, complete myotomy was performed. After withdrawal of the endoscope from the tunnel, the mucosotomy was closed with standard hemoclips.

**Results** A total of 6 patients with esophageal diverticulum were included (mid-esophagus 1, epiphrenic 5). Mean size of the diverticulum was 4,1 cm [0.5 – 5.0 cm]. The overall technical success rate of D-POEM was 100% with a mean procedure time of 116.3 minutes [84 – 152 min]. No serious complications occurred. So far, 6-month follow-up data are available for 3 patients. Clinical improvement was achieved in 100% (3/3), with a significant decrease in mean symptom-score during a follow-up of 6 months.

**Conclusions** STESD appears to be an effective and safe transoral endoscopic treatment for middle and lower esophageal diverticula. Remaining follow-up data will be presented subsequently.

## eP39 EVALUATING CLINICAL FEATURES AND PH-IMPEDANCE DATA IN PEDIATRIC PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

**Author** Aksionchyk M<sup>1</sup>

**Institute** 1 Republican Scientific and Practical Centre of Pediatric Surgery, Minsk, Belarus

**DOI** 10.1055/s-0041-1724540

**Citation:** Aksionchyk M. eP39 EVALUATING CLINICAL FEATURES AND PH-IMPEDANCE DATA IN PEDIATRIC PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE. *Endoscopy* 2021; 53: S109.

**Aims** We aim to establish clinical features and pH-impedance data associated with reflux esophagitis (RE) and nonerosive reflux disease (NERD).

**Methods** We analyzed data of 86 patients age 1-17, who underwent 24-hour impedance-pH study and upper gastrointestinal endoscopy at RSPC for Pediatric Surgery between January 2018 to August 2020. Male - 56 (65%), female - 30 (35%).

Criteria for inclusion of patients in the study: abnormal esophageal reflux burden on the pH-impedance monitoring, endoscopy changes in the form of esophagitis, and gastroesophageal reflux disease (GERD) related symptoms. RE was diagnosed

► Tab.1

Characteristic	RE, n = 34 AM (95 %CI)	NERD, n = 52 AM (95 %CI)	Mann-Whitney test P-value
AET(%)	10.04 (7.81 to 12.28)	11.15 (8.92 to 13.38)	0.608
Number of RBM	78.91 (63.98 to 93.84)	69.46 (56.7 to 82.22)	0.342
Proximal events	30.76 (21.7 to 39.8)	26.39 (20.49 to 32.28)	0.672
Distal mean nocturnal baseline impedance (MNBI), in kOhm	1.90 (1.67 to 2.13)	2.21 (2.02 to 2.3)	0.0208

based on the Los Angeles classification system. Diagnosis of GERD was established based on the result of the MII/pH study and according to the recommendation of guidelines on pediatric GERD clinical practice (acid exposure time (AET) > 7 %, a total number of retrograde bolus movements (RBM) > 70). Patients were excluded based on the history of any abdominal surgery. Patients were divided into those with RE (n = 34): male/female 24 (71 %)/10 (29 %); and NERD (n = 52): male/female 32 (62 %)/20 (38 %). They were reported typical esophageal symptoms (heartburn, vomiting, belching, abdominal pain), atypical extra-esophageal symptoms (cough, burp, sour taste, recurrent bronchitis), and those with combined symptoms (both typical and atypical).

**Results** 86 pediatric patients fulfilled the inclusion criteria.

Table: pH-impedance data of RE patients. Data are presented as arithmetic mean (AM); CI: Confidence interval.

Results of clinical symptoms: in the group RE with typical symptoms: patients 14 (41 %), with atypical symptoms: 12 (35 %), with combined symptoms: 8 (24 %). In the group NERD with typical symptoms: patients 11 (21 %), with atypical symptoms: 16 (31 %), with combined symptoms: 25 (48 %).

**Conclusions** We found a significant difference only in one pH-impedance parameter - distal MNBI (p = 0.0208). Typical symptoms prevail in the group of patients with RE (41 %). Males mostly suffer from GERD in study groups: RE (71 %), NERD (62 %).

## eP40 TYPICAL GASTROESOPHAGEAL REFLUX DISEASE IN A GENERAL POPULATION: EPIDEMIOLOGICAL, CLINICAL AND ENDOSCOPIC PROFILE

**Authors** Harbi R<sup>1</sup>, Ben Abdesslem K<sup>1</sup>, Hammami A<sup>1</sup>, Dahmani W<sup>1</sup>, Ben Ameer W<sup>1</sup>, Elleuch N<sup>1</sup>, Ajmi S<sup>1</sup>, Brahem A<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksiaz M<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute** 1 University of Medicine Tunisia, Gastroenterology, Sousse, Tunisia  
DOI 10.1055/s-0041-1724541

**Citation:** Harbi R, Ben Abdesslem K, Hammami A et al. eP40 TYPICAL GASTROESOPHAGEAL REFLUX DISEASE IN A GENERAL POPULATION: EPIDEMIOLOGICAL, CLINICAL AND ENDOSCOPIC PROFILE. *Endoscopy* 2021; 53: S110.

**Aims** Gastroesophageal reflux disease (GERD) represents a public health problem because of its prevalence and its impact on the quality of life of patients. Esophagitis represents one of its main complications. The aim of the work is to describe the epidemiological, clinical and endoscopic lesions of gastroesophageal reflux disease.

**Methods** This is a retrospective descriptive study carried out between January 2016 and December 2017. It includes all patients suffering from GERD. Data collection was carried out from patients' medical records. The dependent variable was typical gastroesophageal reflux disease defined by one of the following 3 associations (heartburn-regurgitation, postural pyrosis syndrome, or regurgitation – postural syndrome).

**Results** Two hundred and thirty-seven (237) patients were enrolled with a median age of 52 years (11 - 85 years). There was a female predominance with 129 women and 108 men. The sex ratio M/F was 0.8. A typical symptomatology of GERD was present in 64 patients (27 %). Atypical digestive manifestations were dominated by: epigastralgia (22 %), belching (12 %) and hiccups (10 %). The extra-digestive symptoms were dominated by gingivitis (15 %) and precordial pain (12 %). Gastroscopy was normal in 70 % of cases (166 patients). Esophagitis was present in 45 % of patients with typical symptoms of GERD. The most common lesion observed was grade B esophagitis (46 %) according to the Los Angeles classification. 30.7 % of patients with atypical symptoms had esophagitis. Similarly, grade B was also the lesion most frequently described in 39 % of cases. A hiatus hernia complicated by esophagitis was noted in 35 % of our patients. Endobrachyoesophageal lesions were found in only 3 % of patients (n = 7). All of our patients had received treatment with a proton pump inhibitor.

**Conclusions** Across a typical or atypical symptomatology of GERD, esogastroduodenal fibroscopy is always indicated because of the frequency of peptic esophagitis and the risk of progression to endobrachyoesophagus and adenocarcinoma.

## eP41V ANTI-REFLUX ABLATION OF THE CARDIAC MUCOSA (ARMA) USING ARGON PLASMA COAGULATION

**Authors** Marcos Carrasco N<sup>1</sup>, Rodriguez de Santiago E<sup>1</sup>, Foruny Olcina JR<sup>1</sup>, Teruel Sanchez-Vegazo C<sup>1</sup>

**Institute** 1 Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS), CIBEREHD, Universidad de Alcalá, Department of Gastroenterology and Hepatology, Madrid, Spain

DOI 10.1055/s-0041-1724542

**Citation:** Marcos Carrasco N, Rodriguez de Santiago E, Foruny Olcina JR et al. eP41V ANTI-REFLUX ABLATION OF THE CARDIAC MUCOSA (ARMA) USING ARGON PLASMA COAGULATION. *Endoscopy* 2021; 53: S110.

A 23 year-old-man with PPI-dependent GERD. The cardiac mucosa was marked with argon catheter, from the Z line up to 3cm distally in a butterfly shape, sparing 1cm of healthy mucosa in the greater and lesser curvatures. After submucosal injection of a colloid, indigo carmine and adrenaline, the marked region is ablated (APC Forced coagulation, 100W, effect 3). One month later the patient presented dysphagia secondary to stenosis of the gastroesophageal junction, treated successfully with 13.5mm balloon dilatation. The patient has no GERD symptoms without PPI at month 5.

## eP42 ANTIREFLUX MUCOSECTOMY (ARMS) AND ANTIREFLUX MUCOSAL ABLATION (ARMA) FOR THE TREATMENT OF GASTROESOPHAGEAL REFLUX DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Rodriguez de Santiago E<sup>1</sup>, Teruel Sanchez-Vegazo C<sup>1</sup>, Marcos Carrasco N<sup>1</sup>, Shimamura Y<sup>2</sup>, Tanabe M<sup>2</sup>, Peñas B<sup>1</sup>, De Higes MJ<sup>1</sup>, Parejo S<sup>1</sup>, Álvarez Díaz N<sup>3</sup>, Kazuya S<sup>2</sup>, Vazquez-Sequeiros E<sup>1</sup>, Inoue H<sup>4</sup>, Albillos A<sup>1</sup>

**Institute** 1 Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS), CIBEREHD, Universidad de Alcalá, Department of Gastroenterology and Hepatology, Madrid, Spain; 2 Digestive Disease Center, Showa University Koto Toyosu Hospital, Tokyo, Japan; 3 Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS), CIBEREHD, Universidad de Alcalá, Biblioteca, Madrid, Spain; 4 Digestive Disease Center, Showa University Koto Toyosu Hospital, Digestive Disease Center, Tokyo, Japan

**Citation:** Rodriguez de Santiago E, Teruel Sanchez-Vegazo C, Marcos Carrasco N et al. eP42 ANTIREFLUX MUCOSECTOMY (ARMS) AND ANTIREFLUX MUCOSAL ABLATION (ARMA) FOR THE TREATMENT OF GASTROESOPHAGEAL REFLUX DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S110.

**Aims** 1. To systematically assess the clinical success, safety and 24-h pH-metry outcomes of ARMS and ARMA in patients with GERD. 2. To compare ARMS and ARMA.

**Methods** We performed a systematic search of Embase, PubMed and Cochrane Central from inception to November 2020. Overlapping reports and case reports were excluded. Our primary outcomes were clinical success (author's definition or n° of patients off PPI when a definition was not provided) and adverse events. We used a random-effects model to pool and compare data.

**Results** A total of 14 observational studies (12 ARMS, n=331; 2 ARMA, n=120) were included, 10 of them performed in patients with GERD defined as refractory to proton pump inhibitors (PPIs). Technical success was 100% (95% CI 100 - 100%). The short-term clinical success (first assessment within the first 6 months) and at 1 year were 78% (95% CI 70 - 85%, I<sup>2</sup> 55.5%) and 72% (95% CI 47 - 92%, I<sup>2</sup> 93%), respectively. The rate of adverse events was 12% (95% CI 9 - 16%). Pooled rates of dysphagia requiring dilation and clinically significant bleeding were 8% (95% CI 5 - 11%, I<sup>2</sup> 0%) and 0% (95% CI, 0 - 1%, I<sup>2</sup> 0%); respectively. Four cases of perforation were recorded, all in patients undergoing ARMS. There was a significant drop in acid exposure time within the first 6 months after the procedure (Mean difference 9.8%, 95% CI 1.9 - 17.7%, I<sup>2</sup> 84%). The proportion of patients off PPI at 1 year was 64% (95% CI 52 - 75%, I<sup>2</sup> 68.8%). In a subgroup analysis, clinical success was higher in patients treated with ARMA with a similar proportion of adverse events.

**Conclusions** This meta-analysis based on non-randomized studies supports that ARMA and ARMS are safe and effective for patients with GERD. Randomized studies with long-term follow up are warranted.

► Tab. 1

Technique	Clinical success ≤ 6 months (14 studies, n = 424 patients)	Clinical success 1 year (3 studies, n = 212)	Adverse events (13 studies, n = 433)
ARMS	76% (95% CI 69-82%)	61% (95% CI 52 - 70%)	11% (95% CI 8 - 16%)
ARMA	88% (95% CI 81-94%)	89% (95% CI 81 - 95%)	15% (95% CI 9 - 22%)
P value	0.01	< 0.01	0.58

### eP43 ANTI-REFLUX MUCOSAL ABLATION (ARMA) FOR GASTROESOPHAGEAL REFLUX DISEASE: A FEASIBILITY CASE SERIES

**Authors** Marcos Carrasco N<sup>1</sup>, Rodriguez de Santiago E<sup>1</sup>, Teruel Sanchez-Vegazo C<sup>1</sup>, Peñas García B<sup>1</sup>, Parejo Carbonell S<sup>1</sup>, De Higes Ruiz Mj<sup>1</sup>, Vazquez Sequeiros E<sup>1</sup>, Albillos A<sup>1</sup>

**Institute** 1 Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS), CIBEREHD, Universidad de Alcalá, Department of Gastroenterology and Hepatology, Madrid, Spain

DOI 10.1055/s-0041-1724544

**Citation:** Marcos Carrasco N, Rodriguez de Santiago E, Teruel Sanchez-Vegazo C et al. eP43 ANTI-REFLUX MUCOSAL ABLATION (ARMA) FOR

GASTROESOPHAGEAL REFLUX DISEASE: A FEASIBILITY CASE SERIES. *Endoscopy* 2021; 53: S111.

**Aims** Antireflux ablation of the cardiac mucosa (ARMA) is a new endoscopic technique for the gastroesophageal reflux disease (GERD). Our aims were to analyze the feasibility, effectiveness and safety of this technique in patients with PPI-dependent GERD.

**Methods** We conducted a prospective, single-center case series, from November 2019 to November 2020, of all consecutive patients with PPI-dependent GERD (>6 months on PPI and good symptomatic response to PPI) treated with ARMA. The procedure was performed in the left-supine position under propofol-based sedation. The cardiac mucosa (from the Z line up to 3 cm distally) was marked in a butterfly shape, sparing 1 cm of healthy mucosa in the greater and lesser curvatures. Voluven with indigo carmine (0.02%) and adrenaline (1: 100.000) was injected into the submucosa and the marked region ablated with a T-T Knife (Olympus©, Spray Coag 50 W, effect 2) or argon plasma coagulation (APC, Forced coagulation, 100W, effect 3). Technical success was defined as the complete ablation of the marked area. Clinical success was defined as a decrease >50% in GERD-HRQL score.

**Results** 4 procedures were successfully performed on 4 patients (3 with T-T knife, 1 APC). Baseline characteristics are shown in ► Tab. 1. Median procedure time was 59 minutes (range:51-90). Three patients (75%) achieved clinical success at 4-6 months and were able to discontinue PPI. Median GERD-HRQL decreased from 34 (range:8-36) to 6(range:0-23). Two adverse events were recorded: 1 delayed bleeding (moderate) and 1 patient with intermittent solid dysphagia that required 13.5 mm balloon dilatation.

**Conclusions** ARMA is feasible and may be effective in a selected population of patients with GERD. Dysphagia and bleeding are the most common adverse events.

► Tab. 1

Gender (M:F)	3:1
Median Age, years (range)	24.5 (23-34)
Median time of GERD, years (range)	6 (3-16)
Median baseline acid exposure time off PPI (range)	10.8% (5.3-18.6)

### eP45 PREDICTIVE FACTORS OF ESOPHAGEAL VARICES BAND LIGATION FAILURE

**Authors** Ayari M<sup>1</sup>, Zaimi Y<sup>1</sup>, Bel Hadj Mabrouk E<sup>1</sup>, Mensi A<sup>1</sup>, Ayadi S<sup>1</sup>, Said Y<sup>1</sup>, Mouelhi L<sup>1</sup>, Dabbeche R<sup>1</sup>

**Institute** 1 Charles Nicolle Hospital, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0041-1724545

**Citation:** Ayari M, Zaimi Y, Bel Hadj Mabrouk E et al. eP45 PREDICTIVE FACTORS OF ESOPHAGEAL VARICES BAND LIGATION FAILURE. *Endoscopy* 2021; 53: S111.

**Aims** Esophageal varices ligation (EVL) is the first line endoscopic treatment in acute bleeding, secondary and primary prophylaxis of variceal bleeding. Although effective in most case, failure of EVL can occur and expose to high morbidity and mortality. However risk factors of EVL failure are not well established. The aim of our study was to determine the prevalence and risk factors of EVL failure.

**Methods** We conducted a retrospective study including patients with portal hypertension undergoing EVL between 2012 and 2017. We excluded patients aged under 18 years and patients having been treated with sclerotherapy. EVL failure was defined as failure of hemostasis or failure achieving eradication.

**Results** In total, eighty-nine patients were included 44 female and 45 male. The mean age was 55,9 ± 14,17 years. Cirrhosis was the main cause of portal hypertension (94%). Indication of EVL was acute variceal bleeding and secondary prophylaxis in most of the patients (88.7%). Severity of cirrhosis was



classified as Child-Pugh A in 38.2% of cases, Child-Pugh B in 51% and Child-Pugh C in 10.8%. Failure of endoscopic treatment was observed in 10 patients (11.2%). In univariate analysis, EVL failure was associated with the decompensation of the underlying cirrhosis ( $p = 0.027$ ), Child-Pugh score ( $p = 0.03$ ), MELD score ( $p = 0.003$ ), MELD-Na score ( $p = 0.001$ ). MELD-Na score was the only independent factor in multivariate analysis ( $p = 0.004$ ; 95% IC [0,688-0,931]).

**Conclusions** In patients undergoing EVL, risk factors of failure should be taken into account in order to timely consider another therapeutic strategy. In our study high Meld-Na score was an independent factor of EVL failure.

### eP47 ENDOSCOPIC VARICEAL LIGATION AGAINST OR IN COMBINATION WITH VASOACTIVE DRUGS FOR ACUTE TREATMENT OF BLEEDING OESOPHAGEAL VARICES: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Roberts D<sup>1</sup>, Mwebe H<sup>2</sup>, Gurusamy K<sup>1</sup>

**Institute** 1 University College London, Division of Surgery & Interventional Science, London, United Kingdom; 2 Middlesex University, School of Health & Education, London, United Kingdom

DOI 10.1055/s-0041-1724546

**Citation:** Roberts D, Mwebe H, Gurusamy K. eP47 ENDOSCOPIC VARICEAL LIGATION AGAINST OR IN COMBINATION WITH VASOACTIVE DRUGS FOR ACUTE TREATMENT OF BLEEDING OESOPHAGEAL VARICES: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S112.

**Aims** Variceal haemorrhage is the commonest life-threatening complication of liver cirrhosis. Current guidelines recommend endoscopic variceal ligation (EVL) in combination with vasoactive drugs as first-line treatment; yet this is without a firm direct evidence-base. We aimed to assess the comparative benefits and harms of EVL against or in combination with vasoactive drugs (terlipressin, somatostatin, octreotide, vapreotide) for the treatment of acute oesophageal variceal bleeding in cirrhotic patients.

**Methods** We searched Cochrane Central Register of Controlled Trials (CENTRAL); MEDLINE; EMBASE; Science Citation Index Expanded; ClinicalTrials.gov and WHO International Clinical Trials Registry Platform. We included randomised controlled trials, regardless of language or publication status. We calculated relative risk (RR), rate ratio and mean differences with 95% confidence interval using both random-effects and fixed-effect meta-analysis models in Review Manager. We assessed quality of evidence using Cochrane risk of bias tool and GRADEpro GDT.

**Results** We identified 12 trials (1339 participants); follow-up ranged from 14-42 days. All studies were high risk of bias and overall quality of evidence was low-to-very low for most outcomes. Short-term mortality was significantly reduced with combination of endoscopic treatment plus vasoactive drug compared to either treatment alone. There was no evidence of significant difference in serious adverse events. Meta-analysis found evidence that failure of initial haemostasis was significantly reduced with EVL alone (RR = 0.14;  $p = 0.0004$ ); and with combination treatment (RR = 0.35;  $p = 0.002$ ); both compared to vasoactive drug alone. Very early rebleeding rate was significantly lower with combination treatment compared to both EVL alone (RR = 0.22;  $p = 0.002$ ); and vasoactive drug alone (RR = 0.08;  $p = 0.01$ ).

**Conclusions** Based on generally low-quality evidence, EVL seems to be superior to vasoactive drug treatment; and the combination of EVL plus vasoactive drug appears superior to either treatment alone in the acute treatment of bleeding oesophageal varices in cirrhotic patients. Therefore, our results support current guidelines. However, more high-quality RCTs are needed; and future research should include a network meta-analysis.

### eP48 THE EVOLUTION OF GASTROESOPHAGIAN VARICES IN PORTO-SINUSOIDAL VASCULAR DISEASE (PSVD)

**Authors** Mahmoudi M<sup>1</sup>, Borahma M<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

**Institute** 1 Mohammed V University Ibn Sina University Hospital, Gastroenterology, Medicine C, Rabat, Morocco

DOI 10.1055/s-0041-1724547

**Citation:** Mahmoudi M, Borahma M, Benelbarhdadi I et al. eP48 THE EVOLUTION OF GASTROESOPHAGIAN VARICES IN PORTO-SINUSOIDAL VASCULAR DISEASE (PSVD). *Endoscopy* 2021; 53: S112.

**Aims** Determine the evolution of oesogastric varices and the rate of bleeding recurrence in patients with portal hypertension (PT) by intrahepatic block in PSVD

**Methods** This is a single-center and descriptive study spanning 25 years (1994-May 2019), bringing together 114 patients followed for HTP on PSVD confirmed by an adequate liver biopsy puncture and respecting the international recommendations criteria for PSVD.

**Results** The mean age of the patients was  $42.27 \pm 13.62$  years. The F/M sex ratio at 1.97. In all patients an upper gastrointestinal endoscopy was performed. Esophageal varices (VO) were found in 68.4% of patients associated with red signs in 42.1% of cases. Esogastric varices (GOV) were found in 24.5% of our patients, while isolated gastric varices (IGV) were found in only 10.5% of cases. Only one patient had ectopic duodenal varices. Hypertensive gastropathy lesions were present in 46.5% of our patients. All patients underwent abdominal Doppler ultrasound showing portosystemic CVC in 78.4% of cases. VO ligation was performed in 36.3% until eradication in 99% with a median of 3 sessions [2,4], sclerotherapy was indicated in 11.4% ( $n = 13$ ) of our patients resulting in the eradication of OV in 90% of cases with a median of 4 sessions [1.5; 5]. 4.4% of our patients had emergency surgical bypass surgery. B-blockers were prescribed to 44.7% of our patients. From an evolutionary standpoint with a mean follow-up of 10 years, no bleeding recurrence was observed in 83% of cases, bleeding recurrence was observed in 10% and death in 7% of cases.

**Conclusions** Endoscopic PH lesions were the most common mode of presentation of MVPS. Treatment was mainly based on the ligation of esophageal varices associated with prevention by  $\beta$ -blockers with a very favorable outcome, namely eradication was obtained in 99% of patients with a rate of bleeding recurrence of 10%.

### eP49 BLEEDING DUE TO LIGATION ULCERS AFTER ESOPHAGEAL VARICES ENDOSCOPIC BAND LIGATION

**Authors** Gamelas V<sup>1</sup>, Saraiva R<sup>2</sup>, Simões G<sup>2</sup>, Silva M<sup>2</sup>, Saiote J<sup>2</sup>, Duarte P<sup>2</sup>, Calinas F<sup>2</sup>

**Institute** 1 Centro Hospitalar Universitário de Lisboa Central, Gastroenterology, Lisboa, Portugal; 2 Centro Hospitalar Universitário de Lisboa Central, Lisboa, Portugal

DOI 10.1055/s-0041-1724548

**Citation:** Gamelas V, Saraiva R, Simões G et al. eP49 BLEEDING DUE TO LIGATION ULCERS AFTER ESOPHAGEAL VARICES ENDOSCOPIC BAND LIGATION. *Endoscopy* 2021; 53: S112.

**Aims** Bleeding due to ligation ulcers (BLU) is a complication of endoscopic band ligation (EBL), performed in patients with portal hypertension (PHT). As it may be associated to a poor prognosis, it is relevant to discriminate which individuals are at higher risk of BLU. **Aim:** To evaluate the existence of predictors for BLU occurrence.

**Methods** This is a retrospective study of patients included in an EBL program for prevention of bleeding in a tertiary hospital in 2018-2019. Data was obtained from clinical record's analysis. BLU was considered when patients were evaluated in the hospital for upper gastrointestinal bleeding.

**Results** Seventy-six patients were included (80.3% men, median age 59 years); 65.8% were on secondary prevention of bleeding. The cause of PHT was

liver cirrhosis in 88.2% of patients, who had a Child-Pugh score (CPs) of A-50%, B- 40.6% and C-9.4%. Fifteen patients (19.7%) had hepatocellular carcinoma and 19 (25%) portal vein thrombosis. Patients underwent a median of 3 EBL sessions and were placed a median of 4 elastic bands per session [1-15].

BLU occurred in 5.3% of patients (n=4) and 1.5% of sessions. It occurred 14.5 days (median) after the previous EBL session and resulted in an hemoglobin drop of 1-2 g/dL. Compared to patients without this complication, it was found that they had higher platelet count (158,000 vs. 83,000,  $p=0.043$ ), with no differences in the remaining parameters evaluated: number of elastic bands placed ( $p=0.216$ ), type of prevention ( $p=0.138$ ), CPs ( $p=0.932$ ) or INR ( $p=0.747$ ). Among patients with BLU, two were hospitalized for vasopressor treatment; the third patient left the Emergency Department and the fourth was already hospitalized when BLU occurred and died due to acute-on-chronic liver failure.

**Conclusions** In our series, BLU was uncommon and was associated with a lower thrombocytopenia degree.

## eP50 PERFORMANCE OF NON-INVASIVE LIVER FUNCTION TESTS AND ABDOMINAL ULTRASOUND IN THE PREDICTION OF ESOPHAGEAL VARICES

**Authors** Trad N<sup>1</sup>, Ghanem M<sup>2</sup>, Ben slimen B<sup>2</sup>, Boughoula K<sup>2</sup>, Bizid S<sup>2</sup>, Ben abdallah H<sup>2</sup>, Bouali R<sup>2</sup>, Abdelli MN<sup>2</sup>

**Institute** 1 Military Hospital of Tunis, Gastroenterology, Raoued/Ariana, Tunisia; 2 Military Hospital of Tunis, Tunis, Tunisia  
**DOI** 10.1055/s-0041-1724549

**Citation:** Trad N, Ghanem M, Ben slimen B et al. eP50 PERFORMANCE OF NON-INVASIVE LIVER FUNCTION TESTS AND ABDOMINAL ULTRASOUND IN THE PREDICTION OF ESOPHAGEAL VARICES. *Endoscopy* 2021; 53: S113.

**Aims** Esophageal varices(EV) are a serious and life-threatening complication of portal hypertension(PHT). Their diagnosis is based on upper digestive endoscopy(UGIE) which is an invasive examination. Our objective was to evaluate the performance of thirteen non-invasive liver function tests and abdominal ultrasound (AU) in the EV prediction.

**Methods** We performed a retrospective analysis of data, between January 2010 and December 2019, of consecutive patients with chronic liver disease who underwent UGIE and UA within 3 months. Ultrasound signs of PTH were sought and the following scores were calculated: CHILD, MELD, MELD-Na, albumin-bilirubin grade(ALBI), platelet-albumin-bilirubin grade(PALBI), fibrosis-index based on 4factors(FIB-4), aspartate-aminotransferase-to-platelet ratio (APRI), Lok index, cirrhosis discriminant index(CDS), King's score, Goteborg-University Cirrhosis Index(GUCI), age to platelet index and aspartate-aminotransferase to alanine-aminotransferase ratio(AAR).

**Results** A total of 219 patients were collected with a mean age of  $61.2 \pm 13.06$  and a sex ratio of 1.64. Viral origin (65.2%) and non-alcoholic steatohepatitis (21%) were the predominant etiologies of chronic liver disease. One hundred and eighty-eight patients had EV (85.84%); EV grade1 in 11.17%; EV grade2 in 52.12% and EV grade3 in 36.71% of cases. Ultrasound signs of PTH were noted in 63.47% of cases. The presence of ultrasound signs of PHT( $p<0,001$ ), CHILD ( $p=0,001$ ), MELD ( $p=0,015$ ), ALBI ( $p=0,002$ ), FIB-4 ( $p=0,001$ ), CDS ( $p<0,001$ ) and age to platelet index ( $p<0,001$ ) were statistically correlated with the EV presence. CDS had the best area under the ROC curve (AUROC in the EV prediction of EV (AUROC = 0.765; [95%CI; 0,515-1,000]) followed by the presence of ultrasound signs of PHT (AUROC = 0,645; [95%CI; 0,329-0,961]), age to platelet index (AUROC = 0,616; [95%CI; 0,306-0,925]) and FIB-4 (AUROC = 0,602; [95% CI; 0,180-1,000]).

**Conclusions** In our series, abdominal ultrasound and CDS as a non-invasive liver function test seem to perform well in EV prediction. These tests don't replace the UGIE, but could provide a better selection of patients requiring this invasive exploration.

## eP51 PREDICTION OF VARICEAL RECURRENCE AFTER ERADICATION: COMPARISON OF TEN NON-INVASIVE TESTS PERFORMANCE

**Authors** Trad N<sup>1</sup>, Ghanem M<sup>1</sup>, Ben slimen B<sup>1</sup>, Boughoula K<sup>1</sup>, Sondes B<sup>1</sup>, Ben abdallah H<sup>1</sup>, Bouali R<sup>1</sup>, Abdelli MN<sup>1</sup>

**Institute** 1 Military Hospital of Tunis, Tunis, Tunisia  
**DOI** 10.1055/s-0041-1724550

**Citation:** Trad N, Ghanem M, Ben slimen B et al. eP51 PREDICTION OF VARICEAL RECURRENCE AFTER ERADICATION: COMPARISON OF TEN NON-INVASIVE TESTS PERFORMANCE. *Endoscopy* 2021; 53: S113.

**Aims** Acute variceal bleeding(AVB) is a life-threatening complication of portal hypertension. its management is essentially based on endoscopic variceal ligation(EVL). Nevertheless, even after eradication of esophageal varices(EV), the risk of recurrence and therefore re-bleeding persists. Our objective was to compare the performance of ten non-invasive liver function tests in the prediction of variceal-recurrence(VR) after EV eradication in cirrhotic patients.

**Methods** This is a retrospective study including, between January 2010 and December 2019, all cirrhotic patients who benefited from EV eradication and a follow-up of more than 6months. VR was defined as the development of AVB or an increase in EVs size to  $\geq$ grade1. The following scores were calculated at the first EVL: APRI, FIB-4, albumin-bilirubin grade(ALBI), platelet-albumin-bilirubin grade(PALBI), king's score, aspartate-aminotransferase to alanine-aminotransferase ratio(AAR), Lok index, Cirrhosis-Discriminant Score(CDS), Goteborg-University Cirrhosis Index(Guci) and age to platelet index.

**Results** A total of 219 patients were included. Seventy-nine patients benefited from EV eradication(36%). It was for primary prophylaxis in 8.86% and for secondary prophylaxis in 91.14%. The sex-ratio was 1.63 and the mean age was  $62.3 \pm 13.4$ . The main etiology of cirrhosis was viral infection(53,9%) followed by non-alcoholic-steatohepatitis(13.3%). VR occurred in 15.2% of cases. Among the calculated scores, FIB-4( $p=0,01$ ) and king's score( $p=0,04$ ) were statistically correlated with VR. In univariate analysis, in addition to FIB-4 and King's score, smoking( $p=0,03$ ) and excessive alcohol consumption( $p=0,04$ ) were also associated with VR. In multivariate analysis, FIB-4 was the only non-invasive score independent factor associated with VR. The area under the ROC curve of FIB-4 was 0.697 [95%CI; 0,557-0,83]. At the cut-off of 5,71, FIB-4 had a sensibility and specificity of 75% and 61%, respectively, in VR prediction after EV eradication.

**Conclusions** In our study, FIB-4 was the best non-invasive score in VR prediction after EV eradication. This score would be useful to identify vulnerable patients who would require close monitoring.

## eP52 ENDOSCOPIC DILATION OF BENIGN POST-ESOPHAGECTOMY ANASTOMOTIC STRICTURES: LONG TERM OUTCOMES AND RISK OF RECURRENCE

**Authors** Badir M<sup>1</sup>, Hag E<sup>2</sup>, Abu Asbeh Y<sup>2</sup>, Khamaysi I<sup>3,4</sup>

**Institute** 1 Technion, Haifa, Israel; 2 Rambam Medical Center, Haifa, Israel; 3 Rambam Medical Center, Gastroenterology, Haifa, Israel; 4 Technion-ITT, Faculty of Medicine, Haifa, Israel  
**DOI** 10.1055/s-0041-1724551

**Citation:** Badir M, Hag E, Abu Asbeh Y et al. eP52 ENDOSCOPIC DILATION OF BENIGN POST-ESOPHAGECTOMY ANASTOMOTIC STRICTURES: LONG TERM OUTCOMES AND RISK OF RECURRENCE. *Endoscopy* 2021; 53: S113.

**Aims** Esophageal anastomotic strictures often require repeat dilation to relieve dysphagia. Little is known about factors that affect their remediation. The purpose of this article is to retrospectively evaluate the long-term clinical results of endoscopic dilation in the treatment of benign anastomotic strictures after esophagectomy and to identify factors associated with stricture recurrence.

**Methods** A single-center retrospective analysis (using electronic records) was performed on patients who underwent endoscopic dilation for anastomotic esophageal stenosis. Long-term clinical effectiveness including technical and

clinical success and complications rate was assessed. Factors independently related to recurrence were evaluated.

**Results** Between January 2014 and December 2017, a total of 35 patients who had benign anastomotic stricture after esophagectomy underwent 182 endoscopic dilatation procedures. Of the 35 patients, 91 % had initial relief of dysphagia. The final clinical success rate was achieved in 24 patients (69%). The stricture recurred in 43 % of patients, and refractory strictures were identified in 10/35 (29%). Proximal anastomosis and the presence of anastomotic foreign bodies were found to be risk factors for refractory strictures. Complications rate was low (4%) and adverse events were mild. No major complications (perforations, severe bleeding) or treatment-related deaths occurred in this series.

**Conclusions** Fluoroscopically endoscopic Savary-Gilliard mechanical dilation is a well-standardized and a technically easy modality for the treatment of benign anastomotic stricture after esophagectomy. The procedure has an excellent technical success rate, a low complication rate and good clinical success rate. Yet, anastomotic strictures require frequent dilation sessions and carry a high recurrence rate. Many anastomotic strictures are refractory to endoscopic dilation.

### eP53 PREDICTING FACTORS OF INPATIENT OUTCOME AFTER NON-HEMORRHAGIC ENDOSCOPIC URGENCIES: THE EXPERIENCE OF A TERTIARY CENTER ON ESOPHAGEAL FOREIGN BODY OR CAUSTIC INJURIES

**Authors** Ribeiro T<sup>1,2</sup>, Mascarenhas Saraiva M<sup>1,2</sup>, Brozzi L<sup>3</sup>, Macedo G<sup>1,2,4</sup>

**Institute** 1 Centro Hospitalar Universitário de São João, Department of Gastroenterology, Porto, Portugal; 2 WGO Gastroenterology and Hepatology Training Center, Porto, Portugal; 3 G.B. Rossi University Hospital, Gastroenterology and Digestive Endoscopy Unit, Pancreas Institute, Department of Medicine, Verona, Italy; 4 Faculty of Medicine of the University of Porto, Porto, Portugal

DOI 10.1055/s-0041-1724552

**Citation:** Ribeiro T, Mascarenhas Saraiva M, Brozzi L et al. eP53 PREDICTING FACTORS OF INPATIENT OUTCOME AFTER NON-HEMORRHAGIC ENDOSCOPIC URGENCIES: THE EXPERIENCE OF A TERTIARY CENTER ON ESOPHAGEAL FOREIGN BODY OR CAUSTIC INJURIES. *Endoscopy* 2021; 53: S114.

**Aims** Ingestion of foreign bodies (FB) or caustic agents (CA) are frequent non-hemorrhagic causes of endoscopic urgencies, with potential for severe complications. We aimed to evaluate clinical, endoscopic and imaging predictors of inpatient outcomes in patients hospitalized after FB or CA ingestion.

**Methods** Retrospective study of patients admitted between 2000 and 2019 at a tertiary center after FB or CA ingestion. Clinical data, as well as lab values at admission, endoscopic and CT findings were evaluated and their correlation with variables of inpatient outcome, including length of stay (LS), was measured.

**Results** Sixty-six patients were included (44 FB and 22 CA), 64% were male. Mean age was 56 years. Median LS was 7 days, without differences between the groups ( $p = 0.07$ ). Admission C reactive protein (CRP) value correlated with LS in the FB group ( $p < 0.01$ ), but not in CA. Over 90% of patients underwent endoscopy. It was performed < 24 hours after presentation in 77%. Lesions were more common in upper and mid-esophagus in FB patients; pan-esophageal involvement occurred in 65% of CA patients. In FB patients, diagnosis of perforation on both endoscopy ( $p = 0.02$ ) and CT scan ( $p < 0.01$ ) was correlated with LS. Endoscopic Zargar classification of caustic lesions did not significantly correlate with LS in CA patients ( $p = 0.36$ ). However, moderate-to-severe lesions (Zargar  $\geq 2B$ ) correlated with need of intensive care treatment ( $p=0.02$ ), antibiotics ( $p=0.01$ ) and nosocomial pneumonia ( $p=0.03$ ). Severity of caustic lesions on CT scan did not correlate with LS.

**Conclusions** In patients admitted for FB, CRP values may help stratify the probability of complications. Also, diagnosis of perforation in these patients is associated with worse inpatient outcomes. In CA patients, Zargar classification may help to predict inpatient complications, but does not correlate with LS.

►Tab.1

	Length of stay Foreign body group	Length of stay Caustic agents group
C reactive protein, $\rho$ (p)	0.542 (< 0.01)	0.180 (0.435)
Zargar, $\rho$ (p)	n. a.	0.221 (0.362)
Perforation, $\rho$ (p)	0.628 (< 0.01)	0.406 (0.149)
CT severity, $\rho$ (p)	n. a.	0.360 (0.207)

### eP54 ADHERENCE TO RECOMMENDATIONS OF ANTICOAGULATION MANAGEMENT GUIDELINES IN ENDOSCOPY PROCEDURES AT TALLAGHT UNIVERSITY HOSPITAL (TUH)

**Authors** Tawfik A<sup>1</sup>, Ballester-Clau R<sup>1</sup>, Lindsey F<sup>1</sup>, Ryan B<sup>1</sup>

**Institute** 1 Tallaght University Hospital, Gastroenterology Department, Dublin, Ireland

DOI 10.1055/s-0041-1724553

**Citation:** Tawfik A, Ballester-Clau R, Lindsey F et al. eP54 ADHERENCE TO RECOMMENDATIONS OF ANTICOAGULATION MANAGEMENT GUIDELINES IN ENDOSCOPY PROCEDURES AT TALLAGHT UNIVERSITY HOSPITAL (TUH). *Endoscopy* 2021; 53: S114.

**Aims** To assess the adherence of Warfarin (OAC) and Direct Oral Anticoagulants (DOAC) management to guidelines before endoscopy procedures at Tallaght University Hospital.

**Methods** Retrospective analysis of endoscopic procedures in patients on OAC and DOAC, which were pre-assessed in Endoscopy Department at Tallaght University Hospital, from January 2018 to December 2019.

OAC/DOAC management were based on the underlying thrombotic risk condition and the initial endoscopy bleeding risk. The bleeding risk during endoscopy was assessed from the final report.

**Results** 475 endoscopic procedures were performed in 169 (35.6%) Female and 306 (64.4%) Male on OAC/DOAC, aged  $72 \pm 9.6$  (Mean $\pm$ SD). 21/475 (4.4%) of patients did not attend for endoscopy procedure despite the pre-assessment. 39/454 (8.6%) of patients required repeating the procedure due to recent OAC/DOAC use, in which 32/39 (82%) had low thromboembolism risk but 28/39 (71.8%) had a low initial endoscopic bleeding risk. OAC/DOAC was stopped in 223/409 (54.5%) of patients with low risk of TE and in 13/48 (27.1%) with high risk of TE ( $****p \leq 0.0001$ , Chi-squared test). OAC/DOAC was stopped in 146/331 (44.1%) of patients with low initial risk of bleeding event and in 89/117 (76.11%) with high initial risk of bleeding ( $****p \leq 0.0001$ , Chi-squared test).

**Conclusions** OAC/DOAC were held in the majority of patients with high initial endoscopy bleeding risk and continued in the majority of patients with high risk of thromboembolism. The pre-assessment at TUH in year 2018 and 2019 were beneficial and performed as per anticoagulation management pre-endoscopic procedures guidelines. The data of pre-assessment in 2020 were collected and analysis in process.

### eP55 QUALITY OF UPPER GASTROINTESTINAL BLEEDING RISK STRATIFICATION AND PRE-ENDOSCOPIC MANAGEMENT AT AN IRISH UNIVERSITY TEACHING HOSPITAL

**Authors** Elsidig M<sup>1</sup>, McKenna-Barry M<sup>1</sup>, Varley R<sup>1</sup>, Dunne C<sup>1</sup>, MacCarthy F<sup>1</sup>, McKiernan S<sup>1</sup>, Toole DO<sup>1</sup>, Kevans D<sup>1</sup>, Hartery K<sup>1</sup>

**Institute** 1 St James Hospital, Gastroenterology, Dublin, Ireland

DOI 10.1055/s-0041-1724554

**Citation:** Elsidig M, McKenna-Barry M, Varley R et al. eP55 QUALITY OF UPPER

GASTROINTESTINAL BLEEDING RISK STRATIFICATION AND PRE-ENDOSCOPIC MANAGEMENT AT AN IRISH UNIVERSITY TEACHING HOSPITAL. *Endoscopy* 2021; 53: S114.

**Aims** To audit of admission risk stratification and quality of pre-endoscopic management using the 2015 European Society of Gastrointestinal Endoscopy (ESGE) Upper GI Non-Variceal Bleeding guideline as a standard.

**Methods** Retrospective study analysing electronic endoscopy database from an academic teaching hospital over a 10-month period. All OGDs performed due to the indication of haematemesis, melaena and anaemia analysed. Patients were excluded if procedure was performed as an outpatient. Clinical data was obtained from Electronic Patient Records.

**Results** 107 upper GI endoscopies were identified. Glasgow Blatchford score (GBS) was documented on patient notes in 24 patients (22%). Retrospective calculation of GBS revealed 9 patients had a GBS of 0 or 1 (8%) with a cumulative inpatient stay of 64 days. No endoscopic intervention was performed in patients with a GBS of 0 or 1. 10 patients (9.3%) received blood transfusion prior to endoscopy despite a haemoglobin >9g/dL. The median time to endoscopy was 37 hours. 85.7% of patients with high risk GBS ( $\geq 12$ ) received early endoscopy (<24hours)

**Conclusions** GBS is a clinically useful and validated risk assessment score in correctly identifying very low-risk patients suitable for outpatient management and subsequent saving in hospital bed days. It is underutilised at point of admission/referral. Consideration of restrictive transfusion strategy should be given as it is associated with improved early survival rates.

## eP56V ENDOSCOPIC OTSC FOR ESOPHAGEAL STENT FIXATION IN THE TREATMENT OF ESOPHAGOMEDIASTINAL FISTULA

**Authors** Ventura S<sup>1</sup>, Carvalho A<sup>1</sup>, Pires F<sup>1</sup>, Cancela E<sup>1</sup>, Silva A<sup>1</sup>

**Institute** 1 Centro Hospitalar Tondela-Viseu, Viseu, Portugal

**DOI** 10.1055/s-0041-1724555

**Citation:** Ventura S, Carvalho A, Pires F et al. eP56V ENDOSCOPIC OTSC FOR ESOPHAGEAL STENT FIXATION IN THE TREATMENT OF ESOPHAGOMEDIASTINAL FISTULA. *Endoscopy* 2021; 53: S115.

Recently, the over-the-scope-clip (OTSC) system has allowed esophageal prostheses to be anchored, preventing their migration. We present the case of a 60-year-old patient with mediastinal neoplasia, submitted to excision of the lesion by postero-lateral thoracotomy. Postoperative period with difficult to wean from invasive mechanical ventilation; investigation showed an esophago-mediastinal fistula. Endoscopy was performed, observing a slit orifice with in a contralateral location to the tumor debulking area. A self-expanding metallic esophageal prosthesis was placed and fixed to the proximal top with Stentfix OTSC. The endoscopic and radiological control showed no evidence of complications.

## eP57 PREDICTIVE FACTORS OF ENDOSCOPIC DILATION FAILURE OF BENIGN ESOPHAGEAL STENOSIS

**Authors** Ben Farhat F<sup>1</sup>, Sabbah M<sup>1</sup>, Bellil N<sup>1</sup>, Trad D<sup>1</sup>, Bibani N<sup>1</sup>, Ouakaa A<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute** 1 Habib Thameur Hospital, Gastroenterology, Tunis, Tunisia

**DOI** 10.1055/s-0041-1724556

**Citation:** Ben Farhat F, Sabbah M, Bellil N et al. eP57 PREDICTIVE FACTORS OF ENDOSCOPIC DILATION FAILURE OF BENIGN ESOPHAGEAL STENOSIS. *Endoscopy* 2021; 53: S115.

**Aims** The aim of our study was to determine the limits of Endoscopic dilatation (ED) in esophageal Benign Stenosis (BS).

**Methods** This is a retrospective study including all patients who have had one or more sessions of ED of esophageal BS (by hydrostatic balloon or Savary candles) in our endoscopy unit over a period of 8 years [2011 - 2019]). Patients were divided into 3 groups: Group A patients with dysphagia regression, Group

B late recurrence (after one year) of dysphagia and Group C persistent dysphagia after a dilation series or early recurrence. ED failure was defined by Groupe C.

**Results** Forty-five patients were included in our study. The mean age was 55.31 years [18.97 years]. The sex ratio (M/F) was 0.8. The most common types of stenosis were peptic stenosis in 42% of cases, Plummer Vincent syndrome in 33% and caustic stenosis in 13% of cases. The average number of dilation sessions was 2.5 [1.6]. The mean interval between sessions was 3 weeks. No complications (perforation) were noted in our series. Twenty-eight patients responded well to the dilation series and remained asymptomatic after a 5-year follow-up (Group A). Nine patients had a late recurrence within the first 5 years (mean time to recurrence = 3 years) (Group B). Eight patients remained symptomatic of dysphagia after the first dilation series (Group C). Factors predictive of late recurrence were: number of initial dilation sessions  $\geq 3$  ( $P=0.003$ ), extent of stenosis >2cm ( $P=0.05$ ) and caustic stenosis ( $P=0.04$ ). Predictors of failure were: undernutrition ( $P=0.03$ ), tight stenosis (<6cm:  $P=0.001$ ), and location of stenosis in the upper 1/3 of the esophagus ( $P=0.05$ ).

**Conclusions** In our study, factors predictive of dilation failure were mainly related to the characteristics of the stenosis (location and tightness) and the impact on nutritional status. In this cases, another therapeutic alternative (corticosteroid injection, stents, surgery) should be considered.

## eP58 PLUMMER-VINSON SYNDROME: EPIDEMIOLOGICAL CHARACTERISTICS AND ENDOSCOPIC DILATION OUTCOMES

**Authors** Bradai S<sup>1</sup>, Mahmoudi M<sup>1</sup>, Khsiba A<sup>1</sup>, Medhioub M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Hamzaoui I<sup>1</sup>, Azouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724557

**Citation:** Bradai S, Mahmoudi M, Khsiba A et al. eP58 PLUMMER-VINSON SYNDROME: EPIDEMIOLOGICAL CHARACTERISTICS AND ENDOSCOPIC DILATION OUTCOMES. *Endoscopy* 2021; 53: S115.

**Aims** Plummer-Vincent syndrome (PVS) is a rare condition, defined by the association of dysphagia, iron deficiency anemia and a post-cricoid esophageal web. It is considered as a precancerous condition. Although correcting the anemia may improve these symptoms, endoscopic dilation of the esophageal web is sometimes necessary. The goal of our work is to study the clinical, endoscopic, therapeutic and evolutionary characteristics of this condition.

**Methods** We retrospectively collected charts of patients treated for a Plummer Vinson syndrome in our department from January 2006 until July 2020.

**Results** Our study included 9 patients: 8 women and one man. The average age was 51.4 years (37-60 years). All patients had progressively worsening high dysphagia. A clinical anemic syndrome was noted in 7 cases. Biologically, iron deficiency anemia was found in all patients. Upper endoscopy found an obstructive cervical esophageal web which was circumferential in 6 cases and non-circumferential in 3 cases. All patients underwent endoscopic dilation with Savary-Gilliard dilators, and iron supplementation. No severe complication has been noted. A duodenal biopsy was performed routinely in all patients allowing the diagnosis of associated celiac disease in two patients. Dysphagia, anemia, and cervical oesophageal diaphragm recurred in one patient requiring a second endoscopic dilation, 32 months after the first dilation. A squamous cell carcinoma was diagnosed 7 years after the first dilation in one patient who was lost to follow-up.

**Conclusions** Plummer Vinson syndrome is a rare condition, it usually affects women. Treatment is based on endoscopic dilation in conjunction with iron supplementation, with an excellent outcome in most symptomatic patients. Close endoscopic monitoring is necessary as the disease is a risk factor for subsequent malignancy. Therefore, it is important to educate patients about the importance of surveillance.



## eP59 SAFETY AND EFFICACY OF OESOPHAGEAL STENTS FOR OESOPHAGEAL ANASTOMOTIC STRICTURES; A SINGLE CENTER EXPERIENCE OVER 10 YEARS

**Authors** Bilal S<sup>1</sup>, Muhammad Saeed S<sup>1</sup>, Muhammad Siqqique Z<sup>1</sup>, Saqib M<sup>1</sup>, Shahid S<sup>1</sup>, Yusuf MA<sup>1</sup>

**Institute 1** Shaukat Khanum Memorial Cancer Hospital and Research Center, Gastroenterology, Lahore, Pakistan

**DOI** 10.1055/s-0041-1724558

**Citation:** Bilal S, Muhammad Saeed S, Muhammad Siqqique Z et al. eP59 SAFETY AND EFFICACY OF OESOPHAGEAL STENTS FOR OESOPHAGEAL ANASTOMOTIC STRICTURES; A SINGLE CENTER EXPERIENCE OVER 10 YEARS. *Endoscopy* 2021; 53: S116.

**Aims** Endoscopic bougie/balloon dilatation is considered as first line therapy for management of benign anastomotic oesophageal strictures post oesophagectomy, but repeated sessions are usually required. The management of recurrent/refractory anastomotic strictures is controversial. Repeated endoscopic sessions are additional physical and financial liability on patients, so early alternative methods, like early stent insertion needs investigation. The aim of this study is to evaluate efficacy and safety of stent insertion in post-oesophagectomy benign anastomotic strictures.

**Methods** A retrospective analysis was done for 28 patients, who underwent oesophageal stent placement for post-oesophagectomy anastomotic strictures at Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore, Pakistan. The data was collected for a period of ten years from January, 2009 to January, 2019.

**Results** The efficacy of oesophageal stents included both technical and clinic success. The technical success rate was 96.4%. The clinical success was measured in terms of dysphagia score at 4 weeks, 12 weeks and at 1 year post stenting. The clinical success was seen when dysphagia score at 4 weeks, 12 weeks and 1 year post stent were compared with baseline dysphagia score. The values were statistically significant as well. On comparing two groups, one who had refractory strictures (3 and more endoscopic procedure, prior to stent) with those who had non refractory strictures. Early stenting was associated with better dysphagia score at 4 weeks, 12 weeks and at 1 year, also overall less number of procedures and delayed recurrences as compared to refractory strictures.

Overall, serious complication rate was just 7.1%, as two patients had fistula formation and had aspiration pneumonia or perforation. However non serious complication like stridor and migration were seen in 39% patients.

**Conclusions** Stent insertion appears to be an effective and safe treatment for anastomotic strictures. They may be considered earlier in the course of treatment, before anastomotic strictures become refractory.

## eP60 ENDOSCOPIC MANAGEMENT OF BENIGN ESOPHAGEAL STRICTURES:

**Authors** Bradai S<sup>1</sup>, Khsiba A<sup>1</sup>, Mahmoudi M<sup>1</sup>, Nakhli A<sup>1</sup>, Medhioub M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azouz MM<sup>1</sup>

**Institute 1** Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724559

**Citation:** Bradai S, Khsiba A, Mahmoudi M et al. eP60 ENDOSCOPIC MANAGEMENT OF BENIGN ESOPHAGEAL STRICTURES. *Endoscopy* 2021; 53: S116.

**Aims** Benign esophageal strictures are a rare condition. Endoscopic dilation remains the gold standard. The purpose of our study is to report our experience in the management of benign esophageal strictures.

**Methods** This is a retrospective study including patients diagnosed with benign esophageal strictures in our gastroenterology between January 2014 and December 2019.

**Results** Forty four patients were included With a mean age of 51 years (12-88 years). Dysphagia was the main symptom. An upper endoscopy was performed in all patients showing an impassable stenosis in 59% of cases. The site of the stenosis was in the upper third of the esophagus in 16 patients (36,3%), in the middle third in 21 patients (47,7%) and in the lower third in 7 patients (16%). The stenosis was short in the majority of cases (77%). The etiology of the stenosis was peptic in 20 patients (45,4%), caustic in 4 patients (9%), Post-radiation stenosis in 1 patients (2%), post-anastomotic stenosis in 9 patients (20,4%) and Plummer-Vinson syndrome in 9 patients (20,4%). The dilation was performed by Savary-Gilliard dilators in 84% of cases, by hydrostatic balloon in 9% and by the endoscope in 7% of cases. No immediate complications were reported. A single session was sufficient in 25 patients (56.8%). More than two sessions were necessary in 22,7% of patients. The majority of patients reported clinical amelioration (59%). Recurrence was noted in 32% of cases. The mean time to recurrence was 22.56 months (2 to 60). Refractory stenosis was noted in 9% of cases. A metal oesophageal stent was performed in a patient with refractory stenosis.

**Conclusions** Peptic strictures are the most common causes of benign esophageal strictures. The instrumental dilation of benign esophageal strictures in adults is a simple, effective and safe method.

## eP61V BRONCHO-PULMONARY SQUAMOUS CELL CARCINOMA COMPLICATED BY AN ESOPHAGO-BRONCHIAL FISTULA

**Authors** Oustani M<sup>1</sup>, Zazour A<sup>1</sup>, El Mekkaoui A<sup>1</sup>, Khannoussi W<sup>1</sup>, Kharrasse G<sup>1</sup>, Ismaili MZ<sup>1</sup>

**Institute 1** Mohammed VI University Hospital, Mohammed the First University, Digestive Disease Research Laboratory, Gastroenterology, Oujda, Morocco

**DOI** 10.1055/s-0041-1724560

**Citation:** Oustani M, Zazour A, El Mekkaoui A et al. eP61V BRONCHO-PULMONARY SQUAMOUS CELL CARCINOMA COMPLICATED BY AN ESOPHAGO-BRONCHIAL FISTULA. *Endoscopy* 2021; 53: S116.

A 56-years-old man followed up for a broncho-pulmonary squamous cell carcinoma with a pancreatic metastasis, under chemotherapy. He was admitted for the treatment of an aphagia associated with false routes. Upper gastrointestinal endoscopy showed a large esophago-bronchial fistula at 30cm from the dental arches. The decision in a multidisciplinary meeting was to put a fully covered metallic stent as a palliative treatment.

## eP62V BLACK ESOPHAGUS

**Authors** Dogan S<sup>1</sup>, Omurca F<sup>1</sup>, Yagan N<sup>2</sup>, Purnak T<sup>3</sup>

**Institute 1** Kayseri City Hospital, Gastroenterology and Hepatology, Kayseri, Turkey; **2** Kayseri City Hospital, Internal Medicine, Kayseri, Turkey; **3** University of Texas Health Science Center, Gastroenterology and Hepatology, Houston, United States

**DOI** 10.1055/s-0041-1724561

**Citation:** Dogan S, Omurca F, Yagan N et al. eP62V BLACK ESOPHAGUS. *Endoscopy* 2021; 53: S116.

A 60-year-old woman presented to the emergency clinic because of cough and dyspnea. She reported black, tarry stool from the rectum during hospitalization. Upper endoscopy revealed that edematous, swollen mucosa in the esophagus with scattered ulcers and white exudates, as well as black discoloration. Multiple biopsies were obtained, pathologic evaluation was compatible with extensive necrosis. *Endoscopic findings* were also suggestive for acute esophageal necrosis. In other words, **black esophagus**, characterised by diffusely *swollen, edematous*, black esophageal mucosa with patchy ulcers and *confined* to the Z-line. Black esophagus is considered secondary to tissue hypoperfusion, ischemia and acid injury in most cases.

## eP63V FIXATION OF FULLY COVERED ESOPHAGEAL STENT WITH THE NEW OVER-THE-SCOPE CLIP (OTSC)

**Authors** Chálim Rebelo C<sup>1</sup>, Nunes N<sup>1</sup>, Flor de Lima M<sup>1</sup>, Moura DB<sup>1</sup>, Santos MP<sup>1</sup>, Costa Santos V<sup>1</sup>, Rego AC<sup>1</sup>, Pereira JR<sup>1</sup>, Paz N<sup>1</sup>, Duarte MA<sup>1</sup>  
**Institute** 1 Hospital do Divino Espírito Santo de Ponta Delgada, Gastroenterology Department, Ponta Delgada, Portugal  
**DOI** 10.1055/s-0041-1724562

**Citation:** Chálim Rebelo C, Nunes N, Flor de Lima M et al. eP63V FIXATION OF FULLY COVERED ESOPHAGEAL STENT WITH THE NEW OVER-THE-SCOPE CLIP (OTSC). *Endoscopy* 2021; 53: S117.

A 60 years-old-man, with Roux-en-Y reconstruction, presented with esophago-jejunal anastomosis stricture, refractory to balloon dilatation. Under fluoroscopic control and deep sedation, a guidewire was passed through the efferent loop. Then, a fully covered metal (WallFlex™ Esophageal 23x105mm, Boston Scientific) stent was deployed and fixed on the proximal end using the stentfix OTSC (Ovesco Endoscopy). There were no complications. The stent remains in place after 7 weeks. The design of stentfix OTSC grants a good adaptation to the gastrointestinal anatomy, without conditioning luminal obstruction. Use of stentfix OTSC seems to be associated with a decreased rate of fully covered metal stent migration.

## eP64 A NONINVASIVE PANEL FOR DIAGNOSIS OF ESOPHAGEAL VARICES IN PATIENTS WITH COMPENSATED CIRRHOSIS

**Authors** Tharwa E-S<sup>1</sup>, Abdel-Samiee M<sup>1</sup>, Gamil K<sup>1</sup>, El-Abd O<sup>2</sup>, Abd-Almonem E<sup>3</sup>  
**Institute** 1 National Liver Institute, Hepatology and Gastroenterology, Shebin El-Kom, Egypt; 2 National Liver Institute, Radiology, Shebin El-Kom, Egypt; 3 National Liver Institute, Clinical Pathology, Shebin El-Kom, Egypt  
**DOI** 10.1055/s-0041-1724563

**Citation:** Tharwa E-S, Abdel-Samiee M, Gamil K et al. eP64 A NONINVASIVE PANEL FOR DIAGNOSIS OF ESOPHAGEAL VARICES IN PATIENTS WITH COMPENSATED CIRRHOSIS. *Endoscopy* 2021; 53: S117.

**Aims** Varices are present in 30-40% of patients with compensated cirrhosis (Child-Pugh class A). Although screening endoscopy for esophageal varices (O.V.) is recommended to all patients with cirrhosis, this recommendation is not a result of evidence-based data. We studied the association of (platelet count/spleen diameter ratio, insulin resistance and splenoportal index) and the presence of O.V. in patients with compensated cirrhosis.

**Methods** 124 patients with compensated liver cirrhosis due to chronic HCV were studied. After clinical, laboratory ultrasound examinations, all patients underwent screening endoscopy and O.V. were reported as present or absent. According to presence or absence of varices; two groups were described: group I without varices and group II with varices.

**Results** Among 124 patients with mean age of (47.58±8.4), 2 groups were described: group I (30 patients) and group II (94 patients) with a male majority (20 patients in group I and 66 patients in group II). In group I and group II: the mean platelet count/spleen diameter ratio was (1022.6±73.36, 608.76±58.44) respectively, the mean insulin resistance value was (2.426±0.618, 3.081±0.474) respectively. The mean splenoportal index (SPI) value was (2.878±0.870, 6.349±0.514) respectively.

**Conclusions** Low platelet count/spleen ratio and high SPI are very useful non-invasive predictors for the presence of O.V. that could be used either separately or combined to decrease the number of upper GIT endoscopies needed in cirrhotic patients management. However, insulin resistance as a non-invasive predictor is still in need for further evaluation.

## eP65 ENDOSCOPIC AND HISTOLOGICAL FINDINGS IN PATIENTS WITH EPIGASTRIC PAIN

**Authors** Zaouga S<sup>1</sup>, Mrabet S<sup>1</sup>, Harbi R<sup>1</sup>, Akkari I<sup>1</sup>, Ben Jazia E<sup>1</sup>  
**Institute** 1 Farhat Hached Hospital, Gastroenterology, Sousse, Tunisia  
**DOI** 10.1055/s-0041-1724564

**Citation:** Zaouga S, Mrabet S, Harbi R et al. eP65 ENDOSCOPIC AND HISTOLOGICAL FINDINGS IN PATIENTS WITH EPIGASTRIC PAIN. *Endoscopy* 2021; 53: S117.

**Aims** Epigastric pain is one of the major common complaints in clinical medicine. Upper gastrointestinal endoscopy (UGE) is the most important diagnostic examination for patients with epigastralgia.

The aim of our study is to evaluate the prevalence of endoscopic findings in patients presenting with epigastric pain

**Methods** This is a retrospective study that collects all patients with epigastric pain who had undergone UGE between January 2018 and October 2020. The different endoscopic and histological findings were noted.

**Results** Out of 300 patients who were included in this study, 169 (56.3%) were women and 131 (43.7%) men. Their age ranged from 14 to 86, with a mean of 47 years.

All patients had epigastric pain. The other associated symptoms were: heartburn and regurgitation (25 patients, 8%), vomiting (14 patients, 4.1%) and anemia (6 patients, 4%). UGE was normal in 7% of patients. The different endoscopic abnormalities found were: Erythematous gastritis (n = 132, 45%), duodenal ulcer (n = 31, 10.3%), Esophagitis (n = 30, 10%), Erythematous bulbitis (n = 30, 10%), nodular gastritis (n = 23, 7.33%) and neoplasia (n = 2).

Biopsies were performed in 52% of patients with abnormal UGE. The anatomopathological study revealed chronic gastritis in 98.4% of patients with presence of *Helicobacter pylori* infection in 73.7% of cases. Gastritis was active in 80% of cases. Fundic atrophy was present in 18 patients (14%), seven patients had intestinal metaplasia (5%). Two cases of gastric adenocarcinoma were identified.

**Conclusions** The endoscopic diagnosis of epigastric pain in our study showed a predominance of erythematous gastritis with a high prevalence of *Helicobacter Pylori*.

## eP66 CHRONIC EPIGASTRIC PAIN SYNDROME WITH NORMAL UPPER ENDOSCOPY: SHOULD WE SYSTEMATICALLY BIOPSY?

**Authors** Ben Farhat F<sup>1</sup>, Bellil N<sup>2</sup>, Sabbah M<sup>2</sup>, Benzarti Z<sup>2</sup>, Khanchel F<sup>3</sup>, Trad D<sup>2</sup>, Gargouri D<sup>2</sup>  
**Institute** 1 Habib Thameur Hospital, Gastroenterology, Ariana, Tunisia; 2 Habib Thameur Hospital, Gastroenterology, Ariana, Tunisia; 3 Habib Thameur Hospital, Pathology, Ariana, Tunisia  
**DOI** 10.1055/s-0041-1724565

**Citation:** Ben Farhat F, Bellil N, Sabbah M et al. eP66 CHRONIC EPIGASTRIC PAIN SYNDROME WITH NORMAL UPPER ENDOSCOPY: SHOULD WE SYSTEMATICALLY BIOPSY?. *Endoscopy* 2021; 53: S117.

**Aims** The aim of our study was to determine the usefulness of gastric biopsies in case of normal upper endoscopy.

**Methods** This is a retrospective study gathering all the patients presenting with chronic epigastric pain who underwent upper endoscopy from January to June 2019. Clinical characteristics, *H. pylori* prevalence, endoscopic and histological findings were collected. The patients were allocated to two comparable groups: Group1 'Significant endoscopic lesion', Group2 'Normal upper endoscopy'. We considered as significant endoscopic lesion: oesophagitis, gastritis, duodenitis, peptic ulcer, upper gastrointestinal tract polyp/cancer. An analytical study was performed using the software SPSS 22.0 (significant p value if < 0.05).

**Results** Ninety-one patients were included in our study. The average age was 49.71 (±16.5) years, 43.9% were male. Significant endoscopic lesions were recorded in 76.9% (Group1). The most frequent findings were antral

gastropathy in 59.8%, fundic gastropathy in 21.7% and ulcers in 21.7%. No malignancies were noted. Twenty one patients had normal esophagogastroduodenoscopy (EGD)(23,07%) (Group 2). In Group 1, the prevalence of H. Pylori was 70%, gastric atrophy (GA) was found in 14,2% and intestinal metaplasia (IM) in 11,4%. In Group 2, H. pylori was found in 52,3%, GA was found in 33,3% and IM was noted in 19%.

In univariate analysis, only H. Pylori was associated with endoscopic lesions ( $p = 0,05$ ). The PPV of significant endoscopic lesions for H. pylori prevalence, GA and IM were 71,4%; 15,7% and 11,4% respectively. The NPV were 50%, 70% and 80%.

**Conclusions** In our study, the presence of significant endoscopic lesion was not a good predictor of pathological abnormalities. Even if the EGD is normal, biopsies are essential for endoscopic screening of pre-malignant gastric lesions (GA, IM).

## eP67 GRANULOMATOUS GASTRITIS: ENDOSCOPIC AND ETIOLOGICAL FEATURES

**Authors** Bradai S<sup>1</sup>, Khsiba A<sup>1</sup>, Medhioub M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Mahmoudi M<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724566

**Citation:** Bradai S, Khsiba A, Medhioub M et al. eP67 GRANULOMATOUS GASTRITIS: ENDOSCOPIC AND ETIOLOGICAL FEATURES. *Endoscopy* 2021; 53: S118.

**Aims** Granulomatous gastritis (GG) is defined by the presence in the chorion of epithelioid and sometimes gigantocellular granulomas. The aim of our study is to describe the clinical and endoscopic characteristics and to determine the etiologies of GG.

**Methods** This is a retrospective study of all cases of GG in our department between 2008 and 2018.

**Results** Ten patients were included. The mean age was 46.3 years and the sex ratio was 0.25 [M/F=2/8]. The indication for esophagogastroduodenal fibroscopy was dominated by epigastralgia in 8 cases (60%), chronic diarrhea in 1 case (10%) and vomiting in 1 case (10%). It was normal in 2 cases. Congestive gastropathy was noted in 4 cases and ulcerated in 4 cases. The location of the granulomas was antral in 4 cases, fundic in 1 case, and antrofundic in 5 cases. An associated chronic *Helicobacter pylori* (HP) gastritis was noted in 6 cases. A Tuberculosis assessment was carried out in all patients. Thoraco-abdominopelvic CT was performed in all patients to look for deep lymphadenopathy or suspicious thickening. The aetiologies retained were as follows: gastric tuberculosis in three patients (30%) due to the presence of caseous necrosis on histology, H. pylori was the cause retained for granulomatous gastritis in three cases (30%), The diagnosis was made following the disappearance of the granulomas after eradication of *Helicobacter Pylori*. The diagnosis of sarcoidosis was retained in one patient (10%). The diagnosis of Crohn's disease was made in two patients (20%) and the aetiological search was unsuccessful in one patient (10%).

**Conclusions** Granulomatous gastritis is a rare entity with a variety of etiologies. Their diagnosis is only obtained by combining endoscopic and morphological examinations with the results of clinical and biological investigations.

## eP68 EFFICACY OF THE CONCOMITANT QUADRUPLE THERAPY FOR THE ERADICATION OF HELICOBACTER PYLORI

**Authors** Harbi R<sup>1</sup>, Mrabet S<sup>1</sup>, Zaouga S<sup>1</sup>, Akkari I<sup>1</sup>, Ben Jazia E<sup>1</sup>

**Institute** 1 University of Medicine Tunisia, Gastroenterology, Sousse, Tunisia

**DOI** 10.1055/s-0041-1724567

**Citation:** Harbi R, Mrabet S, Zaouga S et al. eP68 EFFICACY OF THE CONCOMITANT QUADRUPLE THERAPY FOR THE ERADICATION OF HELICOBACTER PYLORI. *Endoscopy* 2021; 53: S118.

**Aims** *Helicobacter pylori* (H. pylori) infection is widespread throughout the world, with a prevalence ranging from 30 to 80%. The bacteria is resistant to gastric acidity due to its bacteriological characteristics. It is implicated in the occurrence of many potentially serious peptic diseases. Its eradication is a real therapeutic challenge.

The aim of our study was to evaluate the efficacy of concomitant quadruple therapy in the eradication of H. pylori in a Tunisian center.

**Methods** We conducted a descriptive retrospective study from 2018 to 2020. We included all patients who received first-line treatment for the eradication of H. pylori. The protocol used was concomitant quadruple therapy (proton pump inhibitor (PPI) + Amoxicillin + Metronidazole + Clarithromycin for 14 days). The patients had previously a proof of H. pylori infection by gastroscopy with histology.

**Results** We included 66 patients. The mean age was 48 years (17 years-80 years). The Sex Ratio M/F was 0.6. The mean body mass index (BMI) was 28.2. 12.1% of patients were smokers.

The diagnosis of H. pylori infection was made by gastroscopy + histology in all patients. All patients received a first line treatment with concomitant quadruple therapy.

Our patients adherence to treatment was 100%. The tolerance to treatment was in 71% of cases. The most frequently noted adverse effects were: dysgeusia in 31.8%, dizziness in 18.2% of cases, headache in 9% of cases and nausea with abdominal pain in 9% of cases. No cases of interruption of treatment were observed.

Eradication of HP was observed in 72.1% of cases. We used quadruple bismuth therapy as a second line in 6.2% of cases.

We did not find any correlation between treatment failure and the age, gender, and BMI.

**Conclusions** The success rate of the concomitant quadruple therapy for the eradication of H. pylori was 72.1% and this is probably due to the increasing resistance of H. Pylori to clarithromycin.

## eP69 SURVEILLANCE AND ENDOSCOPIC RECOGNITION OF GASTRIC INTESTINAL METAPLASIA AND ATROPHIC GASTRITIS: A RETROSPECTIVE COHORT STUDY IN TWO ACADEMIC CENTERS

**Authors** Honing J<sup>1</sup>, Dieninyte E<sup>2</sup>, O'Donovan M<sup>3</sup>, Brosens LA<sup>4</sup>, Fitzgerald RC<sup>5</sup>, Weusten BL<sup>1</sup>, di Pietro M<sup>5</sup>

**Institute** 1 University of Utrecht, University Medical Center Utrecht, Gastroenterology and Hepatology, Utrecht, Netherlands; 2 Vilnius University Faculty of Medicine, Vilnius, Lithuania; 3 University of Cambridge, Addenbrooke's University Hospital, Pathology, Cambridge, United Kingdom; 4 University of Utrecht, University Medical Center Utrecht, Pathology, Utrecht, Netherlands; 5 University of Cambridge, Addenbrooke's University Hospital, Gastroenterology, Cambridge, United Kingdom

**DOI** 10.1055/s-0041-1724568

**Citation:** Honing J, Dieninyte E, O'Donovan M et al. eP69 SURVEILLANCE AND ENDOSCOPIC RECOGNITION OF GASTRIC INTESTINAL METAPLASIA AND ATROPHIC GASTRITIS: A RETROSPECTIVE COHORT STUDY IN TWO ACADEMIC CENTERS. *Endoscopy* 2021; 53: S118.

**Aims** Endoscopic recognition of GIM and GA is challenging and little is known regarding adherence to surveillance guidelines in Western centers, particularly those with low incidence of gastric adenocarcinoma. The aim of this study was to evaluate endoscopic recognition and adequacy of surveillance for GIM and GA.

**Methods** We retrospectively analyzed patients diagnosed with GIM or GA in two academic centers in The Netherlands and UK between 2012 till 2019. Cases with GIM/GA diagnosis at index endoscopy were retrieved through systematic search of pathology databases using 'gastric' and 'intestinal metaplasia' or 'atrophy' keywords. Endoscopy reports were analyzed to ascertain endoscopic diagnoses. Adequacy of surveillance was assessed based on ESGE guidelines

published in 2012 at the index endoscopy. Criteria include: GA/GIM of the proximal stomach, any location of GA/GIM with a positive family history for gastric cancer or persistent *Helicobacter pylori* infection. Surveillance was also adequate if patients were discharged if pan-gastric sampling showed only GA/GIM of the distal stomach without risk factors or when age was above 75 years.

**Results** We included 319 patients with a median follow-up of 53 months. Patient characteristics are shown in ► **table 1**. Endoscopic recognition rates were 61,1% for GA and 17,4% for GIM. Surveillance was adequately carried out in 139 of 319 patients (43,6%) . During follow-up two patients (0,6%) developed gastric cancer after the detection of GIM, which gives an incidence of 0,14 per 100 patient years.

**Conclusions** Adequate surveillance of GIM and GA according to current guidelines was under 50% in two academic centers in countries with a low incidence of gastric cancer. The rate of endoscopic recognition of pre-cancerous lesions is low. The results of this study suggest that substantial improvement is required in adherence to guidelines for surveillance and endoscopic training in detection of pre-malignant conditions.

► **Tab. 1** Patient characteristics (N = 319)

Mean age (years)	66
Intestinal metaplasia	
▪ None	60 (19%)
▪ Proximal	54 (17%)
▪ Distal	101 (32%)
▪ Both locations	68 (21%)
▪ Present, location unknown	36 (11%)
Only gastric atrophy	60 (19%)
H.pylori present	48 (15%)
Family history of gastric cancer	
▪ Yes	14 (4%)
▪ No	156 (49%)
▪ Unknown	149 (47%)

## eP70 ENDOSCOPIC ULTRASOUND ACCURACY IN GASTRIC CANCER STAGING AFTER NEW STANDARD NEOADJUVANT CHEMOTHERAPY (FLOT) IN COMPARISON WITH POST SURGERY HISTOLOGY

**Authors** [de Nucci G<sup>1</sup>](#), [della Torre S<sup>2</sup>](#), [Picascia D<sup>1</sup>](#), [Imperatore N<sup>3</sup>](#), [Mandelli ED<sup>1</sup>](#), [d'Urbano C<sup>4</sup>](#), [di Nuovo F<sup>5</sup>](#), [Larghi A<sup>6</sup>](#), [Bollina R<sup>2</sup>](#), [Manes G<sup>7</sup>](#)  
**Institute** 1 Astt Rhodense, Gastroenterology and Endoscopy Unit, Garbagnate Milanese (MI), Italy; 2 Asst Rhodense, Oncology Unit, Rho, Italy; 3 AORN Cardarelli, Gastroenterology and Endoscopy Unit, Napoli, Italy; 4 ASST Rhodense, General Surgery Unit, Garbagnate Milanese (MI), Italy; 5 ASST Rhodense, Pathology Unit, Garbagnate Milanese (MI), Italy; 6 Policlinico Hospital A Gemelli, Digestive Endoscopy Unit, Rome, Italy; 7 ASST Rhodense, Gastroenterology and Endoscopy Unit, Garbagnate Milanese (MI), Italy  
**DOI** 10.1055/s-0041-1724569

**Citation:** de Nucci G, della Torre S, Picascia D et al. eP70 ENDOSCOPIC ULTRASOUND ACCURACY IN GASTRIC CANCER STAGING AFTER NEW STANDARD NEOADJUVANT CHEMOTHERAPY (FLOT) IN COMPARISON WITH POST SURGERY HISTOLOGY. *Endoscopy* 2021; 53: S119.

**Aims** Gastric cancer is one of the most common malignant tumors in the gastrointestinal tract. Neoadjuvant chemotherapy may be administered as a means of “downstaging” a locally advanced tumor prior to an attempt at curative resection. In particular, perioperative chemotherapy with FLOT improved overall survival in patients with gastric adenocarcinoma. The aim of the study was

to evaluate the EUS accuracy of T and N staging of all types of respect of with surgical specimen after FLOT regimen.

**Methods** We retrospectively analyzed 16 patients with diagnosis of AGC. All patient received preoperative TNM staging using EUS and CT within one month before starting chemotherapy. They underwent neoadjuvant chemotherapy (FLOT), a regimen that includes docetaxel, oxaliplatin and leucovorin with short-term infusional fluorouracil. Then patients were evaluated with another EUS examination, prior to surgery for tumor depth of invasion and lymph node involvement at our Digestive Endoscopy Unit. EUS TN stage was compared with histopathological TN stage as gold standard.

**Results** In our series, at EUS the downstaging of T alone occurred in 4 patients, N alone in 3 patients, and both descriptors only in one patient; at CT the downstaging occurred only in 6 patients. EUS and CT show only a moderate level of agreement about downstaging after chemotherapy.

**Conclusions** Our results showed that EUS in restaging after FLOT regimen has an adequate diagnostic accuracy on T (68.75%) and, in particular, on N (81.25%), if we compare EUS findings with surgery/histology, which still remains the diagnostic gold standard.

## eP71 GASTRIC HYPERPLASTIC POLYPS: A BENIGN ENTITY? ANALYSIS OF RECURRENCE AND NEOPLASTIC TRANSFORMATION IN A COHORT STUDY

**Authors** [João M<sup>1</sup>](#), [Alves S<sup>1</sup>](#), [Areia M<sup>1</sup>](#), [Taveira F<sup>1</sup>](#), [Brito D<sup>1</sup>](#), [Elvas L<sup>1</sup>](#), [Saraiva S<sup>1</sup>](#), [Cadime AT<sup>1</sup>](#)

**Institute** 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724570

**Citation:** João M, Alves S, Areia M et al. eP71 GASTRIC HYPERPLASTIC POLYPS: A BENIGN ENTITY? ANALYSIS OF RECURRENCE AND NEOPLASTIC TRANSFORMATION IN A COHORT STUDY. *Endoscopy* 2021; 53: S119.

**Aims** Hyperplastic polyps represent 30-93% of all gastric epithelial polyps. They are generally detected as innocuous incidental findings; however, they have risk of neoplastic transformation and recurrence. Frequency and risk factors for neoplastic transformation and recurrence are not well established and are fields of on-going interest. This study aims at evaluating the frequency and identifying risk factors for recurrence and neoplastic change of gastric hyperplastic polyps (GHP).

**Methods** Single centre retrospective cohort study including consecutive patients who underwent endoscopic resection of GHP from January 2009 to June 2020. Demographic, endoscopic and histopathologic data were retrieved from the electronic medical records.

**Results** A total of 195 patients were included, 56% women, median age 67 (35-87) years. The median size of GHP was 10 (3-50) mm, 62% (n = 120) were sessile, 61% (n = 119) located in the antrum and 36% (n = 71) had synchronous lesions. Recurrence after endoscopic resection was 23% (n = 26/113). In multivariate analysis, antrum location was the only risk factor for recurrence (OR 3.0; 95% CI: 1.1-8.1). The median time to recurrence was estimated at 7.5 (95% CI 6.7-8.4) years. Overall, 5.1% (n = 10) GHP showed neoplastic transformation, with low-grade dysplasia in 5, high-grade dysplasia in 4 and adenocarcinoma in 1. In multivariate analysis, size > 25 mm (OR: 84; 95% CI: 7.4-954), intestinal metaplasia (OR: 7.6; 95%CI: 1.0-55) and dysplasia (OR: 86; 95% CI: 10-741) in adjacent mucosa were associated with an increased risk of neoplastic transformation. Recurrence was not associated with neoplastic transformation (OR: 1.1; 95% CI: 0.2-5.9).

**Conclusions** Our results confirmed the risk of recurrence and neoplastic transformation of GHP. Antrum location was predictor of recurrence. Lesions > 25mm and intestinal metaplasia and dysplasia in adjacent mucosa were risk factors for neoplastic transformation. A more frequent endoscopic surveillance may be required in these subgroups of GHP.



## eP72V A HIDDEN TREASURE LEFT BEHIND

Authors [Mendo R<sup>1</sup>](#), [Barreiro P<sup>1</sup>](#), [Félix C<sup>1</sup>](#), [O'Neill C<sup>1</sup>](#), [Chagas C<sup>1</sup>](#)

Institute [1 Centro Hospitalar Lisboa Ocidental, Gastroenterology, Lisbon, Portugal](#)

DOI [10.1055/s-0041-1724571](#)

Citation: Mendo R, Barreiro P, Félix C et al. eP72V A HIDDEN TREASURE LEFT BEHIND. *Endoscopy* 2021; 53: S120.

A 73-year-old man with an early gastric cancer was proposed for treatment by endoscopic submucosal dissection (ESD). The procedure was interrupted due to perforation successfully treated with clips. The patient was then referred to our institution for a new attempt of ESD, where a buried clip absorbed in the submucosa and attached to the muscularis propria was found during submucosal dissection. To the best knowledge of the authors, this is the first described case of ESD where, during the dissection process, a fully absorbed clip in the submucosa was identified, forcing its removal to complete the resection of the lesion

## eP73 COMPARISON OF THE MICROBIOME DIVERSITY IN GASTRIC CANCER PATIENTS AND IN NON-CANCEROUS PATIENTS

Authors [Bang EJ<sup>1</sup>](#), [Keum B<sup>1</sup>](#), [Kim S<sup>1</sup>](#), [Lee KW<sup>1</sup>](#), [Jeon HJ<sup>1</sup>](#), [Lee JM<sup>1</sup>](#), [Choi HS<sup>1</sup>](#), [Kim ES<sup>1</sup>](#), [Jeen YT<sup>1</sup>](#), [Chun HJ<sup>1</sup>](#), [Lee HS<sup>1</sup>](#), [Kim CD<sup>1</sup>](#)

Institute [1 Korea University Anam Hospital, Gastroenterology, Seoul, Korea, Republic of](#)

DOI [10.1055/s-0041-1724572](#)

Citation: Bang EJ, Keum B, Kim S et al. eP73 COMPARISON OF THE MICROBIOME DIVERSITY IN GASTRIC CANCER PATIENTS AND IN NON-CANCEROUS PATIENTS. *Endoscopy* 2021; 53: S120.

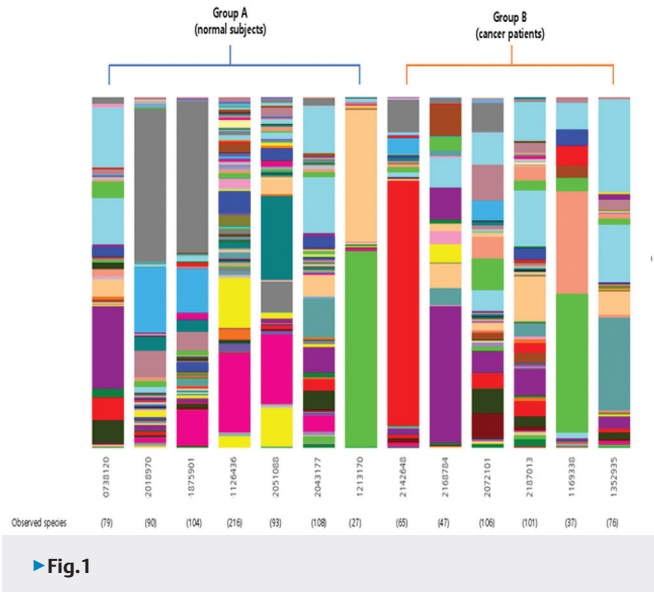
**Aims** Gastric cancer is the most common cancer in Korea. The most clearly known microbiologic factor is *Helicobacter pylori* and it is the leading cause of gastric cancer. According to studies, *H.pylori* is rarely detected in atrophic mucosa. This suggests that hypochlorhydric condition created by *H.pylori* may provide suitable environment for carcinogenesis. This raises a question about possibility that bacteria other than *H.pylori* could contribute to carcinogenesis of gastric cancer. Based on the hypothesis that certain microbiome may accelerate carcinogenesis, we intend to observe the differences in the distribution of microbiomes in gastric cancer patients and normal patients.

**Methods** Gastric mucosa collected from seven patients with advanced gastric cancer and six healthy individuals. Tissues were obtained from the cancer lesions in cancer group. In control group, biopsies were performed from antrum. DNA was extracted and 16s rRNA genes were amplified from the isolated DNA. They were analyzed by using terminal restriction fragment length polymorphism. Cloning and sequencing of 16S rRNA genes were performed.

**Results** Higher number of species was detected in control group, average of 102 species, compared to the cancer group, average of 72 species. The gastric cancer microbiome was characterized by reduced microbial diversity. Various bacterial species were found in both groups but distribution was quite different. *Fusobacteria* was more dominant in cancer group and *Rhododacterales* was found more prominent in control group. The gastric *H.pylori* was detected only in one patient from each group.

**Conclusions** More diverse gastric microbiome was observed in non-cancerous patients and composition of species was different between the two groups. These results suggest that microbial dysbiosis may contribute to gastric carcinogenesis, but it is not yet clear whether microbial transition accelerates carcinogenesis. Further studies should include analysis of spatial and temporal composition of gastric microbiome. Better understanding of microbial differences could verify the principles of carcinogenesis.

Characteristics of control group	No. of patients	Characteristics of cancer group	No. of patients
<b>Sex</b>		<b>Sex</b>	
Male	4	Male	3
Female	3	Female	3
Median age (year)	68	Median age (year)	65
<b>Biopsy location</b>		<b>Tumor location</b>	
Fundus	0	Fundus	0
Body	5	Body	2
Antrum	2	Antrum	4
<b>Pathology</b>		<b>Pathology</b>	
Intestinal metaplasia		Adenocarcinoma	6
Yes	5	<b>Histologic grade</b>	
No	2	Well	0
<b>PPI</b>		Moderately	1
Yes	4	Poorly	5
No	3	<b>PPI</b>	
<b>H.pylori</b>		Yes	5
Positive	2	No	1
Negative	5	<b>H.pylori</b>	
		Positive	1
		Negative	5



▶ Fig.1

## eP74 DETERMINATION OF THE OPTIMAL ELECTRICAL FIELD STRENGTH FOR INDUCING APOPTOSIS IN THE RAT STOMACH DURING IRREVERSIBLE ELECTROPORATION

Authors [Jeon HJ<sup>1</sup>](#), [Chun HJ<sup>1</sup>](#), [Keum B<sup>1</sup>](#), [Jeen YT<sup>1</sup>](#), [Kim ES<sup>1</sup>](#), [Choi HS<sup>1</sup>](#), [Lee JM<sup>1</sup>](#), [Lee KW<sup>1</sup>](#), [Kim SH<sup>1</sup>](#), [Bang EJ<sup>1</sup>](#), [Seo JW<sup>1</sup>](#), [Ha YW<sup>1</sup>](#), [Lee HS<sup>1</sup>](#)

Institute [1 Korea University College of Medicine, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Seoul, Korea, Republic of](#)

DOI [10.1055/s-0041-1724573](#)

Citation: Jeon HJ, Chun HJ, Keum B et al. eP74 DETERMINATION OF THE OPTIMAL ELECTRICAL FIELD STRENGTH FOR INDUCING APOPTOSIS IN THE RAT STOMACH DURING IRREVERSIBLE ELECTROPORATION. *Endoscopy* 2021; 53: S120.

**Aims** Irreversible electroporation (IRE) is a tissue ablation technique inducing apoptosis. However, the most efficient electrical field strength for IRE has not been determined. We aimed to investigate the optimal electrical field strength for IRE to promote gastric tissue apoptosis and identify post-IRE tissue recovery.

**Methods** Gastric tissues from 24 rats electroporated at 0, 100, 200, 300, 400, and 500 V (4 rats/group) were analyzed using terminal deoxynucleotidyl transferase-mediated deoxyuridine triphosphate (dUTP) nick end labeling (TUNEL) assay and caspase-3 immunohistochemical staining. The ratio of cleaved caspase-3-stained area to the total stained area was analyzed. Tissue

regeneration was analyzed by staining collagen fibers in 400 V-electroporated tissues at 12 h, 24 h, 3 d, 5 d, 7 d, and 14 d post-electroporation.

**Results** Electroporation at 100 V did not induce tissue damage, contrary to that at 200 V. The electroporated area increased significantly ( $P < 0.05$ ) after electroporation at 400 V and 500 V. TUNEL assay results confirmed the observed damage. The ratio of cleaved caspase-3-positive area to the total stained area was the highest (9.74) in the 200 V-electroporated mucosae. The number of collagen fibers increased significantly ( $P < 0.05$ ) at 3 days post-electroporation, peaked after 7 days, and decreased. Mucosal damage was almost restored within 2 weeks.

**Conclusions** The most efficient electrical field strength for inducing apoptosis was 1000 V/cm. The IRE-induced gastric injury healed in approximately 2 weeks.

## eP75 RISK FACTORS FOR METACHRONOUS LESIONS AFTER GASTRIC ENDOSCOPIC OR SURGICAL RESECTION - A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** [Ortigão R<sup>1</sup>](#), [Figueirôa G<sup>2</sup>](#), [Pimentel-Nunes P<sup>1,3</sup>](#), [Dinis-Ribeiro M<sup>1,3</sup>](#), [Libânio D<sup>1,3</sup>](#)

**Institute** 1 Oncology Institute of Porto, Gastroenterology Department, Porto, Portugal; 2 Centro Hospitalar Lisboa Ocidental, Surgery Department, Lisboa, Portugal; 3 Faculty of Medicine, University of Porto, MEDCIDS, Porto, Portugal  
**DOI** [10.1055/s-0041-1724574](#)

**Citation:** Ortigão R, Figueirôa G, Pimentel-Nunes P et al. eP75 RISK FACTORS FOR METACHRONOUS LESIONS AFTER GASTRIC ENDOSCOPIC OR SURGICAL RESECTION - A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S121.

**Aims** Metachronous gastric lesions (MGL) is a major concern after curative resection of early gastric cancer (EGC) by endoscopic resection (ER) or partial gastrectomy (PG), and endoscopic surveillance is needed after treatment. Risk factors for its development could help in individualizing surveillance schedule, but are controversial in literature. Our aim was to identify significant risk factors for MGL and compare the incidence of MGC after ER and PG.

**Methods** Three online databases (MEDLINE, ISI and Scopus) were searched up to May/2020. Data was analysed using random effects model and summarized as pooled odds ratio (OR) (for categorical variables) and mean differences (for continuous variables) with 95% confidence interval (CI). Heterogeneity was assessed by  $I^2$ .

**Results** Forty-seven studies were included (median follow-up of 37.0 months after ER and 77.5 months after PG). The pooled MGL rate after ER was 9.0% (95% CI 7.4-10.7%), significantly higher than after PG (1.4, 95% CI 0.6-2.6%), although there was significant heterogeneity across studies. Older age (mean difference 0.79 years, 95% CI 0.17-1.42), male sex (OR = 1.34, 95% CI 1.17-1.54), family history of gastric cancer (OR = 1.88, 95% CI 1.03-3.41), presence of synchronous lesions (OR = 1.48, 95% CI 1.21-1.80), intestinal metaplasia in corpus (OR = 3.15, 1.67-5.96) and low pepsinogen I/II ratio (mean difference -0.54, 95% CI -0.86, -0.22) were significantly associated with MGL after ER. Lesion characteristics as size, morphology, location and lesion histology were not significantly associated with MGL. Persistent *H. pylori* infection was also associated with a higher risk of MGL (OR 1.86, 95% CI 1.40-2.46). Regarding patients who underwent PG, male sex was the only significant risk factor for MGL (OR = 4.53, 95% CI 1.77-11.61).

**Conclusions** Patients submitted to PG require less intensive follow-up than those submitted to ER. Several risk factors were associated with MGL which can possibly guide the surveillance schedule according to the individual risk.

## eP76 PREVALENCE AND CHARACTERISTICS OF MISSED GASTRIC CANCER

**Authors** [Salvador I<sup>1,2</sup>](#), [Arau B<sup>1,2</sup>](#), [Andújar X<sup>1,2</sup>](#), [Ferrer C<sup>3</sup>](#), [Zabana Y<sup>1,2</sup>](#), [Ruiz L<sup>1,2</sup>](#), [Espínos J<sup>1,2</sup>](#), [Aceituno M<sup>1,2</sup>](#), [Fernández-Bañares F<sup>1,2</sup>](#), [Esteve M<sup>1,2</sup>](#), [Loras C<sup>1,2</sup>](#)

**Institute** 1 Hospital Universitari Mútua de Terrassa, Gastroenterology, Terrassa, Spain; 2 Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Madrid, Spain; 3 Hospital Universitari Mútua de Terrassa, Pathology, Terrassa, Spain  
**DOI** [10.1055/s-0041-1724575](#)

**Citation:** Salvador I, Arau B, Andújar X et al. eP76 PREVALENCE AND CHARACTERISTICS OF MISSED GASTRIC CANCER *Endoscopy* 2021; 53: S121.

**Aims** To analyze 1) The missed gastric cancer (MGC) rate in our area, 2) Baseline characteristics of the gastric cancer (GC) diagnosed and 3) Factors related to the MGC.

**Methods** Retrospective study of GC diagnosed in our area (secondary hospital with specialties) between October/2003-December/2018. Patients were identified through Pathology database. MGC was defined when a normal prior Esophagogastroduodenoscopy (EGD) was performed from 3 to 36 months before the diagnosis. Clinical and demographic characteristics of both non-MGC and MGC group were evaluated. The comparison of variables between the two groups was performed with the  $\chi^2$  test and multivariate analysis.

**Results** A total of 349 patients with GC were diagnosed being 6% (95% CI 3.97-9.01) MGC. In the MGC group, the localization was less frequent in body-antrum (52.4% vs. 75%;  $p = 0.04$ ), and more frequent in the anastomosis of previous gastric surgery (14.3% vs. 0.9%;  $p = 0.0002$ ). And this group also had less alarm symptoms (28.5% vs. 74%;  $p = 0.0001$ ). There were no differences in the age, sex, smokers, presence of *Helicobacter Pylori* infection and histological type of tumor. Regarding the features of the EGD, performing the procedure without sedation was the only factor related to the presence of MGC (19% vs. 45.7%;  $p = 0.03$ ). No differences were found regarding the type of endoscope (Olympus-GIF-Q145/165 vs. Olympus-GIF-Q190). In multivariate analysis, the only factors associated with MGC, was the sedation with OR 3.6 (95% CI 1.1-11.3) and anastomosis localization with OR 18.3 (95% CI 3.2-104.5).

**Conclusions** The MGC rate in our area was 6%. Performing EGD under sedation is associated with less possibility of MGC probably because it allows a more accurate visualization of the whole stomach, especially fundus, subcardial and anastomosis areas, where the GC is most often non-diagnosed.

## eP77V WELL DIFFERENTIATED GASTRIC ADENOCARCINOMA ON THE BASE OF PYLORIC GLAND ADENOMA

**Authors** [Kuvaev R<sup>1,2</sup>](#), [Kraynova E<sup>3</sup>](#), [Vieth M<sup>4</sup>](#), [Kashin S<sup>5</sup>](#), [Yao K<sup>6</sup>](#), [Yao T<sup>7</sup>](#)  
**Institute** 1 Yaroslavl Regional Cancer Hospital, Endoscopy, Yaroslavl, Russian Federation; 2 Pirogov Russian National Research Medical University, Gastroenterology, Moscow, Russian Federation; 3 Yaroslavl Regional Cancer Hospital, Pathology, Yaroslavl, Russian Federation; 4 Klinikum Bayreuth, Institute of Pathology, Bayreuth, Germany; 5 Yaroslavl Regional Cancer Hospital, Yaroslavl, Russian Federation; 6 Fukuoka University, Endoscopy, Fukuoka, Japan; 7 Juntendo University, Human Pathology, Tokyo, Japan  
**DOI** [10.1055/s-0041-1724576](#)

**Citation:** Kuvaev R, Kraynova E, Vieth M et al. eP77V WELL DIFFERENTIATED GASTRIC ADENOCARCINOMA ON THE BASE OF PYLORIC GLAND ADENOMA. *Endoscopy* 2021; 53: S121.

A 64-year-old woman was referred to our hospital for further examination of a gastric lesion. Esophagogastroduodenoscopy revealed a 30-mm elevated lesion of gastric body with whitish irregular surface. Magnifying narrow-band imaging indicated slightly irregular polygonal microvessels located in enlarged intervening part between crypts and surrounded by widened marginal crypt epithelium. According to VS classification, the lesion had irregular MV pattern plus irregular MS pattern with a demarcation line. *Helicobacter pylori* was not

detected. ESD was performed for *en bloc* resection of the lesion. Histological examination of the post-ESD specimen showed well differentiated adenocarcinoma on the base of pyloric gland adenoma.

## eP78 ANXIETY AND CANCEROPHOBIA IN PATIENTS WITH SMALL GASTROINTESTINAL SUBEPITHELIAL LESIONS AND TUMOURS: BASELINE RESULTS OF A PROSPECTIVE STUDY (QUALI-BANDING-SET)

**Authors** Bas-Cutrina F<sup>1</sup>, Loras C<sup>2</sup>, García-Ibáñez ME<sup>1</sup>, Andujar X<sup>2</sup>, Casellas-Grau A<sup>3</sup>, Gil FL<sup>3</sup>, Tebé C<sup>4</sup>, Galán M<sup>5</sup>, Fernández-Aranda F<sup>6</sup>, Videla S<sup>7</sup>, Gornals JB<sup>1</sup>

**Institute** 1 Endoscopy Unit, Digestive Diseases Department, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain; 2 Endoscopy Unit, Department of Digestive Diseases, Hospital Universitari Mútua de Terrassa, Terrassa, Barcelona, Catalonia, Spain; 3 Pysichoncology Unit, Institut Català d'Oncologia (ICO) L'Hospitalet, L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain; 4 Biostatistics Unit, Bellvitge Biomedical Research Institute (IDIBELL), L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain; 5 Medical Oncology Department, Institut Català d'Oncologia (ICO) L'Hospitalet, L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain; 6 Eating Disorders Unit, Department of Psychiatry, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain; 7 Clinical Research Support Unit, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain

DOI 10.1055/s-0041-1724577

**Citation:** Bas-Cutrina F, Loras C, García-Ibáñez ME et al. eP78 ANXIETY AND CANCEROPHOBIA IN PATIENTS WITH SMALL GASTROINTESTINAL SUBEPITHELIAL LESIONS AND TUMOURS: BASELINE RESULTS OF A PROSPECTIVE STUDY (QUALI-BANDING-SET). *Endoscopy* 2021; 53: S122.

**Aims** Small subepithelial lesions (SEL) or subepithelial tumours (SET) confirmed once characterized by endoscopic ultrasound (EUS), could generate anxiety and fear of cancer. Main aim: to assess the anxiety burden and *cancerphobia* in patients with small-sized SELs diagnosis or SETs under EUS surveillance. Secondary aims: to evaluate possible factors or patients' characteristics influencing on anxiety or fear of cancer degree.

**Methods** Observational prospective study. Consecutive inclusion of all patients with a small-sized SEL diagnosis (requiring an EUS performance), or patients with a previously catalogued SET under echoendoscopy surveillance. Evaluation of the anxiety-distress degree and fear of cancer using two specific designed and validated instruments-questionnaires: Hospital Anxiety and Depression Scale (HADS), anxiety and depression subscales [0-7 points=normal; 8-10=borderline; 11-21=pathologic], and global-distress scale [0-10 points=normal; 11-17=borderline; 18-42=pathologic]; and Cancer Worry Scale (CWS) [6-10 points=low; 11-15=moderate; 16-20=high; 21-24=very high]. ClinicalTrials.gov register: NCT04316000.

**Results** Two participating centres, 40 patients (inclusion period: September 2019 - February 2020). Mean HADS-anxiety: 7.2 (+/- 4.3) [= borderline anxiety]; HADS-distress: 11.4 (+/- 7.7) [= borderline distress]; CWS: 11.0 (+/- 4.1) [= moderate concern]. HADS-anxiety and CWS correlation coefficient: 0.75. Belief on probability of having GI cancer now: 20.7% (+/- 23.6); belief on probability of getting GI cancer in 10 years: 28.6% (+/- 24.3). Impact on quality of life: Yes 40% (16/40). Female sex (n-26) vs. male (n-14) subanalysis: HADS-anxiety 8.0 vs. 5.9; HADS-distress 12.7 vs. 9.0; CWS 11.5 vs. 9.9. Family history of cancer YES (n-29) vs. NO (n-11) subanalysis: HADS-anxiety 8.1 vs. 5.0; HADS-distress 12.7 vs. 8.0; CWS 11.7 vs. 9.1.

**Conclusions** Patients with SEL diagnosis or SET under EUS surveillance present a moderate anxiety-distress degree and a moderate concern about having cancer, partially affecting their quality of life. Family history of cancer and female gender are factors that can increase anxiety and *cancerphobia* degree.

► Tab.1

	HADS anxiety	HADS distress	Cancer Worry Scale (CWS)	YES Impact on quality of life
Female sex (n-26)	8.0	12.7	11.5	53.9 % (n-14)
Male sex (n-14)	5.9	9.0	9.9	14.3 % (n-2)
YES family history of cancer (n-29)	8.1	12.7	11.7	48.3 % (n-14)
NO family history of cancer (n-11)	5.0	8.0	9.1	18.2 % (n-2)

## eP79 ENDOSCOPIC RESECTION OF TYPE I GASTRIC NEUROENDOCRINE NEOPLASIA: A SYSTEMATIC REVIEW

**Authors** Esposito G<sup>1</sup>, Panzuto F<sup>2</sup>, Magi L<sup>3</sup>, Rinzi M<sup>2</sup>, Annibale B<sup>1,2</sup>

**Institute** 1 Sapienza University of Rome, Sant'Andrea Hospital, Department of Medical-Surgical Sciences and Translational Medicine, Rome, Italy; 2 Sapienza University of Rome, Digestive Disease Unit, Sant'Andrea Hospital, ENETS Center of Excellence, Rome, Italy; 3 Sapienza University of Rome, Department of Translational and Precision Medicine, Rome, Italy

DOI 10.1055/s-0041-1724578

**Citation:** Esposito G, Panzuto F, Magi L et al. eP79 ENDOSCOPIC RESECTION OF TYPE I GASTRIC NEUROENDOCRINE NEOPLASIA: A SYSTEMATIC REVIEW. *Endoscopy* 2021; 53: S122.

**Aims** Although relatively uncommon, the incidence of type I gastric neuroendocrine neoplasia (NEN) has been rising over time. Since they are considered indolent neoplasms, with low metastatic potential, endoscopic resection is the treatment of choice. However, correct endoscopic management is not well established. This systematic review aimed to investigate which is the best endoscopic technique to achieve complete resection in type I gastric NEN.

**Methods** Medline through Pubmed and Scopus databases was conducted on August 2020 and a systematic review of the current literature was conducted in accordance with the PRISMA statement.

**Results** Above the 675 studies retrieved, 6 were finally considered eligible. Main endoscopic resection techniques described were mucosal resection (EMR) and submucosal dissection (ESD), one reported resection by snare or forceps. Both techniques showed similar results for complete resection (97.4% vs 98.7%) and *en bloc* resection (92.3% vs 96.3%) with ESD and EMR, respectively. Even if ESD was associated with a higher rate of complications than EMR (11.7% vs 5.4%) this difference was not statistically significant (p=0.17). Either bleeding or perforation occurred with both techniques. Only one study reported a 100% rate of complete resection with snare and/or forceps without complications, but the recurrence rate was 66.3%. Conversely, EMR and ESD showed a lower rate of recurrence, 18.2% and 11.5% respectively, with a significant difference compared to snare and/or forceps resection (p < 0,001).

**Conclusions** To date, there are no sufficient data to provide superiority of a given endoscopic technique compared with others. Either ESD or EMR seems to be effective with a relatively low rate of recurrence.

## eP80 ENDOSCOPIC INTERVENTIONS IN PATIENTS WITH SUBMUCOSAL TUMORS IN THE STOMACH

**Authors** Khvorova I<sup>1</sup>, Shishin K<sup>1</sup>, Nedoluzhko I<sup>1</sup>, Kurushkina N<sup>1</sup>, Shumkina L<sup>1</sup>

**Institute 1** Moscow Clinical Scientific Center, Operative Endoscopy, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724579

**Citation:** Khvorova I, Shishin K, Nedoluzhko I et al. eP80 ENDOSCOPIC INTERVENTIONS IN PATIENTS WITH SUBMUCOSAL TUMORS IN THE STOMACH. *Endoscopy* 2021; 53: S123.

**Aims** Currently, a laparoscopic operation is the standard treatment option in patients with submucosal tumors of the stomach. However, endoscopic technologies find their application in the treatment of submucosal gastric lesions due to the improvement of an early diagnosis.

The aim is to show the potential of endoscopic intraluminal operations in patients with submucosal tumors in the stomach.

**Methods** 57 patients with gastric submucosal lesions were operated on in Moscow Clinical Scientific Centre from 2013 until 2020. There was a significant predominance of females among patients. The average age was 59.6 years. The average size of the tumor was 2.6 cm. The negative endosonographic changes such as an increase of tumor size or a change of its characteristics and clinical manifestations as well (bleeding, dysphagia, and stomach pain) were the indication for an operation. The interventions included 25 endoscopic dissections in the submucosal layer and 32 endoscopic tunnel dissections.

**Results** All the surgical interventions were performed under endotracheal anesthesia. The average operation time was 120 minutes. No postoperative complications were encountered. According to the postoperative histological and immunohistochemical reports, 25 neoplasms appeared to be gastrointestinal stromal tumours, 10 leiomyomas, 7 removed tumours were lipomas and 12 fibroinflammatory polyps. In one case the lesion turned out to be an aberrant pancreas and in another – hemangioma. There were no relapses of diseases during the entire follow-up period.

**Conclusions** The endoscopic intraluminal operations are minimally invasive, radical, and safe interventions. Minimum access significantly reduces the number of postoperative complications and a recovery period.

## eP81V SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION (STER) WITH ENDOSCOPIC SUTURE FOR THE TREATMENT OF A GASTRIC SUBMUCOSAL LESION

**Authors** Iborra I<sup>1</sup>, Colan-Hernandez J<sup>1</sup>, Aguilar A<sup>1</sup>, Puig M<sup>1</sup>, Marín I<sup>1</sup>, Caballero N<sup>1</sup>, González González L<sup>1</sup>, Cañete F<sup>1</sup>, Calafat M<sup>1</sup>,

Moreno de Vega V<sup>1</sup>, Uchima H<sup>1</sup>

**Institute 1** Hospital Universitari Germans Trias i Pujol, Servicio Aparato Digestivo, Badalona, Spain

**DOI** 10.1055/s-0041-1724580

**Citation:** Iborra I, Colan-Hernandez J, Aguilar A et al. eP81V SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION (STER) WITH ENDOSCOPIC SUTURE FOR THE TREATMENT OF A GASTRIC SUBMUCOSAL LESION. *Endoscopy* 2021; 53: S123.

**Background and clinical case** Male patient with a 20 x11 mm gastric antral submucosal lesion not defined by EUS-FNA with immunohistochemistry Considering a GIST as a possible diagnosis endoscopic resection was decided.

**Endoscopic findings** STER was performed allowing dissection of the lesion and snare extraction. Given the mucosotomy done, we decided to close the gap using endoscopic suturing technique (Apollo) after the procedure. Histological examination showed a heterotopic pancreas; hence the patient needs no subsequent following.

**Conclusions** STER may be an option for endoscopic resection of submucosal lesions. Mucosotomy closure with endoscopic suturing is an option in this technique.

## eP82V CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION OF A (T1A) GASTRIC CANCER USING POCKET TECHNIQUE FOLLOWED BY SUTURING CLOSURE OF THE MUCOSAL DEFECT

**Author** Lajin M<sup>1</sup>

**Institute 1** SHARP HealthCare San Diego, La Mesa, United States

**DOI** 10.1055/s-0041-1724581

**Citation:** Lajin M. eP82V CURATIVE ENDOSCOPIC SUBMUCOSAL DISSECTION OF A (T1A) GASTRIC CANCER USING POCKET TECHNIQUE FOLLOWED BY SUTURING CLOSURE OF THE MUCOSAL DEFECT. *Endoscopy* 2021; 53: S123.

A 78-year-old female presented with abdominal pain. An EGD revealed a 1.8 cm depressed lesion in the gastric antrum. Biopsies identified high-grade dysplasia. Submucosal injection followed by mucosal incision was performed proximal to the lesion. The tunnel was entered. Submucosal dissection was carried out creating a pocket underneath the lesion. The mucosal incision was then completed. The lesion was retrieved.

The ESD defect was closed using endoscopic suturing.

The pathology was well-differentiated adenocarcinoma, invading into but not through the muscularis mucosa with free margins and no lymphovascular invasion (T1a).

Her last endoscopy 18 months later shows no malignancy or dysplasia.

## eP83 A COMPARISON OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD), LAPAROSCOPIC ENDOSCOPIC COOPERATIVE SURGERY (LECS) AND OPEN SURGERY FOR EARLY GASTRIC CANCER (EGC): A RETROSPECTIVE STUDY

**Authors** Kashin S<sup>1</sup>, Kraynova E<sup>1</sup>, Merkulova A<sup>1</sup>, Dylenok A<sup>1</sup>, Tarasova E<sup>1</sup>

**Institute 1** Yaroslavl Regional Cancer Hospital, Endoscopy Department, Yaroslavl, Russian Federation

**DOI** 10.1055/s-0041-1724582

**Citation:** Kashin S, Kraynova E, Merkulova A et al. eP83 A COMPARISON OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD), LAPAROSCOPIC ENDOSCOPIC COOPERATIVE SURGERY (LECS) AND OPEN SURGERY FOR EARLY GASTRIC CANCER (EGC): A RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S123.

**Aims** To compare perioperative outcomes and oncological clearance of ESD versus LECS and open gastrectomy (GE) for treatment of EGC.

**Methods** 248 patients with EGC (T1N0M0) were treated from 2006 to 2020 at Regional Cancer Hospital. 140 underwent ESD, 94 - GE and 14 received LECS with sentinel lymph node navigation (SLNN). There was no difference in age, gender or comorbidity between ESD/GE groups, but with more comorbidities in LECS group. Clinical outcomes: baseline demographics, pathology, postoperative complications, hospital stay and overall survival rate were compared.

**Results** GE group patients sustained longer operative time [205+/-0.01 min] compared with ESD [130.65+/-0.99 min; p < 0.001] and similar time as in LECS group [204+/-0.8 min; p > 0.01]. Median hospital stay was longer in GE than in LECS or ESD groups [18.5 vs 12.3 vs 5.0 days; p < 0.001]. We didn't find lymph node metastasis after LECS with SLNN. There was no perioperative mortality in ESD and LECS. Complication rate was significantly higher in GE group, especially 3-5 stages of Clavien-Dindo classification (3 stage – 8%, 5 stage – 4%), than in ESD group (5 perforation, 7 delayed bleeding, treated endoscopically). Metachronous cancer rate was higher in ESD (10 cases – 7,1%) than in GE group (0 cases). Recurrence rate was 3,5% after ESD (2 cases were treated by surgery, 3 by endoscopic resection) and 0 after surgery. The overall 5-year survival rates (for patients treated until 2015) were 95% for ESD and 82% for GE group (P < 0.001).

**Conclusions** GE is still performed more frequently in Russia than ESD even for patients with EGC. In our study ESD achieved similar oncological outcomes compared with radical GE for treatment of EGC. Patients receiving ESD had better perioperative outcomes in terms of operative time, complication rate, hospital stay and survival. LECS with SLNN is a useful alternative to GE for selected patients.



## eP84 GASTRIC ESD: PRELIMINARY EXPERIENCE IN A TERTIARY CENTER IN QUEBEC

**Authors** Maillat D<sup>1</sup>, Désilets E<sup>2</sup>, Manière T<sup>2</sup>

**Institute** 1 Université de Sherbrooke, Internal Medicine, Sherbrooke, Canada; 2 Hôpital Charles-Le Moyne, Gastroenterology, Greenfield Park, Canada

**DOI** 10.1055/s-0041-1724583

**Citation:** Maillat D, Désilets E, Manière T. eP84 GASTRIC ESD: PRELIMINARY EXPERIENCE IN A TERTIARY CENTER IN QUEBEC. *Endoscopy* 2021; 53: S124.

**Aims** Endoscopic submucosal dissection (ESD) is a common treatment for early gastric cancer (EGC). Western countries have less experience with this challenging technique. The goal of this study is to evaluate the effectiveness of ESD as a preliminary experience.

**Methods** This is an uncentered retrospective study of all consecutive gastric ESD for adenomas or EGC from 07/2017 to 08/2020. The primary endpoints were en bloc and R0 resection rates.

**Results** Nineteen patients (mean age 74.2 (54-88)) and 23 lesions were included. Mean diameter was 25 mm (10-90). Treatment was previously performed in 7 cases (30.4%), by ESD (5) or EMR (2). The procedure, performed under general anaesthesia, lasted on average 148 minutes (45-412). En bloc resections were performed in 16 cases (69.6%); 5 cases (21.7%) were converted to P-EMR. Failed resection because of deep invasion or perforation occurred in 2 cases (8.7%). Pathologic examination demonstrated 6 adenomas and 15 adenocarcinomas: intramucosal (8) and submucosal (7). R0 and curative resection rates were 43.5% and 39.1% respectively. The procedure related complication rate was 30.4% consisting of 5 perforations and 2 delayed bleeding: all were managed endoscopically. Five patients (21.7%) underwent gastrectomy for non-curative resection (4) or failed resection (1), however, 3 had no residual disease on final pathology. One patient went to palliative care because he was unfit for surgery. Follow-up endoscopy was completed in all 17 patients who underwent endoscopic resection (mean 10 months (2-24)). Recurrence occurred in 23.5% (4/17); all were successfully treated by another ESD.

**Conclusions** In our preliminary experience, the rate of en bloc and R0 resection were 70% and 44%. Compared to other studies, these low en bloc and curative resection rates may be explained by technically difficult lesions during the learning curve and might improve with experience. Nevertheless, surgery has been avoided in 13/19 patients (68%) with endoscopic intervention.

## eP85 CLINICAL USEFULNESS OF COMBINATION THERAPY USING POLIDOCANOL INJECTION AND ARGON PLASMA COAGULATION FOR GASTRIC ANTRAL VASCULAR ECTASIA

**Authors** Tamari H<sup>1</sup>, Oka S<sup>2</sup>, Tanaka S<sup>1</sup>, Yorita N<sup>2</sup>, Tanaka H<sup>2</sup>, Yamashita K<sup>1</sup>, Ninomiya Y<sup>1</sup>, Kotachi T<sup>1</sup>, Boda T<sup>1</sup>, Kitadai Y<sup>3</sup>, Chayama K<sup>2</sup>

**Institute** 1 Hiroshima University, Department of Endoscopy, Hiroshima, Japan; 2 Hiroshima University, Department of Gastroenterology and Metabolism, Hiroshima, Japan; 3 Prefectural University of Hiroshima, Department of Health and Science, Hiroshima, Japan

**DOI** 10.1055/s-0041-1724584

**Citation:** Tamari H, Oka S, Tanaka S et al. eP85 CLINICAL USEFULNESS OF COMBINATION THERAPY USING POLIDOCANOL INJECTION AND ARGON PLASMA COAGULATION FOR GASTRIC ANTRAL VASCULAR ECTASIA. *Endoscopy* 2021; 53: S124.

**Aims** Gastric antral vascular ectasia (GAVE) is one of the forms in upper gastrointestinal bleeding. Various treatment options have been proposed, including endoscopic hemostasis and pharmacological therapy. In this study, we evaluated the usefulness of combination therapy using polidocanol injection (PDI) and argon plasma coagulation (APC) as a treatment for GAVE.

**Methods** We retrospectively analyzed the data on 15 consecutive patients with GAVE treated with PDI+APC at Hiroshima University Hospital between

November 2011 and September 2019, regarding clinical characteristics, hemostatic efficacy, recurrence rate, and time to recurrence.

**Results** The study group included 4 males and 11 females, with a mean age of 74±8.4 years. The mean hemoglobin level at the time of GAVE diagnosis was 6.5±1.4 g/dL, with 6 patients (40%) requiring a blood transfusion. Concomitant diseases included liver cirrhosis (7 patients, 47%), chronic renal failure (7 patients, 47%), and autoimmune diseases (7 patients, 47%). The endoscopic findings revealed diffuse type of GAVE (10 patients, 67%) and watermelon type of GAVE (5 patients, 33%). With respect to the background mucosa of the stomach, open-type atrophy was observed in 7 patients (47%) and close-type atrophy in 3 (20%), with no atrophy in other 5 patients (33%). For all patients, the treatment consisted of initial PDI (mean, 1.5±0.8 sessions) followed by additional APC (mean, 1.9±1.3 sessions); hemostasis was confirmed in all patients. Adverse events included ulcer formation in 1 patient (7%) and a hematoma in 1 patient (7%); healing of the mucosa was achieved in both patients with conservative treatment. The mean observation period was 54±34 months, with recurrence in 2 patients (13%), with a mean time to recurrence of 42 months.

**Conclusions** Combination therapy using PDI+APC is useful and safe for the treatment of patients with GAVE.

## eP86 ENDOSCOPIC BAND LIGATION VERSUS ARGON PLASMA COAGULATION IN THE TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

**Authors** Hirsch BS<sup>1</sup>, Ribeiro IB<sup>1</sup>, Funari MP<sup>1</sup>, de Moura DTH<sup>1</sup>, Matuguma SE<sup>1</sup>, Sanchez-Luna S<sup>2</sup>, Luz GdO<sup>1</sup>, Mancini FC<sup>1</sup>, de Oliveira GHP<sup>1</sup>, Bernardo WM<sup>1</sup>, de Moura EGH<sup>1</sup>

**Institute** 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 Center for Advanced Therapeutic Endoscopy, Division of Gastroenterology, Hepatology and Nutrition, Pittsburgh, United States

**DOI** 10.1055/s-0041-1724585

**Citation:** Hirsch BS, Ribeiro IB, Funari MP et al. eP86 ENDOSCOPIC BAND LIGATION VERSUS ARGON PLASMA COAGULATION IN THE TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. *Endoscopy* 2021; 53: S124.

**Aims** Gastric antral vascular ectasia (GAVE) is a condition that frequently carries high morbidity and financial impact. Patients with GAVE typically present occult or overt gastrointestinal bleeding and often become dependent on blood transfusions. Argon plasma coagulation (APC) is the most commonly used endoscopic treatment for this condition, despite considerable recurrence rates. Endoscopic band ligation (EBL) has emerged as an alternative therapy. Our goal was to evaluate the feasibility, efficacy, and safety of APC and EBL for the treatment of GAVE. This is the first systematic review and meta-analysis including only randomized controlled trials (RCT) of this topic.

**Methods** A comprehensive search was done of electronic databases (MEDLINE, Embase, Cochrane, LILACS) and gray literature to identify RCTs comparing APC and EBL for the treatment of GAVE following the PRISMA guidelines.

**Results** Four RCTs were included, totaling 204 patients. EBL presented higher endoscopic eradication rates (RD: 0.29, 95% CI [0.14, 0.44], p=0.0001, I<sup>2</sup>=0%) and less recurrence of bleeding compared to APC (RD: 0.29, 95% CI [0.15, 0.44], p<0.0001, I<sup>2</sup>=0%). Patients treated with EBL required fewer blood transfusions (MD: 1.49, 95% CI [0.28, 2.71], p=0.02, I<sup>2</sup>=96%) and hospitalizations (MD: 0.29, 95% CI [0.19, 0.39], p<0.00001, I<sup>2</sup>=0%). The number of sessions required for obliteration of the lesions was higher with APC (MD: 1.38, 95% CI [0.35, 2.42], p=0.009, I<sup>2</sup>=94%). There was no difference regarding adverse events (RD: -0.20, 95% CI [-0.48, 0.07], I<sup>2</sup>=91%).

**Conclusions** EBL and APC are both efficient and safe procedures for endoscopic treatment of GAVE. Nevertheless, EBL is superior in terms of endoscopic eradication rates, recurrence of bleeding, and transfusion requirements.

► **Tab.1**

	<b>Abdelhalim (2014)</b>	<b>Elhendawy (2015)</b>	<b>Ghobrial (2018)</b>	<b>Al-Wahab (2019)</b>
<b>Recurrence of bleeding</b>	EBL 1/20; APC 7/20	EBL NI; APC NI	EBL 1/20; APC 7/20	EBL 3/18; APC 8/18
<b>Endoscopic eradication</b>	EBL 19/20; APC 12/20	EBL NI; APC NI	EBL 19/20; APC 12/20	EBL 13/18; APC 10/18
<b>Mean number of hospitalizations</b>	EBL 0.05 ± 0.22; APC 0.5 ± 0.95	EBL NI; APC NI	EBL 0.67 ± 0.15; APC 0.95 ± 0.18	EBL NI; APC NI
<b>Transfusion requirements (units)</b>	EBL 0.15 ± 0.67; APC 2.00 ± 2.97	EBL 2.5 ± 0.70; APC 4.6 ± 0.89	EBL 0.44 ± 0.1; APC 1.0 ± 0.67	EBL NI; APC NI

### eP87V RADIOFREQUENCY ABLATION FOR THE TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA. A SERIES OF THREE CASES IN THE CENTRE OF GASTROENTEROLOGY AND HEPATOLOGY, MISURATA, LIBYA

**Authors** [Obide F<sup>1</sup>](#), [Maiteeg H<sup>2</sup>](#)

**Institute** **1** Faculty of Medicine Misurata University/Gastroenterology and Hepatology Center Misurata Libya, Endoscopy, Misurata,

Libya; **2** Gastroenterology and Hepatology Center Misurata Libya, Endoscopy, Misurata, Libya

DOI 10.1055/s-0041-1724586

**Citation:** Obide F, Maiteeg H. eP87V RADIOFREQUENCY ABLATION FOR THE TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA. A SERIES OF THREE CASES IN THE CENTRE OF GASTROENTEROLOGY AND HEPATOLOGY, MISURATA, LIBYA. *Endoscopy* 2021; 53: S125.

Gastric Antral Vascular Ectasia (GAVE) is an unusual cause of upper GIT bleeding. Recently, radiofrequency ablation (RFA) was used, when available, to treat GAVE gastritis with satisfactory results. Here, Halo RFA was used to treat three patients with GAVE gastritis. Each of the three patients received one or two sessions using Barrx Halo-90. All patients showed stabilization in their hemoglobin level from the first session so they no longer need blood transfusion, and the subsequent Upper GIT endoscopy showed satisfactory results. In Conclusion: treatment of moderate to severe GAVE with RFA can stabilize hemodynamic status with satisfactory results.

### eP88 PEPTIC ULCER DISEASE IN PATIENTS UNDER ANTIPLATELETS OR ANTICOAGULANTS: ANALYSIS OF UPPER GASTROINTESTINAL ENDOSCOPY FINDINGS

**Authors** [Mitselos I<sup>1</sup>](#), [Moutzoukis M<sup>2</sup>](#), [Lamouri C<sup>2</sup>](#), [Tsoumani N<sup>3</sup>](#), [Petrou A<sup>3</sup>](#), [Fousekis F<sup>2</sup>](#), [Baxevanos G<sup>3</sup>](#), [Dimos G<sup>3</sup>](#), [Raptis L<sup>3</sup>](#), [Tzimas T<sup>3</sup>](#), [Arvaniti E<sup>3</sup>](#), [Gkizas N<sup>3</sup>](#), [Liapis I<sup>3</sup>](#), [Christodoulou D<sup>2</sup>](#)

**Institute** **1** General Hospital of Ioannina, Gastroenterology and Hepatology, Ioannina, Greece; **2** University Hospital of Ioannina, Gastroenterology,

Ioannina, Greece; **3** General Hospital of Ioannina, Department of Internal Medicine, Ioannina, Greece

DOI 10.1055/s-0041-1724587

**Citation:** Mitselos I, Moutzoukis M, Lamouri C et al. eP88 PEPTIC ULCER DISEASE IN PATIENTS UNDER ANTIPLATELETS OR ANTICOAGULANTS: ANALYSIS OF UPPER GASTROINTESTINAL ENDOSCOPY FINDINGS. *Endoscopy* 2021; 53: S125.

**Aims** Among others, peptic ulcer disease is associated with certain drug classes. Our aim was to analyze the risk of peptic ulcer disease (PUD) in patients with hematemesis/melena/hematochezia, receiving anticoagulant or antiplatelet therapy.

**Methods** Single-center, retrospective study, of patients who underwent upper GI endoscopy for the investigation of suspected gastrointestinal bleeding, in the General Hospital Of Ioannina, Greece, from January 2017 to October 2019. Only patients with non-variceal upper gastrointestinal bleeding were included in the study.

**Results** The data of 201 patients with hematemesis/melena/hematochezia were analyzed. 131 patients (88 males, mean age 75.9, median 77, StD 11.6 years) were on treatment that could be responsible for their bleeding episode.

In detail, 34 patients were treated with Direct Acting Oral Anticoagulants [DOACs], 42 patients with antiplatelets (12 of which were on dual antiplatelet therapy), 8 patients with Low Molecular Weight Heparin (LMWH), 9 patients with a combination of antiplatelets and DOACs, 19 patients with acenocoumarol, 15 patients with NSAIDs, and 4 patients with classic aspirin. 70 patients were not reported to receive any therapy prior to endoscopy.

PUD was found in 18/42 (42.9%) of patients under antiplatelets, against 13/53 (24.5%) (p=0.06) treated with anticoagulants [in detail, 8/34 (23.5%) treated with DOACs (p=0.08) and 5/19 (26.3%) treated with acenocoumarol (p=0.2)] whereas 29/70 (41.4%) were under no treatment (41.4%) (p=0.88).

Peptic ulcer disease was the cause of bleeding in 8/12 patients (66.7%) treated with dual antiplatelet therapy.

**Conclusions** In non-variceal upper gastrointestinal bleeding, peptic ulcer disease is more frequently found in patients treated with antiplatelets compared to patients treated with anticoagulants.

This risk is increased in patients treated with dual antiplatelet therapy.

### eP89 ACUTE UPPER GASTROINTESTINAL BLEEDING: LESS SEVERE BLEEDING IN MORE FRAIL AND OLDER PATIENTS. COMPARISON BETWEEN TWO PERIODS FIFTEEN YEARS APART

**Authors** [Diamantopoulou G<sup>1</sup>](#), [Tsounis E<sup>2</sup>](#), [Papantoniou K<sup>2</sup>](#), [Kalafateli M<sup>1</sup>](#), [Konstantakis C<sup>1</sup>](#), [Theocharis G<sup>1</sup>](#), [Triantos C<sup>1</sup>](#), [Thomopoulos K<sup>1</sup>](#)

**Institute** **1** University Hospital of Patras, Gastroenterology, Patras, Greece; **2** University of Patras, Patras, Greece

DOI 10.1055/s-0041-1724588

**Citation:** Diamantopoulou G, Tsounis E, Papantoniou K et al. eP89 ACUTE UPPER GASTROINTESTINAL BLEEDING: LESS SEVERE BLEEDING IN MORE FRAIL AND OLDER PATIENTS. COMPARISON BETWEEN TWO PERIODS FIFTEEN YEARS APART. *Endoscopy* 2021; 53: S125.

**Aims** Acute upper gastrointestinal bleeding (AUGIB) remains a common medical emergency with considerable morbidity and mortality. The aim of this study was to compare characteristics of patients presented with AUGIB today with those of patients 15 years ago.

**Methods** Data from 225 patients admitted with AUGIB in our hospital in 2019 were compared with retrospectively collected data from 238 patients hospitalized with AUGIB at the same hospital 15 years ago (2004).

**Results** Mean age of patients increased from 66.1±16.1 years to 69.6±15.3 (p=0.016), more patients had coexisting diseases [190/225, 84.5% vs 174/238, 73.1%, p=0.01 (especially cardiovascular 138/225, 61.3% vs 118/238, 49.6% p=0.02)], were inpatients at onset of bleeding (20/225, 8.9% vs 9/238, 3.9%, p=0.023), were under anticoagulants (42/225, 18.7% vs 14/238, 5.9%, p=0.0001) but less under salospir ± clopidogrel (76/225, 33.7% vs 88/238,

37%), Charlson Comorbidity Index was higher nowadays (5.6±6.4 vs 3.4±2.3,  $p=0.01$ ). A peptic ulcer was less frequently cause of bleeding (88/225, 39.1% vs 136/238, 57.1%,  $p=0.005$ ) while more often nowadays endoscopy was negative (20/225, 8.9% vs 9/238, 3.8%,  $p=0.023$ ). In peptic ulcer bleeding patients active bleeding on endoscopy was less frequent [5/88, 5.7% vs 22/136, 16.8%,  $p=0.01$  (Ia: 0/88 vs 8/136)]. Also fewer patients had stigmata of recent bleeding required hemostasis (31/88 vs 72/136,  $p=0.004$ ) and more patients were without stigmata of recent hemorrhage 44/88 (50% vs 47/131, 35.9%,  $p=0.04$ ), and more patients were without stigmata of recent hemorrhage 44/88 (50% vs 47/131, 35.9%,  $p=0.04$ ). The rate of rebleeding statistically decreased (from 20/238, 8.4% to 9/225, 4%,  $p=0.02$ ) while overall mortality remained unchanged (14/238, 5.9% vs 11/225, 4.9%).

**Conclusions** AUGIB episodes nowadays are less severe with less peptic ulcer bleeding but the patients are older and with more comorbidities.

## eP90V ENDOSCOPIC TREATMENT OF BLEEDING GASTRIC VARICES USING EUS-GUIDED COILING AND 2-OCTYL CYANOACRYLATE INJECTION

Author [Lajin M<sup>1</sup>](#)

Institute 1 SHARP Health Care/San Diego, La Mesa, United States

DOI 10.1055/s-0041-1724589

**Citation:** Lajin M. eP90V ENDOSCOPIC TREATMENT OF BLEEDING GASTRIC VARICES USING EUS-GUIDED COILING AND 2-OCTYL CYANOACRYLATE INJECTION. *Endoscopy* 2021; 53: S126.

A 61-year-old male with liver cirrhosis secondary to NASH presented with hematemesis. Upper endoscopy showed gastric varices GOV2 with a fibrin clot. On EUS, no feeding vessel was identified. The intraluminal gastric varices were targeted with a transgastric approach. The varices were sized. A 19gauge needle was used.

A total of 3 coils (14mm-14cm) were deployed. Following that, 1 ml of Dermabond was injected over 45 seconds. Doppler confirmed the cessation of blood flow.

There were no adverse events. No further bleeding was observed after the procedure.

Follow-up EGD/EUS three months later confirmed the ablation of the gastric varices.

## eP91 PREDICTORS OF HIGH RISK ISOLATED GASTRIC VARICES: WHO SHOULD BE SCREENED?

Author [Hanafy A<sup>1</sup>](#)

Institute 1 Zagazig University, Internal Medicine Department – Endoscopy Unit-Gastroenterology and Hepatology Division, Zagazig, Egypt

DOI 10.1055/s-0041-1724590

**Citation:** Hanafy A. eP91 PREDICTORS OF HIGH RISK ISOLATED GASTRIC VARICES: WHO SHOULD BE SCREENED?. *Endoscopy* 2021; 53: S126.

**Aims** Isolated gastric varices (GV) type 1 is common to bleed. GV occur due to hepatofugal flow and empty into the systemic circulation via 2 pathways in the portosystemic collateral drainage the gastroesophageal or azygous venous system and the gastrophrenic venous system. We evaluated clinical and laboratory parameters in predicting the presence of risky IG1 in patients with portal hypertension for proper diagnosis and treatment.

**Methods** 56 patients (9.3%) who had isolated gastric varices type 1, they were compared to 60 patients diagnosed with esophageal varices, in both groups we evaluated severity of liver disease (Child-Pugh), MELD score. Abdominal Ultrasound to evaluate portal vein diameter, splenic bipolar diameter, left renal vein diameter, splenorenal space, and hilar collaterals and esophageal wall thickness.

**Results** In the gastric varices group, platelet count was significantly lower (0.001 LRV was significantly higher 1.3232±0.9 vs 0.8585±0.26 cm,  $p=0.01$  spleno renal space was significantly higher 9.44±1.2 vs 6.11±0.6 mm,  $p=0.02$  PVD The esophageal wall thickness 3.88±0.4 mm) presence of gastric varices

was correlated with platelet count (0.841  $p=0.000$  gamma globulin level (0.453  $p=0.001$  LRV diameter (0.538  $p=0.000$  and splenorenal space (0.768  $p=0.000$  esophageal wall thickness (0.415,  $p=0.003$ . Logistic regressive analysis revealed that LRV diameter  $\beta=2.18$   $P=0.000$  large splenorenal space with hilar collaterals  $\beta=4.49$   $P=0.000$  and esophageal wall thickness  $\beta=1.98$   $P=0.002$  are independently associated with isolated gastric varices LRV at a cutoff 1.19 cm with sensitivity 84% specificity 72% splenorenal space at a cutoff 8.5 mm with sensitivity 92% specificity 92% are predictive of presence of IG1 type 1.

**Conclusions** Increased renal vein diameter and splenorenal space with hilar collaterals together with normal esophageal wall thickness are highly associated with the presence of gastric varices.

## eP92V A NOVEL TECHNIQUE IN THE MANAGEMENT OF GASTROESOPHAGEAL VARICES

Authors [Yavuz A<sup>1</sup>](#), [Akan K<sup>1</sup>](#), [Süveran MM<sup>1</sup>](#), [Tuncer İ<sup>1</sup>](#), [Çolak Y<sup>1</sup>](#)

Institute 1 Istanbul Medeniyet University, Gastroenterology, Istanbul, Turkey

DOI 10.1055/s-0041-1724591

**Citation:** Yavuz A, Akan K, Süveran MM et al. eP92V A NOVEL TECHNIQUE IN THE MANAGEMENT OF GASTROESOPHAGEAL VARICES. *Endoscopy* 2021; 53: S126.

Using endoscopic variceal ligation (EVL) for esophageal varices may increase the risk of developing or worsening the formation of gastroesophageal varices (GOV). Band ligation, cyanoacrylate injection, and endoscopic ultrasound-guided coil and/or glue injection treatments can be used, but these methods have some risks such as bleeding and ulcer development. There are few case reports about hemoclip in acute gastric variceal bleeding as a safe alternative.

We successfully applied hemoclip for GOV1 to reduce gastric varicose pressure before the esophagus EVL procedure. Hemoclip application for GOV1 may be an alternative, safe, and cost-effective method in primary prophylaxis.

## eP93 THE EFFICACY OF BAND LIGATION FOR GASTROESOPHAGEAL VARICES 2-3 SM DISTAL TO Z-LINE

Authors [Manukyan K<sup>1</sup>](#), [Khalatyan A<sup>1</sup>](#), [Khachatryan S<sup>2</sup>](#)

Institute 1 Mikaelyan University Hospital, GI Endoscopy, Yerevan, Armenia;

2 Mikaelyan University Hospital, Yerevan, Armenia

DOI 10.1055/s-0041-1724592

**Citation:** Manukyan K, Khalatyan A, Khachatryan S et al. eP93 THE EFFICACY OF BAND LIGATION FOR GASTROESOPHAGEAL VARICES 2-3 SM DISTAL TO Z-LINE. *Endoscopy* 2021; 53: S126.

**Aims** The main accepted methods are band ligation and obliteration with cyanoacrylate glue for gastroesophageal variceal bleeding. The aim of this study to evaluate the efficacy of band ligation for varices 2-3 sm distal to Z-line.

**Methods** 73 patients were admitted with acute gastroesophageal variceal hemorrhage in Mikaelyan University Hospital during November, 2019-October, 2020. The cause of portal hypertension was liver cirrhosis (HCV, HBV, ALD, NAFLD) for 69 patients and HCC for 4 patients. The cyanoacrylate glue was used for isolated gastric variceal bleeding cases. The band ligation was used for esophageal variceal bleeding cases. In 23 (31.5%) cases were continued gastroesophageal varices (GOV 1, GOV 2 by Sarin classification), and the source of bleeding was 2-3 sm distal to Z-line. The endoscopic cap was used for antero-grade observation of varices and provided higher visibility for bleeding sources in the mentioned location. The localisation of bleeding allowed to place one band ligator distal to Z-line for each patient. The esophageal varices were ligated during the same procedure. All patients were dated for the next endoscopy within 4 weeks for the subsequent prophylactic band ligation.

**Results** Only one patient had early recurrent variceal bleeding within 7 days. The band ligation was effective for remaining 22 cases. They did not have recurrent bleeding episode during next 4 weeks.

**Conclusions** The band ligation could be effective for varices 2-3sm distal to Z line.

## eP94 DBE INSERTION ROUTE IN SMALL BOWEL LESIONS DETECTED BY CAPSULE ENDOSCOPY: WHICH WAY TO GO?

**Authors** Cortegoso Valdivia P<sup>1</sup>, Skonieczna-Żydecka K<sup>2</sup>, Pennazio M<sup>3</sup>, Rondonotti E<sup>4</sup>, Marlicz W<sup>5</sup>, Toth E<sup>6</sup>, Koulaouzidis A<sup>7</sup>

**Institute** 1 University Hospital of Parma, University of Parma, Gastroenterology and Endoscopy Unit, Parma, Italy; 2 Pomeranian Medical University in Szczecin, Department of Human Nutrition & Metabolomics, Szczecin, Poland; 3 City of Health and Science University Hospital, University Division of Gastroenterology, Turin, Italy; 4 Valduce Hospital, Gastroenterology Unit, Como, Italy; 5 Pomeranian Medical University in Szczecin, Department of Gastroenterology, Szczecin, Poland; 6 Skåne University Hospital, Lund University, Department of Gastroenterology, Malmö, Sweden; 7 The Royal Infirmary of Edinburgh, Endoscopy Unit, Edinburgh, United Kingdom  
DOI 10.1055/s-0041-1724593

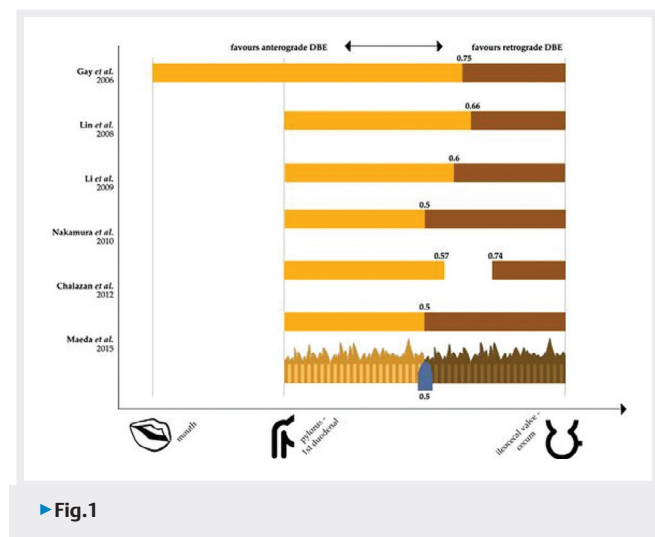
**Citation:** Cortegoso Valdivia P, Skonieczna-Żydecka K, Pennazio M et al. eP94 DBE INSERTION ROUTE IN SMALL BOWEL LESIONS DETECTED BY CAPSULE ENDOSCOPY: WHICH WAY TO GO? *Endoscopy* 2021; 53: S127.

**Aims** When capsule endoscopy (CE) examination reveals a small bowel (SB) lesion, selection of the insertion route for double-balloon enteroscopy (DBE) is pivotal. Few progression- and time-based indices/indicators have been proposed for this clinical challenge. In this study, we systematically reviewed the reported success and outcomes of these indicators in determining the DBE route of insertion.

**Methods** An extensive literature search was performed. Papers assessing the role of CE on DBE's route of insertion selection were screened. The success rate of DBE in reaching an SB target lesion (highlighted by CE) was the primary outcome, measured as the rate positive initial DBE to the total number of procedures. STROBE and PRISMA statements were used to determine the risk of bias and data reporting, respectively. Meta-analysis was not possible as time measurements of single CE procedures were not available.

**Results** Seven studies were selected, including 262 CE which required DBE procedures. Time-based indices were used in six studies, whereas the PillCam™ Progress indicator was used in one study (► **Fig. 1**). DBE insertion route was selected according to each indicator's specific cut-off, as SB lesions were localized using established anatomical landmarks; in one study, the mouth-cecum transit time was used. The success rate of initial DBE was high in all included studies, ranging from 78.3% to 100%.

**Conclusions** Choosing the appropriate DBE's insertion route remains an open issue. Several groups attempted to provide tools that may predict the precise localization of SB lesions, but larger studies are required to determine the most efficient indicator. Notwithstanding, although current evidence does not allow any strong recommendation, the success rate of available CE transit-related indices is high, thereby allowing clinicians to safely use the tool they feel more confident with.



► Fig. 1

## eP95 MID-GASTROINTESTINAL BLEEDING IN PATIENTS TREATED WITH DIRECT ORAL ANTICOAGULANTS: A "NEW" THREAT ON CAPSULE ENDOSCOPY?

**Authors** Macedo Silva V<sup>1,2,3</sup>, Freitas M<sup>1,2,3</sup>, Arieira C<sup>1,2,3</sup>, Xavier S<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Moreira MJ<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine - University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarães, Portugal  
DOI 10.1055/s-0041-1724594

**Citation:** Macedo Silva V, Freitas M, Arieira C et al. eP95 MID-GASTROINTESTINAL BLEEDING IN PATIENTS TREATED WITH DIRECT ORAL ANTICOAGULANTS: A "NEW" THREAT ON CAPSULE ENDOSCOPY? *Endoscopy* 2021; 53: S127.

**Aims** Direct oral anticoagulants (DOACs) have recently become a widespread alternative in anticoagulant therapy. Nevertheless, concerns are raised about their safety, with increased gastrointestinal bleeding rates being described for these agents when compared to classic anticoagulants. There are few studies regarding the effect of DOACs on small bowel capsule endoscopy (SBCE) findings. We aimed to assess if the detection rate of lesions with high bleeding potential (P2 lesions according to Saurin classification) on SBCE was significantly different in patients treated with DOACs when compared to non-anticoagulated patients and to patients anticoagulated with other agents (low molecular weight heparin and warfarin).

**Methods** Single center study of consecutive patients who underwent SBCE for suspected mid-gastrointestinal bleeding (MGIB) from January 2019 to October 2020.

**Results** From 148 patients, 38 (25.7%) were under anticoagulant treatment, of which 26 (68.4%) with DOACs. P2 lesions were detected in 36.5% (n = 54) of the patients submitted to SBCE for suspected MGIB. These lesions were more frequently detected in patients under DOACs treatment when compared to non-anticoagulated patients (69.2% vs 29.5%;  $p < 0.01$ ), but also when compared with patients treated with other anticoagulants (69.2% vs 33.3%;  $p = 0.04$ ). No differences in the incidence of P2 lesions was observed between patients treated with other anticoagulants and patients with no anticoagulation (33.3% vs 36.8%;  $p = 0.540$ ).

Finally, in multivariate analysis, NOACs usage was significantly associated with higher detection rates of P2 lesions on SBCE, when adjusted for other classical risk factors for MGIB (OR:3.45; IC95% = 1.25-9.52;  $p = 0.02$ ).

**Conclusions** Despite their undeniable cardiovascular benefits and easy applicability, DOACs should still be considered with caution when starting anticoagulation therapy. These drugs were significantly associated with higher risk of potentially bleeding lesions on SBCE when compared with other anticoagulants and represent an independent risk factor for MGIB when adjusted for other variables.

## eP96 CAPSULE ENDOSCOPY FINDINGS REFLECT THE GASTROINTESTINAL CONDITIONS IN PATIENTS WITH SYSTEMIC SCLERODERMA

**Authors** Iio S<sup>1</sup>, Oka S<sup>2</sup>, Tanaka S<sup>1</sup>, Sumioka A<sup>2</sup>, Tsuboi A<sup>2</sup>, Nojima T<sup>3</sup>, Hirata S<sup>3</sup>, Matsuo Y<sup>4</sup>, Sugiyama E<sup>3</sup>, Hide M<sup>4</sup>, Arihiro K<sup>5</sup>, Chayama K<sup>2</sup>

**Institute** 1 Hiroshima University, Department of Endoscopy, Hiroshima, Japan; 2 Hiroshima University, Department of Gastroenterology and Metabolism, Hiroshima, Japan; 3 Hiroshima University, Department of Clinical Immunology and Rheumatology, Hiroshima, Japan; 4 Hiroshima University, Department of Dermatology, Hiroshima, Japan; 5 Hiroshima University, Department of Anatomical Pathology, Hiroshima, Japan  
DOI 10.1055/s-0041-1724595

**Citation:** Iio S, Oka S, Tanaka S et al. eP96 CAPSULE ENDOSCOPY FINDINGS



REFLECT THE GASTROINTESTINAL CONDITIONS IN PATIENTS WITH SYSTEMIC SCLERODERMA. *Endoscopy* 2021; 53: S127.

**Aims** Systemic scleroderma (SSc) is characterized by chronic progressive systemic organ fibrosis. However, frequency and characteristics of small-bowel lesions in SSc patients are still unclear. This study aimed to evaluate the clinical state of SSc patients using capsule endoscopy (CE).

**Methods** A total of 65 consecutive patients with SSc (61 females; mean age, 64.3 years) underwent CE at Hiroshima University Hospital between April 2012 and December 2019. We compared the average capsule transit time of the esophagus, stomach and small-bowel, total small-bowel observation rate and characteristics and detection rate of small-bowel lesions between diffuse cutaneous SSc (dcSSc) and limited cutaneous SSc (lcSSc) patients, and between patients with fibrosis and those without it. Capsule endoscopy was performed using a PillCam SB2 or SB3 capsule (Covidien, Mansfield, MA, USA).

**Results** Small-bowel lesions were detected in 27 (42%) SSc patients. Type 1b angioectasias were significantly more frequent in lcSSc patients than in dcSSc patients ( $P=0.0071$ ). There was no significant difference in sex, mean age, or medication. The average capsule transit time in the esophagus was significantly longer in dcSSc patients than in lcSSc patients ( $P=0.0418$ ). Moreover, angioectasia, especially Type 1a angioectasia, was more frequent in the gastrointestinal tract in SSc patients without fibrosis than in those with it, and the average capsule transit time in the esophagus was significantly longer in SSc patients with fibrosis than in those without it.

**Conclusions** CE is considered as a useful modality for identification of small-bowel lesions in SSc patients and diagnosis of angioectasia in lcSSc patients. Also, CE can evaluate the different average capsule transit between lcSSc and dcSSc patients, as well as between SSc patients with fibrosis and those without it.

### eP97 A CASE OF BRONCHIAL ASPIRATION OF A SMALL BOWEL CAPSULE IN AN ELDERLY PATIENT

**Authors** Rizza S<sup>1</sup>, Bruno M<sup>2</sup>, Ciruolo M<sup>3</sup>, De Angelis CG<sup>2</sup>, GM Saracco<sup>3</sup>, Pennazio M<sup>2</sup>

**Institute** 1 Gastroenterology and Digestive Endoscopy Unit, AOU Città della Salute e della Scienza, University of Turin, Torino, Italy; 2 Gastroenterology and Digestive Endoscopy Unit, AOU Città della Salute e della Scienza, Turin, Italy; 3 Gastroenterology and Digestive Endoscopy Unit, AOU Città della Salute e della Scienza, University of Turin, Turin, Italy

DOI 10.1055/s-0041-1724596

**Citation:** Rizza S, Bruno M, Ciruolo M et al. eP97 A CASE OF BRONCHIAL ASPIRATION OF A SMALL BOWEL CAPSULE IN AN ELDERLY PATIENT. *Endoscopy* 2021; 53: S128.

**Aims** Small bowel video capsule endoscopy (VCE) is currently considered the first diagnostic method for the study of the small intestine.

**Methods** A 87-year-old man with heart disease on oral anticoagulation therapy, with previous left hemicolectomy for colonic adenocarcinoma presented with melena. Since upper and lower GI endoscopy were unrevealing he underwent to VCE for overt suspected small bowel bleeding.

**Results** Our in-depth checklist excluded contraindications to VCE. Ingestion of the capsule (PillCam SB3), however, appeared difficult and was followed by the onset of cough, initially more frequent but which regressed after a few seconds. Upon immediate evaluation of the images provided by the real-time recorder, the capsule did not appear in the esophagus but inside the airways, perhaps the trachea. Patient parameters were monitored immediately, O<sub>2</sub>-saturation remained regular and the patient appeared calm and stable. Pulmonologists were alerted and, having explained the case, performed a bronchoscopy for extraction of the foreign body: the inhaled capsule was identified in the intermediate bronchus of the right lung, and removed with a basket, without any complication. Clinical parameters were stable during and after the procedure. The patient was subsequently sent to study of the small intestine by placing the capsule using a gastroscope.

**Conclusions** Aspiration into the airways of a videocapsule is a very rare occurrence (frequency < 0.003%). Elderly patients may present pitfalls: although our patient had never reported dysphagia symptoms, an unrecognized swallowing disorder might be involved. Older age alone cannot in itself routinely presuppose the positioning of the capsule by gastroscopy or a preliminary videofluorographic study of swallowing, but it must be considered a "warning" for the physician and may require an accurate visualization in real time of the ingestion phase, in order to immediately catch an accidental aspiration and promptly activate all the appropriate measures.

### eP98 DOES A SECOND READING OF A CAPSULE ENDOSCOPY INCREASE DIAGNOSTIC YIELD?

**Authors** Blanco-Velasco G<sup>1</sup>, Solórzano-Pineda OM<sup>1</sup>, García-Contreras LF<sup>1</sup>, Martínez-Camacho C<sup>1</sup>, Hernández-Mondragón OV<sup>1</sup>, Murcio-Pérez E<sup>1</sup>, Blancas-Valencia JM<sup>1</sup>

**Institute** 1 Specialty Hospital, CMN Siglo XXI, IMSS, Endoscopy, Mexico City, Mexico

DOI 10.1055/s-0041-1724597

**Citation:** Blanco-Velasco G, Solórzano-Pineda OM, García-Contreras LF et al.

eP98 DOES A SECOND READING OF A CAPSULE ENDOSCOPY INCREASE DIAGNOSTIC YIELD?. *Endoscopy* 2021; 53: S128.

**Aims** Diagnostic yield (DY) of capsule endoscopy (CE) has a wide range (44.2% in occult bleeding to 92.3% in active bleeding) with a moderate to substantial interobserver agreement among experts (kappa 0.48-0.61). False negatives of CE are around 9%. The intention of this study is to identify whether a second CE reading by another endoscopist can increase DY.

**Methods** 100 CE already read with different indications were reread by a second blinded endoscopist. When the results of the readings were different, the images were discussed between both endoscopists, taking into account the opinion of a third endoscopist if there was no agreement between both. All the participating endoscopists have experience in reading CE (> 50 CE/year). The CE findings were divided in positive (vascular lesions, ulcers and tumors), equivocal (erosions or red spots) and negative. The interobserver agreement and the increase in DY were assessed, as well as the percentage of false negatives in the CE initially read.

**Results** Indications for CE included were small bowel bleeding (SBB) in 48 cases, Crohn's disease (CD) in 30, and other causes (iron-deficiency anemia, search for small-bowel tumors, and diarrhea) in 22. The interobserver agreement between both endoscopists was substantial ( $\kappa=0.79$ ). The findings in the first reading were 60% positive, 20% equivocal and 20% negative, while in the second they were 66% positive, 18% equivocal and 16% negative. The increase in the DY with the second reading was 6% ( $p=0.429$ ) for the total CE, 6.3% for SBB, 4.4% for CD and 9.2% for other indications. False negatives of the first CE reading were reported in 6% of cases.

**Conclusions** A second reading increases the diagnostic yield of the capsule endoscopy by 6% without a statistically significant difference.

### eP99 PILLCAM ESO CAPSULE, AN ALTERNATIVE DIAGNOSTIC TOOL DURING THE COVID-19 PANDEMIC. FIRST IRISH EXPERIENCE

**Authors** Nwaezeigwe M<sup>1</sup>, Quinlivan L<sup>1</sup>, O'Neill J<sup>1</sup>, Kaar A<sup>1</sup>, O'Grady J<sup>1</sup>, Buckley M<sup>1</sup>

**Institute** 1 Mercy University Hospital, Department of Gastroenterology and GI Function Lab, Cork, Ireland

DOI 10.1055/s-0041-1724598

**Citation:** Nwaezeigwe M, Quinlivan L, O'Neill J et al. eP99 PILLCAM ESO CAPSULE, AN ALTERNATIVE DIAGNOSTIC TOOL DURING THE COVID-19 PANDEMIC. FIRST IRISH EXPERIENCE. *Endoscopy* 2021; 53: S128.

**Aims** At the peak of the Covid-19 pandemic in Ireland, many routine and surveillance endoscopies were deferred, with only urgent procedures prioritised. The PillCam ESO (Given Imaging Ltd., Yoqneam, Israel) is a non-invasive

investigation, which offers an alternative method of evaluating the UGI tract for non-urgent referrals for endoscopy.

A prospective study to assess if the PillCam ESO can identify important anatomical landmarks stated in the British Society of Gastroenterology quality standards for upper gastrointestinal endoscopy and pathology in the Upper GI Tract.

**Methods** Patients who fitted our inclusion criteria were prospectively invited to participate into our trial.

The three main indications were 1; patients with dyspepsia less than 40 years of age with no red flag symptoms, 2; known cirrhosis to screen for varices, 3; UGI bleeds with a low Blatchford score ( $\leq 2$ ).

A local protocol for ingestion and series of positional guidelines was developed for the procedure.

Endoscopic landmarks, and pathology detection were evaluated by two independent endoscopists.

**Results** 32 exams have been successfully performed from June 2020 to date without complications. The two frequent indications were dyspepsia (66%) and abdominal pain (19%). Metoclopramide was administered in 66% of cases. Visualisation of the following major anatomical landmarks was achieved in 100% of cases: Oesophagus, oesophageal-gastro junction, greater curve, pylorus.

A full view of the cardia, fundus, lesser curve, incisura angularis and antrum was obtained in 97%, 87%, 93%, 97% and 97% of cases, respectively. D2 intubation was achieved in 90% of cases. A normal exam was reported in 34% of cases. Reflux oesophagitis and gastritis were the most common pathology detected. Adenocarcinoma of the OG junction was detected in 1 case.

**Conclusions** The PillCam ESO achieves excellent views of the upper GI tract. In selective cases, it is a safe alternative to gastroscopy which may help reduce gastroscopy waiting times.

## eP100 PROLONGED GASTRIC TRANSIT TIME IN SMALL-BOWEL CAPSULE ENDOSCOPY - WHICH PATIENTS ARE AT RISK AND WHAT IMPLICATIONS?

**Authors** Freitas M<sup>1,2,3</sup>, Macedo Silva V<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Moreira MJ<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 3 PT Government Associate Laboratory, ICVS/3B's, Braga/Guimarães, Portugal  
**DOI** 10.1055/s-0041-1724599

**Citation:** Freitas M, Macedo Silva V, Boal Carvalho P et al. eP100 PROLONGED GASTRIC TRANSIT TIME IN SMALL-BOWEL CAPSULE ENDOSCOPY - WHICH PATIENTS ARE AT RISK AND WHAT IMPLICATIONS? *Endoscopy* 2021; 53: S129.

**Aims** Prolonged gastric transit time (PGTT) is a commonly described cause for incomplete capsule endoscopy examination. We aimed to evaluate the prevalence and identify risk factors for PGTT, and to assess its impact on the rate of incomplete examinations.

**Methods** Retrospective study including consecutive patients undergoing small-bowel capsule endoscopy (SBCE) between January 2014 and August 2020. Patients with PGTT were consecutively included. Patients without PGTT were randomized (controls) in a 1:1 ratio. PGTT was defined as SBCE remaining in the stomach for more than 1h due to delayed gastric transit, as checked with the routine use of the Real Time Viewer, requiring an intervention such as prokinetic administration and/or endoscopically assisted capsule delivery into the duodenum.

**Results** PGTT occurred in 45/957 patients (4.7%). Both groups were similar regarding indication and inpatient status ( $p \geq 0.05$ ). The mean gastric transit

was higher in PGTT group (2h34±40min vs 39±41min;  $p < 0.001$ ), but the mean small bowel transit was similar between groups (4h48±2h11min vs 4h38±1h36min;  $p = 0.70$ ). PGTT group did not have a significant higher rate of incomplete exams (9.3% vs 4.7%;  $p = 0.68$ ). Patients with PGTT presented more frequently with inadequate small-bowel preparation ( $p = 0.01$ ). Older age (mean age of 52±20 vs 44±18 years;  $p = 0.045$ ), female sex (44.2% vs 18.6%;  $p = 0.01$ ), diabetes (25.6% vs 9.3%;  $p = 0.047$ ) and psychotropic medication use (30.2% vs 11.6%;  $p = 0.03$ ) were risk factors for PGTT.

**Conclusions** PGTT was a relatively common event, associated with higher rate of inadequate small-bowel preparation. Older age, female sex, diabetes and psychotropic medication use were risk factors for PGTT. However, it was not associated with a higher rate of incomplete exams in our cohort, likely because we routinely perform real time monitoring of the capsule passage and early preventive interventions such as prokinetic administration and/or endoscopically assisted capsule delivery to optimize the SBCE examination time.

## eP101 MAGNETICALLY CONTROLLED CAPSULE ENDOSCOPY (MCCE) IMPROVES DISTAL ESOPHAGEAL MUCOSAL AND CIRCUMFERENTIAL Z-LINE VISIBILITY

**Authors** Finta A<sup>1</sup>, Szalai M<sup>1</sup>, Lovasz BD<sup>2</sup>, Helle K<sup>3</sup>, Olle G<sup>3</sup>, Rosztoczy A<sup>3</sup>, Madacsy L<sup>1</sup>

**Institute** 1 Endo-Kapszula, Endoscopy Unit, Szekesfehervar, Hungary; 2 Semmelweis University, Department of Applied Health Sciences, Budapest, Hungary; 3 University of Szeged, Division of Gastroenterology, Department of Medicine, Szeged, Hungary  
**DOI** 10.1055/s-0041-1724600

**Citation:** Finta A, Szalai M, Lovasz BD et al. eP101 MAGNETICALLY CONTROLLED CAPSULE ENDOSCOPY (MCCE) IMPROVES DISTAL ESOPHAGEAL MUCOSAL AND CIRCUMFERENTIAL Z-LINE VISIBILITY. *Endoscopy* 2021; 53: S129.

**Aims** Magnetically controlled capsule endoscopy (MCCE) provides the opportunity for the non-invasive endoscopic screening of the upper gastrointestinal tract before small bowel capsule endoscopy (SBCE). Our recent in-vitro study gave preliminary evidence for the optimal setting of the outer magnetic field of the Ankon MCCE system to enhance the visualization of the cardia. Therefore, we aimed to compare the in-vivo visibility of the distal esophagus and the Z-line by different capsule swallowing protocols.

**Methods** Sixty consecutive patients, scheduled for SBCE with Ankon MCCE, were enrolled. Thirty of them (group A: 42 years; 53% female) swallowed the capsule in the modified left lateral position, leaning on their left forearms and elbows, while the outer magnet was positioned tightly against their backs, with magnetic field vectors (X,Y,Z axis) 180, -90 and 90 degrees, respectively. Thirty further patients (group B: 43 years; 47% female) swallowed the capsules in the same way but were asked to turn slowly on their back (supine position) as soon as the capsule passed the pharynx. The outer magnet was then positioned above their chest over the cardia.

**Results** Both the esophageal transit time (82±105 vs. 24±25 seconds,  $p < 0.05$ ) and the mean number of esophageal images (423±507 vs. 120±143 images,  $p < 0.05$ ) were significantly increased in group B compared to group A. Furthermore, patients in group B had significantly higher rates of both partial (90 vs. 36%,  $p < 0.005$ ) and complete Z-line visibility (73 vs. 23%,  $p < 0.005$ ). Of the studied 60 patients 22 (36.6%) had erosive reflux esophagitis and 1 (1.7%) had Barrett's esophagus.

**Conclusions** Application of our new MCCE protocol significantly improved the visibility of the distal esophagus and the Z-line. Further prospective randomized studies with a larger number of cases are needed to validate the results and compare the diagnostic yield with standard upper GI endoscopy.

## eP102 THE NEW GENERATION OF MIROCAM EXPRESS VIEW IS HIGHLY ACCURATE AND EFFECTIVE TO REDUCE THE CAPSULE ENDOSCOPY READING TIME

**Authors** Piccirelli S<sup>1,2</sup>, Mussetto A<sup>3</sup>, Bellumat A<sup>4</sup>, Cannizzaro R<sup>5</sup>, Pennazio M<sup>6</sup>, Pezzoli A<sup>7</sup>, Bizzotto A<sup>1</sup>, Fusetti N<sup>7</sup>, Valiante F<sup>4</sup>, Spada C<sup>1,2</sup>  
**Institute** 1 Istituto Ospedaliero Fondazione Poliambulanza, Endoscopy Unit, Brescia, Italy; 2 Policlinico Universitario Agostino Gemelli, Department of Gastroenterology, Rome, Italy; 3 S. Maria delle Croci Hospital, Gastroenterology Unit, Ravenna, Italy; 4 S Maria del Prato Hospital, Department of Gastroenterology and Digestive Endoscopy, Belluno, Italy; 5 Centro di Riferimento Oncologico (CRO) IRCCS, Oncological Gastroenterology Division, Aviano, Italy; 6 City of Health and Science University Hospital, University Division of Gastroenterology, Turin, Italy; 7 Sant'Anna University Hospital, Department of Gastroenterology and Endoscopy Unit, Ferrara, Italy

**DOI** 10.1055/s-0041-1724601

**Citation** Piccirelli S, Mussetto A, Bellumat A et al. eP102 THE NEW GENERATION OF MIROCAM EXPRESS VIEW IS HIGHLY ACCURATE AND EFFECTIVE TO REDUCE THE CAPSULE ENDOSCOPY READING TIME. *Endoscopy* 2021; 53: S130.

**Aims** CE reading is time-consuming and still represents a main limitation in CE. A new generation Express View(EV) algorithm has been designed by Mirocam to shorten CE videos. Primary aim was to evaluate EV diagnostic accuracy in detection of small bowel lesions. Secondary objective was to compare median reading time in EV mode vs Standard Reading(SR)

**Methods** 126 Patients with suspected small bowel bleeding and/or suspected neoplasia were prospectively enrolled in six Centers and underwent small-bowel CE (MC 1200,Intromedic,Republic of Korea). CE evaluation was initially performed in standard mode. Subsequently, EV reading was performed by a second independent blinded reader. For each lesion, location, nature, and relevance according to the Saurin classification were collected. SR was considered as the gold standard. In case of discrepancies between SR and EV reading, a Consensus of experts (considered as the new gold standard) reviewed the video and re-classified the findings. Reading time (gastric+small bowel) was also measured.

**Results** 115 Patients were included in the per-patient analysis (11 patients were excluded: n= 4 incomplete examination;n=7 gastric or colonic findings). SR and EV reading were concordant in 85.2% of patients (n = 62 SR+EV+;n = 36 SR-EV-) and discordant in 14.8% of patients (n = 10 SR+EV-;n=7 SR-EV+). EV accuracy compared to SR is shown in the table below. At Consensus review, EV was reclassified to properly detect the lesion responsible for the final diagnosis in 15 out of 17 discordant reports, being the disagreement due to a reader misinterpretation. In the remaining 2 patients, EV software missed relevant lesions(1 ileal hemangioma and 1 ileal erosion). EV Accuracy after Consensus is shown in the table below. Median reading time at SR and EV was 71 minutes (range 26-340) and 13 minutes(range 3-85), respectively (p<0.001). Completion rate was 86.5%. No case of retention occurred.

**Conclusions** Express View showed high diagnostic accuracy and significantly reduces CE reading time.

► Tab.1

	Before Consensus	After Consensus
EV sensitivity	86 %	97 %
EV specificity	84 %	100 %
EV PPV	90 %	100 %
EV NPV	78 %	95 %

## eP103 AUDIT OF THE USE OF PROKINETICS TO IMPROVE COMPLETION RATES OF SMALL BOWEL CAPSULE ENDOSCOPY

**Authors** O'Hara F<sup>1</sup>, Seminov S<sup>1</sup>, McNamara D<sup>1</sup>  
**Institute** 1 Tallaght University Hospital, Gastroenterology Department, Dublin, Ireland

**DOI** 10.1055/s-0041-1724602

**Citation** O'Hara F, Seminov S, McNamara D eP103 AUDIT OF THE USE OF PROKINETICS TO IMPROVE COMPLETION RATES OF SMALL BOWEL CAPSULE ENDOSCOPY. *Endoscopy* 2021; 53: S130.

**Aims** Prolonged gastric transit has been recognized as a risk factor for incomplete small bowel capsule endoscopy (SBCE). ESGE suggests patients with increased risk may benefit from the administration of prokinetics when the capsule remains in the stomach for >30 – 60 minutes. Gastric transit is routinely assessed in at risk subjects at 30 minutes in our unit. IV Metoclopramide 10mg is given as an initial prokinetic, and 250mg IV Erythromycin as a second prokinetic after a further 30 minutes if required.

**Aim** To assess the efficacy of prospective gastric transit assessment and intervention.

**Methods** A retrospective analysis of SBCE's performed since the introduction of prospective gastric passage assessment in at risk patients from April 2020 to present in our unit. Basic demographics, procedure outcomes and prokinetic usage was recorded. Comparison was made with age and gender matched controls without delayed gastric emptying in a 2:1 ratio.

**Results** In all, 400 procedures were included, 13.25% (n = 53) received a prokinetic; 45 (85%) received a single prokinetic, with 8 (15%) receiving a second. Demographics were similar to controls (n = 106), mean age 55 vs 57 years and 51% vs 49% male. The small bowel transit time in the prokinetic group was faster than controls, (193 versus 228 minutes, p=0.01. However, completion rates (90.2% (n = 48) vs 96.25% (n = 102)) and rates of significant findings (37.7% (n = 20) vs 32.5% (n = 34)) were similar. No capsules were retained. There were no serious adverse events (SE) in the prokinetic group, but 4 (7%) reported any SE including nausea, dizziness and pain at the cannula site.

**Conclusions** In patients at risk of incomplete SBCE as a result of delayed gastric emptying assessment of gastric transit and administration of prokinetics if required is effective. A significant (15%) proportion require a second prokinetic increasing the potential for adverse events. Alternative prokinetic interventions would be advantageous.

## eP104 TOP100 AS A RAPID TOOL FOR DIAGNOSIS IN OVERT SMALL BOWEL BLEEDING

**Authors** Giordano A<sup>1</sup>, Escude L<sup>1</sup>, Escapa M<sup>1</sup>, Fernández-Esparrach G<sup>1</sup>, Ginés A<sup>1</sup>, Llach J<sup>1</sup>, González-Suárez B<sup>1</sup>

**Institute** 1 Hospital Clínic de Barcelona, Endoscopy Unit. Gastroenterology Department, Barcelona, Spain

**DOI** 10.1055/s-0041-1724603

**Citation** Giordano A<sup>1</sup>, Escude L<sup>1</sup>, Escapa M<sup>1</sup> et al. eP104 TOP100 AS A RAPID TOOL FOR DIAGNOSIS IN OVERT SMALL BOWEL BLEEDING. *Endoscopy* 2021; 53: S130.

**Aims** Small bowel bleeding is an insidious cause of repeated hospitalizations, blood transfusions and endoscopic explorations. Capsule endoscopy (CE) is the first-choice technique to explore the small bowel, although long reading times may particularly affect cases with active overt bleeding. From 2017 Pillcam Reader software incorporates a new tool called "TOP100" that rapidly identifies images of potentially abnormal lesions. The present study aims at evaluating TOP100 detection ability in patients with overt small bowel bleeding.

**Methods** CE videos were retrospectively selected according to the indication of recent overt small bowel bleeding (<14 days). One experienced endoscopist performed conventional reading (CR) and a second experienced endoscopist, blind to CR, assessed TOP100 images, rating the lesions according to Saurin classification: high risk bleeding lesions (P2) and potential bleeding lesions (P1).

**Results** Ninety-one patients were included. The CR diagnostic yield for P2 lesions was 71.4% (65/91 patients). TOP100 detected 78.5% of patients with P2 lesions (51/65). TOP100 detected 100% of active bleeding (9/9) and 87.5% of angiodysplasias (28/32) cases. TOP100 false negatives were angiodysplasias (n=4), ulcers (n=4), varices (n=2) and polyps (n=1). In 5 cases, suspected angiodysplasias (n=4) and ulcers (n=1) were identified by TOP100 and not confirmed by CR (false positives). TOP 100 identified 65% of P1 lesions cases (17/25).

**Conclusions** TOP100 represents a rapid tool to correctly identify the majority of lesions in overt small bowel bleeding cases, with a 100% detection rate in case of active bleeding, allowing a prompt indication for treatment. CR still remains the gold standard for a complete and meticulous assessment of the small bowel.

## eP105 THE USE OF BOWEL PREPARATION TO IMPROVE DIAGNOSTIC YIELD IN SMALL BOWEL CAPSULE ENDOSCOPY. A PROSPECTIVE RANDOMISED NESTED CASE CONTROL STUDY OF MOVIPREP VERSUS DIETARY MEASURES

**Authors** O'Hara F<sup>1</sup>, Seminov S<sup>1</sup>, McNamara D<sup>1</sup>

**Institute** 1 Tallaght University Hospital, Gastroenterology Department, Dublin, Ireland

**DOI** 10.1055/s-0041-1724604

**Citation** O'Hara F, Seminov S, McNamara D eP105 THE USE OF BOWEL PREPARATION TO IMPROVE DIAGNOSTIC YIELD IN SMALL BOWEL CAPSULE ENDOSCOPY. A PROSPECTIVE RANDOMISED NESTED CASE CONTROL STUDY OF MOVIPREP VERSUS DIETARY MEASURES. *Endoscopy* 2021; 53: S131.

**Aims** During small bowel capsule endoscopy (SBCE) several factors such as air bubbles, food residue and delayed small bowel transit time can influence optimal visualization. ESGE recommends a Polyethylene glycol-based purgative for better visualisation. However, evidence relating to completion rates and diagnostic yield is still inconclusive and the optimal timing for purgative use remains to be established.

**Aim** To assess the effect of the addition of Moviprep to dietary manipulation and fasting in a real-world population.

**Methods** A prospective randomised nested case control study of unselected SBCE subjects presenting for elective outpatient capsule procedures to our unit. Patients were randomised to receive 1L of Moviprep on the evening prior to the study, in addition to our standard protocol of dietary manipulation. Procedures were all performed in the morning following an overnight fast, using Medtronic SB3 capsules. Readers were blinded to the preparation group. Age and gender matched controls were identified from our data-base and included in a 3:1 ratio for analysis. Basic demographics, procedure outcomes and preparation quality were recorded. Preparation quality was graded as good, adequate or sub-optimal.

**Results** 140 patients have been analysed to date; 35 Movicol subjects, (46% male, mean age 54 years) and 105 matched controls. Preparation quality was similar being good or adequate in 91% and 90% in the Moviprep and control groups respectively. Procedure outcomes were also similar in the Moviprep and Control groups; small bowel transit times 212.9 vs 228.3 minutes and completion rates 94.3% vs 96.3%. Importantly there was no statistical difference in reported clinically significant findings 34.29% vs 32.5%. Approximately 10% of procedures in both groups had some areas of poor visualisation described.

**Conclusions** The addition of 1L Moviprep, the evening before SBCE, provided no improvement in overall preparation quality or diagnostic yield. Further research into optimal small bowel preparation for capsule endoscopy is required.

## eP106 INTRA-OPERATIVE ENTEROSCOPY: A LAST RESORT IN SMALL BOWEL BLEEDING

**Authors** Costa M<sup>1</sup>, Macedo C<sup>1</sup>, Amaro A<sup>2</sup>, Agostinho C<sup>1</sup>, Ferreira M<sup>1</sup>, Almeida N<sup>1,3</sup>, Figueiredo P<sup>1,3</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal; 2 Centro Hospitalar e Universitário de Coimbra, General Surgery, Coimbra, Portugal; 3 Faculdade de Medicina da Universidade de Coimbra, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724605

**Citation** Costa M, Macedo C, Amaro A et al. eP106 INTRA-OPERATIVE ENTEROSCOPY: A LAST RESORT IN SMALL BOWEL BLEEDING. *Endoscopy* 2021; 53: S131.

**Aims** Only 5% of gastrointestinal (GI) bleeding occur in the small bowel (SB) but it accounts for most obscure GI bleeding. The availability of new diagnostic tools like computed tomography enterography (CTE), capsule endoscopy (CE) and double balloon enteroscopy has led to a paradigm shift in SB bleeding management. We, herein, present a case in which the non-surgical approach was not feasible.

### Methods

**Results** Case Report: A 60-year-old male patient was admitted in the gastroenterology department for melena and acute blood loss. He had started dual antiplatelet therapy after coronary angioplasty the previous week. In the initial admission the patient was unstable and was admitted in the gastroenterology intensive care unit for surveillance. He underwent gastroscopy and colonoscopy without relevant alterations. CE showed active jejunal bleeding, but its etiology was not defined by this technique. An oral balloon assisted enteroscopy identified small hemorrhagic suffusions that were fulgurated but the patient presented recurrent melena. The following month, an emergency push enteroscopy due to hemorrhagic shock was performed and did not show any lesions. CTE and CT angiography were normal. Meckel scintigraphy did not show ectopic gastric mucosa. As GI bleeding persisted, he underwent repeated CE showing an erosion with a central vascular prominence and an intra-operative enteroscopy through the enterotomy site was performed. A small ulcer with a reddish center, similar with the lesion in the CE, was identified and a jejunal segmental enterectomy was performed. Histology revealed fibrosis and submucosal congestion. The patient required a total of 26 red blood cell transfusions in 4 months. GI bleed did not recur following the procedure and the patient sustains a stable hemoglobin 10 months later.

**Conclusions** Intra-operative enteroscopy maintains its importance in the evaluation of SB bleeding specially when SB lesions have not been localized or successfully treated with other less invasive techniques.

## eP107 EFFICACY AND SAFETY OF THE POWER SPIRAL ENTEROSCOPY: A PROSPECTIVE STUDY

**Authors** Sportes A<sup>1</sup>, Aibidi A<sup>1</sup>, Hanna N<sup>1</sup>, Rey JF<sup>1</sup>

**Institute** 1 Institut Arnault Tzanck, Hépatogastroentérologie, Saint Laurent du Var, France

**DOI** 10.1055/s-0041-1724606

**Citation** Sportes A, Aibidi A, Hanna N et al. eP107 EFFICACY AND SAFETY OF THE POWER SPIRAL ENTEROSCOPY: A PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S131.

**Aims** The aim of our study is to evaluate efficacy and safety of this novel method in patients with suspected small bowel disease in our institution.

**Methods** This prospective study with descriptive evaluation is conducted at Institut Arnault Tzanck, France

**Inclusion criteria** Patients with suspected small bowel disease with a positive finding on prior small bowel capsule endoscopy for deep antegrade or retrograde enteroscopy are enrolled after obtaining informed consent.

**Exclusion criteria** Patients under the age of 18, bariatric surgery, suspected or history of bowel obstruction, stenosis or suspected oesophageal stricture,



cirrhosis with gastric or oesophageal varices, contraindication to sedation or general anaesthesia for any reason are excluded from the study.

**Primary endpoint** The diagnostic yield or reaching target of PSE (Power Spiral Enteroscopy) in patients with one or more positive findings on prior small bowel capsule endoscopy.

**Secondary endpoints** Percentage of cases with total antegrade enteroscopy (progression up to ileum à caecum), Rate of therapeutic interventions, Adverse events during the procedure. Duration of the procedure.

**Results** Fifty (50) patients met the inclusion criteria.

**The diagnostic yield** in our study was 62% (31/50).

Diagnoses included AVM (48% (24/50)), polyps/neoplastic lesions (4% (2/50)), inflammatory lesions (eg, ulcers, erosions) (10% (5/50)) and 10% (5/50) of the patients had other findings: jejunal diverticula (n = 3), jejunal lipoma (n = 1) and phlebectasia (n = 1). Tissue sampling was performed in 3/50 patients (6%).

**Interventional** PSE was observed in 56% of patients (28/50)

Median total procedure time was 25 min (range 7–38 min).

Procedure-related AEs were observed in 14 patients (28%) such as superficial mucosal tears (four patients in the small bowel, ten in the oesophagus), all of whom were clinically asymptomatic.

No serious procedure-related events were noted.

**Conclusions** Motorized spiral enteroscopy in an alternative technique for diagnostic and therapeutic small bowel enteroscopy.

## eP108V ILEAL CAPILLARY HEMANGIOMA AS A CAUSE OF RECURRENT GASTROINTESTINAL BLEEDING AND SEVERE ANEMIA IN MIDDLE AGE FEMALE

**Authors** Ghoneem E<sup>1,2</sup>, Mohamed Abutaleb H<sup>3</sup>, Abou El-Magd ES<sup>4</sup>, Shiha G<sup>1,2</sup>

**Institute** 1 Faculty of Medicine, Mansoura University, Gastroenterology and Hepatology, Mansoura, Egypt; 2 Egyptian Liver Research Institute and Hospital (ELRIAH), Gastroenterology and Hepatology, Mansoura, Egypt; 3 Beni-Suef University, Gastroenterology and Hepatology, Beni-Suef, Egypt; 4 Mansoura University, Gastrointestinal Surgery, Mansoura, Egypt

**DOI** 10.1055/s-0041-1724607

**Citation** Ghoneem E, Mohamed Abutaleb H, Abou El-Magd ES et al. eP108V ILEAL CAPILLARY HEMANGIOMA AS A CAUSE OF RECURRENT GASTROINTESTINAL BLEEDING AND SEVERE ANEMIA IN MIDDLE AGE FEMALE. *Endoscopy* 2021; 53: S132.

Fifty- Two years old female presented with recurrent attack of melena and bleeding per rectum with severe recurrent anemia and blood transfusion. Upper and lower GIT endoscopy in two sessions by two endoscopists were free. Double balloon enteroscopy was planned and decided to do it through anal route. We found an ileal mass 40 cm from the ICV, but the mass go proximally with scope introduction and we found it again about 110 cm from the ICV (secondary intussusception). The mass biopsied and surgical intervention was planned. Laparoscopic resection anastomosis was done. Pathological diagnosed was capillary hemangioma.

## eP110 COELIAC: A GUT FEELING. AN INVESTIGATION INTO WHAT FACTORS INFLUENCE PATTERNS OF CLINICAL PRESENTATION IN ADULT ONSET COELIAC DISEASE

**Authors** O'Shaughnessy K<sup>1</sup>, Jackson L<sup>2</sup>, Stack W<sup>2</sup>, Hayes T<sup>3</sup>, Kenny E<sup>4</sup>

**Institute** 1 University College Cork, Cork, Ireland; 2 Bon Secours Hospital, Department of Gastroenterology, Cork, Ireland; 3 Bon Secours Hospital, Department of Pathology, Cork, Ireland; 4 Cork University Hospital, Department of Gastroenterology, Cork, Ireland

**DOI** 10.1055/s-0041-1724608

**Citation** O'Shaughnessy K, Jackson L, Stack W et al. eP110 COELIAC: A GUT FEELING. AN INVESTIGATION INTO WHAT FACTORS INFLUENCE PATTERNS OF CLINICAL PRESENTATION IN ADULT ONSET COELIAC DISEASE. *Endoscopy* 2021; 53: S132.

**Aims** Anxiety and depression are common in coeliac disease (CD) patients, and many psycho-social explanations have been considered. However, as the gut-brain axis is becoming increasingly understood, biological mechanisms have been proposed, including vitamin or mineral deficiencies and gut inflammation. The aim of this study was to investigate associations between anxiety/depression and symptom severity, vitamin status, and gut inflammation in untreated adult patients presenting with a serologic indication of coeliac disease.

**Methods** The Hospital Anxiety and Depression Scale, Coeliac Symptom Index and Perceived Stress Scale questionnaires were administered to 17 patients over a 14-month period. Duodenal biopsies were obtained to determine histological Marsh score. Iron, B12, folate, vitamin D and thyroid function tests were reviewed.

**Results** HADS-A scores correlated with symptom severity (rs=0.62, p=0.008) but not with any hematological investigations or degree of intestinal inflammation. No patients scored highly for depression. Iron deficiency was the most common deficiency observed (n = 6). Greater symptomatology was associated with female sex (females vs males, average CSI scores 32.1 vs 23.6; t17= 2.1, p<0.05), younger age at presentation (rs= -0.55, P=0.02), and lower Marsh score (Marsh 0 vs Marsh 3C, mean scores 36 vs 24.5; t5= 6.2, p=0.009).

**Conclusions** Anxiety experienced by CD patients at presentation is likely a reactive form due to gastrointestinal symptoms rather than a biologic process specific to CD. Older patients tend to present less symptomatically, highlighting the need for screening of at-risk individuals. The degree of villous atrophy does not correlate well with clinical presentation. Highly symptomatic patients should be screened for anxiety at presentation to allow for early intervention and ultimately, improved gluten-free diet adherence.

## eP111 CLINICAL UTILITY OF DUODENAL BIOPSIES IN THE DIAGNOSIS OF CHRONIC DIARRHEA. A RETROSPECTIVE STUDY

**Authors** Voulgaris T<sup>1</sup>, Tampaki M<sup>1</sup>, Laoudi E<sup>1</sup>, Karatzas P<sup>1</sup>, Karamanolis G<sup>1</sup>, Vlachogiannakos J<sup>1</sup>, Papaxoinis K<sup>1</sup>, Kamperoglou D<sup>1</sup>, Papatheodoridis G<sup>1</sup>

**Institute** 1 Laiko General Hospital of Athens, Athens, Greece

**DOI** 10.1055/s-0041-1724609

**Citation** Voulgaris T, Tampaki M, Laoudi E et al. eP111 CLINICAL UTILITY OF DUODENAL BIOPSIES IN THE DIAGNOSIS OF CHRONIC DIARRHEA. A RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S132.

**Aims** According to published guidelines, in patients with chronic diarrhea, when no diagnosis can be made by laboratory studies and/or ileocolonoscopy an upper GI endoscopy with duodenal biopsy sampling should be executed. Aim of our study was to access the clinical benefit of such a strategy.

**Methods** All patients who underwent an upper GI endoscopy in our department due to chronic diarrhea during a five year period (1/2015-12/2019) were included in our study. Epidemiological, endoscopic and histologic data were analyzed.

**Results** Totally 169 patients with chronic diarrhea were included. Biopsy samples were taken by 108 patients (M/F: 48/63, median age 55 years [16-86]) and the histology report was available in 100 of them. Endoscopic abnormalities of the duodenal mucosa were reported in 42 (38,9%) pts. Bulb atrophy with visible submucosal vessels, combined with flattening or scalloping of Kerkring folds was reported among 15/42, mucosal edema and/or hyperemia in 9/42 and other/non-specific findings in 18 pts. Histology was indicative of a specific diagnosis in 25 pts: Celiac disease in 10/25, crohn's disease in 3/25 and other specific pathology in 12/25 pts. In pts without pathological endoscopic findings, histology added diagnostically in 7/60 (11,7%) pts, while among pts with visible duodenal abnormalities in 18/42 (45%) pts(p<0,001). Among pts with loss, and flattening or scalloping of Kerkring folds, the histologic report added diagnostically in 9/15 without though being correlated to celiac disease diagnosis (4/9(p=0,500)).

**Conclusions** Duodenal biopsy sampling is helpful in the diagnosis of approximately 1/10 patients with chronic diarrhea and absence of specific endoscopic

findings. This effect increases significantly to 45% among patients with endoscopically visible duodenal abnormalities.

## eP112 SMALL BOWEL ANASTOMOTIC ULCERS AS A RARE CAUSE OF ANEMIA/OVERT GASTROINTESTINAL BLEEDING IN PATIENTS WITH A PREVIOUS NON-IBD RELATED SMALL INTESTINE RESECTION

**Authors** Purchiaroni F<sup>1</sup>, Marmo C<sup>1</sup>, Costamagna G<sup>1,2</sup>, Riccioni ME<sup>1,2</sup>

**Institute** 1 Fondazione Policlinico Universitario A. Gemelli IRCCS, GI Endoscopy, Rome, Italy; 2 Università Cattolica del Sacro Cuore, Rome, Italy

**DOI** 10.1055/s-0041-1724610

**Citation** Purchiaroni F, Marmo C, Costamagna G et al. eP112 SMALL BOWEL ANASTOMOTIC ULCERS AS A RARE CAUSE OF ANEMIA/OVERT GASTROINTESTINAL BLEEDING IN PATIENTS WITH A PREVIOUS NON-IBD RELATED SMALL INTESTINE RESECTION. *Endoscopy* 2021; 53: S133.

**Aims** Anastomotic ulcers represent a serious complication after gastrointestinal (GI) surgery. They have been described as mainly associated to bariatric surgery and colonic resection with ileocolic anastomosis. No data regarding small bowel (SB) anastomotic ulcerations after SB resection are currently available in literature.

Patients with anemia/overt obscure GI bleeding (OGIB), who previously had non-inflammatory bowel diseases (IBD)-related SB resection, underwent capsule endoscopy (CE) after negative endoscopic examinations.

The aim of this retrospective study is to evaluate the percentage of SB anastomotic ulcers as a cause of anemia/overt OGIB in patients with non-IBD-related SB resection (i.e. volvulus, intra-abdominal adhesences, intussusception, Meckel's diverticulum).

**Methods** CE was performed after negative endoscopic examinations. An expert team reviewed the CE images of 800 male and female patients, collected between January 2011 and January 2019. Demographic and CE data were retrieved from our endoscopic database.

**Results** 13 over 800 patients (1.6%) were diagnosed with SB anastomotic ulcerations. Among these patients, 6 were female and 7 were male. The median age was 59 years (range 8-77). 5 over 13 patients (38%) had diabetes mellitus and/or cardiovascular diseases; 3 patients (23%) were under anticoagulant/antiplatelet therapy.

**Conclusions** Our study showed that SB anastomotic ulcerations are a rare cause of anemia/overt OGIB in patients with non-IBD SB resection. Anticoagulant/antiplatelet therapy may increase the possibility of bleeding from these lesions. Age may also represent a predisposing factor, as the majority of patients were adult/elderly people. Moreover, comorbidities such as diabetes mellitus or other metabolic and cardiovascular diseases may contribute to SB ulcers formation.

In conclusion, when anemia/OGIB occur in patients with a non-IBD SB resection and endoscopic examinations are negative, we suggest searching for SB anastomotic ulcers at CE, as they can be a possible cause of patients' signs and symptoms, especially in adult/elderly patients with cardiovascular and/or metabolic diseases.

## eP113 THE PREVALENCE OF HISTOLOGICALLY COELIAC DISEASE COMPATIBLE CASES WITH NORMAL ENDOSCOPIC APPEARANCE IN PREVIOUSLY UNSUSPECTED OR WITH MILD CLINICAL PHENOTYPE PATIENTS

**Authors** Manukyan K<sup>1</sup>, Khalatyan A<sup>2</sup>, Khachatryan S<sup>2</sup>

**Institute** 1 Mikaelyan University Hospital, Gastrointestinal Endoscopy, Yerevan, Armenia; 2 Mikaelyan University Hospital, GI Endoscopy, Yerevan, Armenia

**DOI** 10.1055/s-0041-1724611

**Citation** Manukyan K, Khalatyan A, Khachatryan S eP113 THE PREVALENCE OF HISTOLOGICALLY COELIAC DISEASE COMPATIBLE CASES WITH NORMAL

ENDOSCOPIC APPEARANCE IN PREVIOUSLY UNSUSPECTED OR WITH MILD CLINICAL PHENOTYPE PATIENTS. *Endoscopy* 2021; 53: S133.

**Aims** There are many etiologic factors which may cause the coeliac type enteropathy (CTE)- NSAIDs, giardiasis, coeliac disease (CD), etc. The aim of this study to evaluate the histological findings received from duodenal biopsy and to investigate the prevalence of CD compatible cases with normal endoscopic appearance in previously unsuspected or with mild clinical phenotype patients.

**Methods** The endoscopy and duodenal biopsy for CD/CTE investigation were indicated for 62 patients in GI Endoscopic Department, Mikaelyan University Hospital during January- October, 2020. The endoscopists were used same evaluating methods for CTE: white light endoscopy, digital chromoendoscopy (NBI), water immersion. Totally, 5 biopsy pieces were taken from first and second parts of duodenum. The microscopic examinations were provided by two pathologists, and were classified by Marsh score.

**Results** Endoscopic features of CTE- mucosal mosaicism, visible submucosal vessels, loss of villi, scalloping of folds- were identified in 6 patients, and the Marsh score was IIIa, IIIb, IIIc. Remaining 56 patients had endoscopic intact duodenum, from these CTE was confirmed histologically in 12/56 (21,4%) patients. The number of endoscopic intact duodenum patients was twice more than endoscopically visible CTE patients among histologically positive cases. Though the duodenum was endoscopic intact, the mucosal lesions compatible with CD (Marsh score IIIa, IIIb) were in 10 (17,8%) cases. 2 patients had Marsh score II.

**Conclusions** Endoscopic techniques allow to find out only villous atrophy, however the study shows that Marsh IIIa, IIIb histological scores could be described even in endoscopically intact duodenum (17,8%). Therefore, the biopsy acquisition during endoscopy plays essential role in evaluation of CTE stage with normal endoscopic appearance patients.

## eP114 POLYP EXCISION RATES POST-COVID-19: PERSONAL PROTECTIVE EQUIPMENT DOES NOT IMPAIR PERFORMANCE

**Authors** Matthews T<sup>1</sup>, Breslin N<sup>1</sup>, McNamara D<sup>1</sup>, O'Connor A<sup>1</sup>, Sarah O<sup>1</sup>, Ryan B<sup>1</sup>

**Institute** 1 Tallaght University Hospital, Gastroenterology, Dublin, Ireland

**DOI** 10.1055/s-0041-1724612

**Citation** Matthews T<sup>1</sup>, Breslin N<sup>1</sup>, McNamara D et al. eP114 POLYP EXCISION RATES POST-COVID-19: PERSONAL PROTECTIVE EQUIPMENT DOES NOT IMPAIR PERFORMANCE. *Endoscopy* 2021; 53: S133.

**Aims** The UK JAG on GI Endoscopy's minimum standard for polyp detection rates (PDR) in colonoscopy is 15%. The COVID-19 pandemic precipitated the use of restrictive personal protective equipment (PPE) which might reduce dexterity and decrease PDRs. We audited our polyp excision rates both prior to and post the COVID-19 pandemic in order to assess whether restrictive PPE led to a diminution therein.

**Methods** Our endoscopy database was queried for all colonoscopies performed between 01/01/2014 and 29/02/2020 (Pre-COVID-19, n=18,231) and between 01/03/2020 and 02/09/2020 (Post-COVID-19, n=825) and subsequently irrevocably anonymised.

A polyp excision rate (PER) was calculated for each period as a proxy for PDR. A comparative odds ratio was calculated.

An ordinary least squares (OLS) regression, using number of polyps excised as the dependent variable and procedure in the post-COVID-19 period as a primary explanatory variable, was performed. The regression was controlled for age, male gender and procedure coded as therapeutic (as opposed to diagnostic).

**Results** 4,346 and 209 patients had at least one polyp excised in the pre-COVID-19 (PER 23.8%) and post-COVID-19 (PER 25.3%) periods respectively. Odds ratio 1.08 (95%CI: 0.92, 1.27).

OLS regression established positive relationships between number of polyps excised and age (0.004, 95%CI: 0.003, 0.005), male gender (0.10, 95%CI: 0.07, 0.13) and procedure coded as therapeutic (1.75, 95%CI: 1.71, 1.78). It

demonstrated no significant relationship between procedure in the post-COVID-19 period (-0.003, 95%CI: -0.07, 0.07) and number of polyps excised.

**Conclusions** Odds ratios comparing PERs and an OLS regression analysing number of polyps excised failed to demonstrate any significant difference between the pre-COVID-19 and post-COVID-19 eras.

### eP115 IMPACT OF NOISE ON TOLERANCE AND QUALITY OF UPPER DIGESTIVE ENDOSCOPY

**Authors** Linhares M<sup>1</sup>, Ramos D<sup>1</sup>, Pereira F<sup>1</sup>, Pinto J<sup>1</sup>, Caldeira A<sup>1</sup>, Tristan J<sup>1</sup>, Pereira E<sup>1</sup>, Sousa R<sup>1</sup>, Banhudo A<sup>1</sup>

**Institute** 1 Amato Lusitano Hospital, Gastroenterology, Castelo Branco, Portugal

**DOI** 10.1055/s-0041-1724613

**Citation** Linhares M, Ramos D, Pereira F et al. eP115 IMPACT OF NOISE ON TOLERANCE AND QUALITY OF UPPER DIGESTIVE ENDOSCOPY. *Endoscopy* 2021; 53: S134.

**Aims** At our department, upper digestive endoscopy is performed, mostly, without sedatives administration. So, the patient's collaboration is necessary. The aim of this work was to assess the impact of noise during upper endoscopy performing on tolerance and quality (examination time) procedure.

**Methods** Prospective study, between December 2019 and March 2020, included outpatients' procedures. Uncollaborative patients or procedures with sedatives administration were excluded. The noise in the room and the examination time were measured with a decibel meter and stopwatch, respectively.

Tolerance assessment included: intubation difficulty, gastric insufflation suitability and patient discomfort. After procedure, an inquiry was applied to assess the patient's opinion regarding noise (using a reference scale) and its impact on collaboration during the exam.

**Results** Were included 63 patients; 50.8% female; age 62.32 ± 15.05 years. 47.6% previous anxiety, in 31.7% it was the first upper digestive endoscopy and 55.6% considered the exam more satisfactory than expected. One third did not tolerate the exam (4.8% difficult intubation; 27% global discomfort; 22.2% inadequate gastric insufflation); average time 6:51 ± 3 min. Regarding noise, 47.32 ± 5.83 decibels; 7.9% rated the exam room as noisy, but none attributed this to the exam's tolerance.

The noise in the room for non-tolerant patients was slightly higher than in the room for tolerant patients, despite not being statistically significant (mean dB 47.38 vs 47.19,  $p=0.904$ ). Patients do not have a perception of noise during endoscopy ( $\chi^2=8,341$ ,  $p=0.596$ ).

The noise had a negative impact on the duration of the endoscopy ( $r=-0.162$ ,  $p=0.205$ ).

**Conclusions** The tolerance and quality (time dependent) of the upper digestive endoscopy were negatively influenced by the increase in noise, although there was no statistical significance. More studies are needed to better assess the impact of noise on endoscopic quality.

### eP116 IMPACT OF TAKING BIOPSIES IN MACROSCOPICALLY NORMAL ENDOSCOPIES ON THE NHS - IS THERE INTER-OPERATOR VARIABILITY AND NEED FOR STRINGENT GUIDELINES AND TRAINING?

**Authors** Cianci N<sup>1</sup>, Varghese B<sup>2</sup>, Sreedharan A<sup>3</sup>, Saha S<sup>3</sup>, Khanna A<sup>4,5,6</sup>, Mandal A<sup>3</sup>

**Institute** 1 University of Nottingham, Nottingham, United Kingdom; 2 Queen's Medical Centre, Nottingham, United Kingdom; 3 United Lincolnshire Hospitals NHS Trust, Lincoln, United Kingdom; 4 Kings College Hospital, Institute of Liver Science, London, United Kingdom; 5 Queen Elizabeth Hospital, Liver Unit, Birmingham, United Kingdom; 6 Newcastle University, Institute of Cellular Medicine, Newcastle, United Kingdom

**DOI** 10.1055/s-0041-1724614

**Citation** Cianci N, Varghese B, Sreedharan A et al. eP116 IMPACT OF TAKING

BIOPSIES IN MACROSCOPICALLY NORMAL ENDOSCOPIES ON THE NHS - IS THERE INTER-OPERATOR VARIABILITY AND NEED FOR STRINGENT GUIDELINES AND TRAINING?. *Endoscopy* 2021; 53: S134.

**Aims** Numerous studies have questioned the value of taking biopsies in macroscopically-normal mucosa. Inappropriate biopsies increase financial and time pressures on the increasingly-strained endoscopy, pathology and NHS services. We hypothesized that non-physician endoscopists have greater uptake on performing biopsies in macroscopically normal endoscopies.

**Methods** We did a retrospective study of diagnostic gastroscopies and colonoscopies performed across 3 district-general hospitals (January-November 2018) in United Lincolnshire Hospitals NHS Trust. Endoscopic reports were examined for age, sex, indication, endoscopic diagnosis, biopsies taken (yes/no), and operator (gastroenterologist/surgeon/nurse endoscopist [NE]). We classified 'biopsy not indicated' when mucosa was described as 'normal' for indications of anaemia, rectal bleeding, weight-loss in colonoscopies, and dyspepsia, vomiting and abdominal pain in gastroscopies.

**Results** A total of 326 gastroscopies and 355 colonoscopies were included. 170 procedures fulfilled the 'biopsy not indicated' classification, of which 59% had multiple biopsies taken. Biopsy rates among gastroenterologists, surgeons, and NEs in 'biopsy not indicated' were 53% (39/73), 60% (42/70) and 70% (19/27) respectively. Using Chi-square, there was no statistically significant difference between various groups: surgeons and NEs ( $p=0.34$ ), surgeons and gastroenterologists ( $p=0.42$ ), and gastroenterologists and NEs ( $p=0.12$ ). This rejects our hypothesis.

**Conclusions** Our study showed that a significant number of biopsies are performed without good indication, with no significant inter-operator variability. Both British Society of Gastroenterology and National Institute for Health and Care Excellence have published guidance on when biopsy is indicated, but there are few high-level recommendations on when not to biopsy. Findings from our study mandate development of such guidance, followed by training of all endoscopists and UK-wide audit of local practice to ensure compliance with guidelines. The implementation of such strategies has been proven effective at a local level, and if adopted nationally can significantly optimise financial burden of endoscopy services on the NHS.

### eP118 SINGLE-OPERATOR LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION WITH AN UNTUTORED, PREVALENCE-BASED APPROACH IN A NON-ACADEMIC GREEK HOSPITAL

**Authors** Mavrogenis G<sup>1</sup>, Bazerbachi F<sup>2</sup>, Tsevas I<sup>1</sup>, Zachariadis D<sup>1</sup>

**Institute** 1 Mediterraneo Hospital, Gastroenterology, Athens, Greece; 2 Massachusetts General Hospital, Gastroenterology, Boston, United States

**DOI** 10.1055/s-0041-1724615

**Citation** Mavrogenis G, Bazerbachi F, Tsevas I et al. eP118 SINGLE-OPERATOR LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION WITH AN UNTUTORED, PREVALENCE-BASED APPROACH IN A NON-ACADEMIC GREEK HOSPITAL. *Endoscopy* 2021; 53: S134.

**Aims** The aim of this report is to present a real-life experience of practicing ESD without tutoring in a private medium sized non-academic hospital in Greece by a junior endoscopist who was trained exclusively in Europe.

**Methods** 60 ESD cases were performed in 57 patients (31 males) with a mean age of 65 years (36-86) for lesions of the esophagus (3), stomach (24), duodenum (1), colon (12) and rectum (20). 20 lesions were subepithelial. Propofol sedation was given in 16 rectal cases and general anesthesia in the rest. All procedures were performed by a single junior endoscopist without tutoring, after an observation period of 1 year in an academic hospital and performance of 20 animal cases.

**Results** Histology showed G1 NET (7), other submucosal tumors (13), gastric cancer or high-grade dysplasia (5), gastric low-grade dysplasia/hyperplastic polyp (5), colorectal cancer or high-grade dysplasia (8), colorectal low-grade dysplasia (21), early esophageal neoplasia (1). The mean diameter of the

specimens was 3.7 cm (0.7-9.8). The mean duration was 2,2 hours (0.20-10). En block resection was achieved in 58/60 (96 %) lesions and R0 resection in 54/60 cases (90%). Postoperative bleeding occurred in 3 cases (5%) and was managed endoscopically. Perforation occurred in 5 cases (8%). However, only two cases needed surgery with laparoscopic drainage. The mean hospitalisation lasted 1,3 days (0-3). The mean dissection speed was steady at 3,36 cm<sup>2</sup>/h for the first 20 cases and then it was progressively improved, reaching 11,4 cm<sup>2</sup>/h after 32 cases and then 14.5 cm<sup>2</sup>/h in the last five cases.

**Conclusions** ESD was safely and effectively performed by a junior ESD endoscopist without mentoring in a private non-academic hospital. At least 20 cases of ESD were needed to notice a steady improvement in the dissection speed and at least 30 cases to reach a satisfactory speed of >9 cm<sup>2</sup>/h.

## eP119 WEEKEND AND EVENING PLANNED COLONOSCOPY ACTIVITY - A SAFE AND EFFECTIVE WAY TO MEET DEMANDS

**Authors** Afify A<sup>1,2</sup>, Abo-Elazm O<sup>3</sup>, Thoufeeq M<sup>1</sup>

**Institute** 1 Sheffield Teaching Hospitals, Endoscopy unit, Sheffield, United Kingdom; 2 National Hepatology and Tropical Medicine Research Institute, Gastroenterology and Hepatology, Cairo, Egypt; 3 National Cancer Institute, Biostatistics and Cancer Epidemiology, Cairo, Egypt

**DOI** 10.1055/s-0041-1724616

**Citation** Afify A, Abo-Elazm O, Thoufeeq M eP119 WEEKEND AND EVENING PLANNED COLONOSCOPY ACTIVITY - A SAFE AND EFFECTIVE WAY TO MEET DEMANDS. *Endoscopy* 2021; 53: S135.

**Aims** Our aim was to investigate the quality of colonoscopies carried out during evening and Saturday lists in our unit and compare against JAG standards of quality for colonoscopies. Other factors that may affect the KPIs such as the endoscopists experience and bowel preparation were also analysed.

**Methods** We retrospectively collected and analysed demographical and procedure related data for non- screening colonoscopies performed between January 2016 and November 2018. Evenings and Saturdays were defined as out of hour period. We compared the outcomes of the procedures done in these against the working hours of the weekdays. We also wanted to explore if the outcomes were different among certain endoscopists.

**Results** There were a total of 17634 colonoscopies that were carried out, 56.9% (n = 10041) of the patients were less than 70 years. Key Performance Indicators (KPIs) of weekdays, evening and Saturdays' colonoscopies regarding the CIR and ADR met the JAG standards as both were above 93% and 24% respectively. Advanced colonoscopists had better KPIs when compared to the non-advanced colonoscopists with CIR at 97.6% vs 93.2% and ADR at 40.8% vs 26% respectively.

**Conclusions** JAG standards were maintained during colonoscopies done on weekdays, evening and Saturdays. Advanced colonoscopists had higher CIR and ADRs.

## eP120 QUALITY CRITERIA IN UPPER GASTROINTESTINAL ENDOSCOPY - CAN DEEP SEDATION INFLUENCE IT?

**Authors** Correia C<sup>1</sup>, Almeida N<sup>1</sup>, Sant'Anna M<sup>1</sup>, Macedo C<sup>1</sup>, Gregório C<sup>1</sup>, Figueiredo P<sup>1</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724617

**Citation** Correia C, Almeida N, Sant'Anna M et al. eP120 QUALITY CRITERIA IN UPPER GASTROINTESTINAL ENDOSCOPY - CAN DEEP SEDATION INFLUENCE IT?. *Endoscopy* 2021; 53: S135.

**Aims** In 2016, quality criteria for upper *gastrointestinal* endoscopy (UGE) were published by ESGE/UEG, but the problem of sedation was not addressed. However, it is known that the patient's tolerance level is variable, assuming that some criteria may not be reached in non-sedated patients. The present research aims to determine whether the use of deep sedation influences the fulfillment of the quality criteria proposed by ESGE.

**Methods: Patients and methods** A preliminary prospective analysis of compliance with the ESGE quality criteria was carried out on 118 patients previously scheduled to perform diagnostic EDA, who were allocated to 2 groups, according to the request made by the attending physician: Group A - without sedation (n = 63; female-57.1%; mean age-59.7 ± 17.6 years); Group B - with deep sedation under propofol (n = 55; female-67.3%; mean age-62.8 ± 15.1 years).

**Results** Comparing the groups without and with sedation, there were statistically significance differences in the following parameters: the average duration of the EDA (6.7 ± 3.8 vs. 8.3 ± 2.6 minutes); capturing images of the main anatomical sites/changes found (79% vs. 98.2%); gastric biopsies, when indicated (61.3% vs. 89.1%).

EDA was considered to be complete in 74.6% vs. 98.2% (p <0.001) in group A and B, respectively, with intolerance being the main cause of interruption of the procedure.

The median level of patient satisfaction, determined based on a numerical scale (0 not satisfied - 10 very satisfied), was 6 in group A and 9 in group B (p <0.001).

**Conclusions** The preliminary results of this study seem to demonstrate the use of deep sedation is essential to perform a quality EDA in the way it is defined by ESGE/UEG. In addition, it appears that 25% of procedures without sedation are incomplete, which can lead to false negatives and/or repetition of EDA.

## eP121 MAN VS MACHINE – AUTOMATED COLONOSCOPY WITHDRAWAL TIME CALCULATION VS ENDOSCOPIST SELF-REPORT

**Authors** Bhandari M<sup>1,2</sup>, Hlaing L<sup>3</sup>, Phan H<sup>2</sup>, Borca F<sup>2,3</sup>, Cowin K<sup>3</sup>, Beegan R<sup>3</sup>, Geeson J<sup>3</sup>, Batchelor J<sup>2</sup>, Nouraei R<sup>2</sup>, Cable D<sup>3</sup>, Rahman I<sup>1,3</sup>, Stammers M<sup>1,2,3</sup>

**Institute** 1 University Hospital Southampton, Gastroenterology, Southampton, United Kingdom; 2 University of Southampton, Clinical Informatics Research Unit, Southampton, United Kingdom; 3 University Hospital Southampton, UHS Digital, Southampton, United Kingdom

**DOI** 10.1055/s-0041-1724618

**Citation** Bhandari M, Hlaing L, Phan H et al. eP121 MAN VS MACHINE – AUTOMATED COLONOSCOPY WITHDRAWAL TIME CALCULATION VS ENDOSCOPIST SELF-REPORT. *Endoscopy* 2021; 53: S135.

**Aims** Colonoscopy electronic patient record (EPR) reporting systems are generally reliant on endoscopist self-report to accurately determine procedure withdrawal time – a key metric of high-quality colonoscopy. As the accuracy of self-report vs image-linked timestamping is presently unknown our aim was to investigate this.

**Methods** All colonoscopy timestamp data 2000-2020 within the HICSS (Hospital Integrated Clinical Support System) database was assembled alongside procedure polyp count. Timestamps of interest included last caecal intubation image, endoscopist self-reported caecal-intubation time and procedure end-time. Empirical cumulative distribution functions (ECDFs) and interquartile percentiles were plotted for each scenario, both with and without polyps and *student's t-test* used to confirm significance. *Pearson-R* correlations were calculated between polyp number and procedure withdrawal time.

**Results** 24,367 colonoscopies were performed within the specified time period. Of these 16,093(66%) had caecal-intubation image timestamps recorded. Mean 'image-reported' extubation time was 12.9 minutes vs 14.1 minutes by self-report, (p<0.01). Vs image-report at the 50<sup>th</sup> percentile endoscopists over-estimated withdrawal-time by a minute at self-report. Polyps were extremely strongly correlated to withdrawal time (*Pearson-R*-0.97) with more than three polyps at procedure associated with a mean withdrawal time >30 minutes(+/-1-95%CI).

To eliminate any polyp-bias the analysis was repeated on 9960(61.9%) procedures without polyps. Here mean image-linked withdrawal time was 8.8 minutes vs 10.8 minutes by self-report, (p<0.01). In this setting across the board, endoscopists significantly over-estimated withdrawal time by on average 2 minutes as illustrated in ► **Tab. 1**.



**Conclusions** Endoscopists significantly overestimate colonoscopy withdrawal time at post-procedure self-report. We, therefore, recommend that all endoscopy EPR systems switch to using proof of caecal-intubation image time-stamps by default in the future to minimise error in withdrawal-time calculation. Polyps substantially increase withdrawal-time and this should where possible be factored into endoscopy scheduling decisions.

► **Tab. 1** ECDF Percentile withdrawal times across groups.

ECDF Percentile	Image-Linked Withdrawal Time (incl Polyps) [minutes]	Self-Reported Withdrawal Time (incl Polyps) [minutes]	Image-Linked Withdrawal Time (excl Polyps) [minutes]	Self-Reported Withdrawal Time (excl Polyps) [minutes]
25th	7	9	6	8
50th	10	11	8	10
75th	15	16	11	13

## eP122 SURVEY-BASED INVESTIGATION OF POTENTIAL ORGANISATIONAL ISSUES ASSOCIATED WITH REUSABLE COLONOSCOPES AND GASTROSCOPES IN EUROPE

**Authors** Larsen S<sup>1</sup>, Klinten Ockert L<sup>1</sup>, Kryger Rindorf D<sup>1</sup>, Adamsen S<sup>1,2</sup>  
**Institute** 1 Ambu A/S, Ballerup, Denmark; 2 Bispebjerg Hospital, University of Copenhagen, Digestive Disease Center, Copenhagen, Denmark  
**DOI** 10.1055/s-0041-1724619

**Citation** Larsen S, Klinten Ockert L, Kryger Rindorf D et al. eP122 SURVEY-BASED INVESTIGATION OF POTENTIAL ORGANISATIONAL ISSUES ASSOCIATED WITH REUSABLE COLONOSCOPES AND GASTROSCOPES IN EUROPE. *Endoscopy* 2021; 53: S136.

**Aims** Disposable endoscopes are entering the market as an attempt to ease potential availability, portability, and degradation issues associated with reusable colonoscopes and gastroscopes (rCG). We aimed to identify potential organisational issues associated with rCG.

**Methods** Between 24 September 2020 and 12 October 2020, a total of 459 gastrointestinal (GI) endoscopists from the UK (n = 100), France (n = 90), Germany (n = 72), Italy (n = 99) and Spain (n = 99) answered an electronic survey about potential organisational issues they experience at their endoscopy unit. Data were collected using QuestionPro and analysed using Microsoft Excel.

**Results** Amongst the five European countries 13% and 14% of the respondents "often" had to wait for a gastroscop and colonoscope, respectively, to become available before a procedure. Reportedly, 1% "always" had to wait for a rCG to become available. Availability issues were predominant in Italy and Spain where 3% of the respondent "always" had to wait for a rCG to become available. Only 5% "never" experienced availability issues. High-volume centres were not significantly more likely to experience availability issues (p=0.2677). Eighteen percent of the respondents "often" experienced degradation of their rCG (20% for colonoscopes and 16% for gastroscopes). Only 1% "never" experienced issues with rCG degrading. There were no significant differences between high-volume centres and the experience of endoscope degradation (p=0.8682). Two percent "always" experienced portability issues associated with colonoscopes, and 38% answered that they "sometimes" experienced portability issues for both rCG.

**Conclusions** Our findings suggest that availability, portability and degradation issues are often experienced in every-day practise at the endoscopy units. Degradation issues were most prominent as 18% of the respondents often had experienced this issue, and 1% always experienced issues due to degradation when conducting procedures. Degradation issues were most common for colonoscopes compared to gastroscopes. High volume centres were not significantly more likely to experience availability- and degradation issues.

## eP123 IMPACT OF COVID-19 PANDEMIC ON ENDOSCOPY ACCESS OF SYMPTOMATIC UPPER GASTROINTESTINAL BLEEDS (UGIB)

**Authors** Fagan O<sup>1</sup>, Corcoran N<sup>2</sup>, Van Der Mewre K<sup>1</sup>, Hurley O'Dwyer R<sup>2</sup>, Armstrong P<sup>1</sup>, Crosnoi D<sup>1</sup>, Parihar V<sup>1</sup>, Steele C<sup>1</sup>, Miranda J<sup>2</sup>  
**Institute** 1 Letterkenny University Hospital, Gastroenterology, Donegal, Ireland; 2 Letterkenny University Hospital, General Medicine, Donegal, Ireland  
**DOI** 10.1055/s-0041-1724620

**Citation** Fagan O, Corcoran N, Van Der Mewre K et al. eP123 IMPACT OF COVID-19 PANDEMIC ON ENDOSCOPY ACCESS OF SYMPTOMATIC UPPER GASTROINTESTINAL BLEEDS (UGIB). *Endoscopy* 2021; 53: S136.

**Aims** To compare time-to-endoscopy in admissions with UGIB during COVID restrictions (March-June 2020) with those in Pre-COVID- times (March-June 2019). To assess outcomes in patients admitted with UGIB in non-covid-19 and covid-19 times.

**Methods** Retrospective HIPE coding from an academic teaching hospital over 12 months 2019-20 was used. All patients admitted with codes hematemesis, UGIB etc. were included, with data obtained from their electronic health records.

**Results** Admissions with UGIB March-June 2019 were compared with those of March-June 2020: 21 patients (12-female) underwent gastroscopy in first arm compared to 25 patients (12-female) in the second arm. Average time to endoscopy during March-June 2020 (COVID-19 pandemic restrictions) was improved at 19.9 h versus 45.57 h during March-June 2019 (p-value 0.003). Average GBS score at 6.9 was higher but not significant in admissions during COVID restrictions compared with 4.9 in admissions pre-COVID (p-value 0.31).

**Conclusions** Our study reveals no negative impact of COVID-19 pandemic on access to endoscopy in a cohort of symptomatic upper GI bleed with higher GBS; rather, we demonstrated improved times. This study further validates the use of GBS in clinical setting.

## eP124 THE POLYP RECALL PROFORMA (PREP) - A SIMPLE INTERVENTION TO IMPROVE REPORT WRITING AT COLONOSCOPY

**Authors** Materacki L<sup>1</sup>, Murphy A<sup>2</sup>, Anderson J<sup>2</sup>  
**Institute** 1 North Bristol NHS Foundation Trust, Gastroenterology, Bristol, United Kingdom; 2 Gloucestershire Hospitals NHS Foundation Trust, Gastroenterology, Cheltenham, United Kingdom  
**DOI** 10.1055/s-0041-1724621

**Citation** Materacki L, Murphy A, Anderson J eP124 THE POLYP RECALL PROFORMA (PREP) - A SIMPLE INTERVENTION TO IMPROVE REPORT WRITING AT COLONOSCOPY. *Endoscopy* 2021; 53: S136.

**Aims** The accurate reporting of polyps and polypectomy requires the recall of multiple details of polyp characteristics and resection technique. Human memory has a limited capacity and can be compromised when subjected to increasing cognitive load leading to recall inaccuracy and incorrect report writing. Endoscopists may seek support from others present; who may be unprepared to recall all relevant details.

We surveyed local endoscopists and endoscopy assistants to explore difficulties with polyp recall and to determine whether a Polyp REcall Proforma (PREP) may improve report writing in colonoscopy.

**Methods** 20 local colonoscopists and 60 endoscopy assistants were surveyed using the online platforms 'SurveyMonkey' and 'Google Forms' respectively.

Participants were asked about difficulties with polyp/polypectomy recall, documentation practice and whether they thought a proforma to aid polyp/polypectomy recall would improve report writing accuracy.

**Results** 13/20 colonoscopists and 28/60 endoscopy assistants completed the survey. 92% of colonoscopists reported difficulty recalling polyp/polypectomy detail, generally when >4 polyps were identified, and all had sought help from an assistant.

82% of endoscopy assistants reported always recording detail of multiple polypectomy (>4) but 57% never or rarely recorded when polyps were visualised but left in situ. At polypectomy assistants commonly recorded polyp site (100%), retrieval status (93%), lift (89%) and polypectomy technique (86%). Few assistants recorded polyp size (17.9%), en bloc or piecemeal resection (10.7%) and polyp morphology despite most recognising that these details are desirable. The information recalled by the assistant was considered usually inadequate by 69% of colonoscopists.

92% of colonoscopists and 100% of endoscopy assistants felt a formal PREP would improve the accuracy of report writing at colonoscopy.

**Conclusions** This study highlights a common problem, recalling multiple polyps/polypectomy at colonoscopy. We have developed the PREP as a simple, acceptable intervention to overcome some of these difficulties with view to improving the accuracy of report writing at colonoscopy.

## eP125 PCCRC CASES IDENTIFIED USING POPULATION-BASED DATA MAY BE RE-CLASSIFIED AS DETECTED CANCERS WHEN LOCAL DATA IS USED TO PERFORM A ROOT CAUSE ANALYSIS

**Authors** Ahmad A<sup>1</sup>, Humphries A<sup>1</sup>, Dhillon A<sup>1</sup>, Kabir M<sup>1</sup>, Saunders B<sup>1</sup>, Wilson A<sup>1</sup>, Thomas-Gibson S<sup>1</sup>

**Institute** 1 Wolfson Unit for Endoscopy, Imperial College London, London, United Kingdom

**DOI** 10.1055/s-0041-1724622

**Citation** Ahmad A<sup>1</sup>, Humphries A<sup>1</sup>, Dhillon A et al. eP125 PCCRC CASES IDENTIFIED USING POPULATION-BASED DATA MAY BE RE-CLASSIFIED AS DETECTED CANCERS WHEN LOCAL DATA IS USED TO PERFORM A ROOT CAUSE ANALYSIS. *Endoscopy* 2021; 53: S137.

**Aims** A recent population-based cohort study showed variation in post-colonoscopy colorectal cancer (PCCRC) rates across providers. Aim: to analyse PCCRC cases using local data in order to determine the cause and evaluate whether clinician and/or patient factors are primarily responsible.

**Methods** A retrospective root cause analysis was performed, in accordance with World Endoscopy Organisation recommendations, on a sample of 52 cases reported as PCCRCs from a national dataset (CORECT-R) during 2005-2013. 6 cases were excluded (3 missing data, 3 duplicates).

First, we confirmed if the case was a true PCCRC and if so, the most plausible explanation. We then evaluated whether responsibility for the PCCRC was primarily due to clinician and/or patient factors.

**Results** Of 46 included cases, 35 were confirmed as PCCRCs. 11 cases did not meet the PCCRC definition (8 detected cancers, 3 data errors).

The mean age for PCCRCs was 68 years old (range 39-93). The primary endoscopist was an independent non-consultant endoscopist, consultant, or nurse endoscopist in 51.4% (18/35), 45.7% (16/35), and 2.9% (1/35) of cases respectively. Caecal intubation was reported in 94.3% (33/35) of cases with adequate caecal photodocumentation in 54.3% (19/35) of cases (reviewed by two blinded endoscopists). Rectal retroflexion was performed in 42.9% (15/35) of cases.

Primary responsibility for the PCCRC cases was in 74.3% (26/35) the clinician, 11.4% (4/35) the patient (surgery refused) and 14.3% (5/35) both clinician and patient.

**Conclusions** Local data helps confirm and evaluate PCCRC cases identified from national datasets. Clinician-factors were responsible for the majority of PCCRC

cases. Lack of caecal and rectal retroflexion photodocumentation occurred frequently in PCCRC cases and may be a marker of suboptimal examination. In a significant proportion of cases where a lesion was detected patients refused surgery which ultimately led to the PCCRC.

**► Table 1** Breakdown of most plausible explanation for confirmed PCCRC cases and primary responsibility

Most plausible explanation	Clinician responsible	Clinician and Patient responsible	Patient responsible	Total
Possible missed lesion, prior examination adequate	4	0	0	4 (11.4%)
Possible missed lesion, prior examination negative but inadequate	12	1	0	13 (37.1%)
Detected lesion, not resected	4	4	4	12 (34.3%)
Likely incomplete resection of previously identified lesion	6	0	0	6 (17.1%)

## eP126 QUALITY IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: UTILITY OF A PROSPECTIVE DATABASE TO MONITOR ADHERENCE TO QUALITY INDICATORS

**Authors** de Sousa Damião F<sup>1</sup>, Noronha Ferreira C<sup>1</sup>, Moura M<sup>1</sup>, Freitas C<sup>1</sup>, Costa P<sup>1</sup>, Rios Crespo R<sup>1</sup>, Rita Carvalho J<sup>1</sup>, Palma R<sup>1</sup>, Marques A<sup>1</sup>, Almeida A<sup>2</sup>, Carrilho Ribeiro L<sup>1,3</sup>, Tato Marinho R<sup>1,3</sup>

**Institute** 1 Serviço de Gastrenterologia e Hepatologia, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal; 2 Serviço de Anestesiologia, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal; 3 Faculdade de Medicina da Universidade de Lisboa, Lisbon, Portugal

**DOI** 10.1055/s-0041-1724623

**Citation** de Sousa Damião F, Noronha Ferreira C, Moura M et al. eP126 QUALITY IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: UTILITY OF A PROSPECTIVE DATABASE TO MONITOR ADHERENCE TO QUALITY INDICATORS. *Endoscopy* 2021; 53: S137.

**Aims** To evaluate the technical performance and adherence to quality indicators in ERCP practice in a tertiary referral center.

**Methods** ERCPs performed between October 2016 and July 2019 registered in a prospective database at a tertiary referral centre were analysed. From 1103 procedures initially evaluated, 57 were excluded for the following reasons: age<18 years; incomplete procedure (gastrointestinal stenosis, food stasis, pre-procedure cardiovascular instability); post-surgery altered anatomy; refusal of informed consent. Final study sample included 1046 procedures. The technical performance was compared with priority quality indicators recommended by the American Society of Gastrointestinal Endoscopy(ASGE) and the European Society of Gastrointestinal Endoscopy(ESGE).

**Results** Median age was 75.7(18 – 100) years with 546(51.2%) patients being males. Indications for ERCP were: choledocholithiasis in 587(56.1%)

procedures, malignant biliary stenosis in 306(29.3%), benign biliary stenosis in 64(6.1%), biliary fistula in 42(4%), acute gall stone pancreatitis in 26(2.5%), pancreatic fistula in 6(0.6%), ampullary neoplasm in 6(0.6%), removal of bile duct stent in 5(0.5%) and pancreatic stenosis in 4(0.4%). Native papilla was present in 716(68.5%) procedures. Native papilla successful cannulation rate was 91.3%(639 procedures). The incidence of post-ERCP adverse events was: post-ERCP pancreatitis in 2.7%(28 procedures), bleeding in 0.8%(8 procedures), cholangitis in 0.7%(7 procedures) and perforation in 0.5%(5 procedures). The technical performance indicators of ERCPs compared to those recommended by ASGE and ESGE are presented in ► **table 1**. The following variables were performed in 100% of procedures: clearance of common bile duct stones; stent placement in sub-hilar biliary strictures.

**Conclusions** The monitoring of adherence to quality indicators with a prospective database allows detailed analysis of performance indicators in ERCP. This may have contributed to the adequate patient selection, good technical outcomes and low incidence of adverse outcomes.

► **Table 1** Evaluation of ERCP technical performance measures compared to priority quality indicators recommended by ASGE and ESGE

	ASGE	ESGE	Technical performance
1. Appropriate indication for ERCP	> 90 %	N/A	100 %
2. Adequate antibiotic prophylaxis before ERCP	N/A	≥ 90 %	Not recorded
3. Native papilla bile duct cannulation rate	≥ 90 %	> 90 % (>95 % ideal)	91.3 %
4. Extraction rate of <1cm common bile ducts stones	≥ 90 %	> 90 %	100 %
5. Successful biliary stent placement rate	≥ 90 %	> 95 %	100 %
6. Post-ERCP pancreatitis rate	N/A	<10 % (<5 % ideal)	2.7 %

## eP127 AN AUDIT ON THE INTERVAL CANCER RATES IN LOUTH COUNTY HOSPITAL

**Authors** Mohamed A<sup>1</sup>, Caroline C<sup>1</sup>, Vakeesan B<sup>1,1</sup>, Morris J<sup>1</sup>, Ismail S<sup>1</sup>, Sengupta S<sup>1</sup>, Walshe M<sup>1</sup>, Keohane J<sup>1</sup>

**Institute** 1 Our Lady of Lourdes Hospital, Gastroenterology, Drogheda, Ireland DOI 10.1055/s-0041-1724624

**Citation** Mohamed A, Caroline C, Vakeesan B et al. eP127 AN AUDIT ON THE INTERVAL CANCER RATES IN LOUTH COUNTY HOSPITAL. *Endoscopy* 2021; 53: S138.

**Aims** The aim of this audit was to assess the interval colorectal cancer rate for Louth County Hospital (LCH).

**Methods** Using EndoRaad, full colonoscopies, and sigmoidoscopies (screening/symptomatic) performed in LCH, a JAG accredited site, from 2017 to 2019 on which a 'tumour' was identified were included. Histology records were reviewed to confirm malignancy. Electronic records were used to identify

lower GI endoscopies performed in our unit within three years of the cancer diagnosis. The insertion point of prior endoscopies was taken into account.

**Results** A 'tumour' was identified on 96 colonoscopies/sigmoidoscopies in LCH. 69 of these procedures were associated with a diagnosis of CRC. 4.35% (n=3) of patients had undergone a lower GI endoscopy in LCH within 3 years of their cancer diagnosis. The average interval between negative endoscopy and cancer diagnosis was 24.67 months. In all three cases, the point of insertion on the initial scope was proximal to the site of subsequent malignancy. CT Colon was performed in 2 of the 3 cases; occurring 21 and 72 days after negative endoscopy. Both CT Colon studies were negative; identifying no colonic mucosal lesion >6mm.

**Conclusions** The interval cancer rate for LCH is in keeping with rates published internationally and by the national GI endoscopy working group.

## eP128 THE PREDICTION OF INADEQUATE COLON CAPSULE CLEANSING: A COHORT SELECTION GUIDED BY CC-CLEAR

**Authors** de Sousa Magalhães R<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Moreira MJ<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Guimarães/Braga, Portugal DOI 10.1055/s-0041-1724625

**Citation** de Sousa Magalhães R, Boal Carvalho P, Rosa B et al. eP128 THE PREDICTION OF INADEQUATE COLON CAPSULE CLEANSING: A COHORT SELECTION GUIDED BY CC-CLEAR. *Endoscopy* 2021; 53: S138.

**Aims Introduction** In order to optimize the rate of adequate cleansing in colon capsule, it may be important to identify risk factors that can predict a sub-optimal colon preparation.

**Aim** To define predictive factors for inadequate bowel preparation in colon capsule, according to CC-CLEAR (Colon Capsule CLEansing Assessment and Report).

**Methods** Retrospective, single centre, cohort study. Patients' demographics, data, and quality of bowel preparation, according to CC-CLEAR, were collected retrospectively. A univariate analysis tested the association between covariables and the outcome, inadequate cleansing. The statistically significant variables were included in multivariable logistic binary regression and a ROC assessment was performed.

**Results** We included 133 consecutive colon capsules, from 2015 to 2020. Seventy-two percent were female, with a mean age of 65 years. The main indication for colon capsule was incomplete colonoscopy, in 94% of the cases. The colon capsules cleansing was graded as good or excellent in 53% of patients according to CC-CLEAR. Several variables presented statistical significance with an inadequate cleansing in the univariate analysis. The variables previous inadequate cleansing (OR 74.6 [11.70-475.77] p<0.001), chronic laxative (OR 35.72 [3.06-417.61] p=0.004), chronic antidepressant (OR 8.664 [2.08-36.03] p=0.003) and impaired mobility (OR 16.09 [1.89-136.91] p=0.01) were independently associated with the outcome inadequate cleansing, after adjusting for confoundment. The multivariate model including these variables displayed an excellent discriminative power (AUC ROC curve 0.954 [0.915-0.992] p<0.001).

**Conclusions** A previous inadequate cleansing, the use of chronic laxative and chronic antidepressant, and an impaired mobility are predictors of inadequate colon capsule cleansing, according to CC-CLEAR. These 4 predictors come together as a model enabling an accurate categorization of the patients at major risk, with an excellent discriminative power and performance, which seems essential in the selection of patients for optimization of the colon cleansing protocol.

## eP129 IS ABNORMAL RADIOLOGY A GOOD PREDICTOR OF ENDOSCOPIC FINDINGS?

**Authors** Adam M<sup>1</sup>, Conlon C<sup>1</sup>, Doing S<sup>1</sup>, Morris J<sup>1</sup>, Vankeesan B<sup>1</sup>, Ismail S<sup>1</sup>, Walshe M<sup>1</sup>, Sengupta S<sup>1</sup>, Keohane J<sup>1</sup>

**Institute** 1 Our Lady of Lourdes Hospital, Gastroenterology, Drogheda, Ireland  
**DOI** 10.1055/s-0041-1724626

**Citation** Adam M, Conlon C, Doing S et al. eP129 IS ABNORMAL RADIOLOGY A GOOD PREDICTOR OF ENDOSCOPIC FINDINGS?. *Endoscopy* 2021; 53: S139.

**Aims** The aims of this study were to assess the correlation between abnormal imaging and endoscopic findings.

**Methods** A retrospective descriptive study was performed. All patients referred with abnormal radiology as the indication for lower GI endoscopy in Louth County Hospital (LCH) between 2013 and August 2020 were included.

Data, including; patient demographics, the modality of imaging, results of imaging, indication for endoscopy, and results of endoscopy were collected using electronic patient records.

Endoscopic findings were compared with radiology reports.

**Results** A total of 209 lower GI endoscopies, (172 colonoscopies and 37 sigmoidoscopies) were performed in LCH between 2013 and August 2020 for the indication of abnormal radiology, 51% (n = 108) were male. The mean interval from imaging to colonoscopy was 86.3 days (Range 13-218 days). 81% (n = 170) of imaging modalities employed were CT scans. The mean interval from imaging to sigmoidoscopy was 128 days (range 11 days to 823 days). CT Colon accounted for 51% (n = 19) of the imaging modalities employed.

In Our patient cohort 71% of endoscopic findings correlated with radiology.

**Conclusions** The most common abnormality on radiology referred for lower GI endoscopy was diverticulitis. A tumour was identified endoscopically in one of these patients. No other suspicious endoscopic findings were detected. The need for endoscopy post an episode of uncomplicated diverticulitis without suspicious features is questionable. Current practice guidelines do not recommend routine endoscopy post uncomplicated diverticulitis. In some studies, the risk of advanced neoplasia post uncomplicated diverticulitis is equivalent to the risk of colorectal cancer in the general population.

59% of radiology findings suggestive of thickening, colitis, or strictures correlated with endoscopic findings. In the appropriate clinical context, not all patients with such features on radiology require endoscopic and histological diagnoses.

Further assessment is recommended to identify specific imaging abnormalities that benefit from endoscopy allowing appropriate use of our limited resources.

## eP130 RESULTS OF AN ENDOSCOPY SAFETY ATTITUDES QUESTIONNAIRE (ENDO-SAQ): A PILOT STUDY

**Authors** Ravindran S<sup>1</sup>, Healey C<sup>1</sup>, Marshall S<sup>2</sup>, Coleman M<sup>1</sup>, Ashrafian H<sup>3</sup>, Darzi A<sup>3</sup>, Thomas-Gibson S<sup>2</sup>

**Institute** 1 Joint Advisory Group on Gastrointestinal Endoscopy, London, United Kingdom; 2 St Mark's Hospital, Wolfson Unit for Endoscopy, London, United Kingdom; 3 Imperial College London, London, United Kingdom  
**DOI** 10.1055/s-0041-1724627

**Citation** Ravindran S, Healey C, Marshall S et al. eP130 RESULTS OF AN ENDOSCOPY SAFETY ATTITUDES QUESTIONNAIRE (ENDO-SAQ): A PILOT STUDY. *Endoscopy* 2021; 53: S139.

**Aims** Across healthcare, evidence has demonstrated the influence of safety culture on patient outcomes. We developed a novel tool to measure endoscopy safety culture - the Endoscopy Safety Attitudes Questionnaire (Endo-SAQ). Our aims were to assess the safety attitudes of our workforce and tool validity in a pilot study.

**Methods** The previously validated SAQ was adapted by the core research team to reflect endoscopy-specific content. An expert group was convened to undertake a rating exercise to assess content validity. Endo-SAQ has 6 domains: teamworking, safety climate, job satisfaction, stress recognition, perceptions of management and working conditions.

The Endo-SAQ was administered to the staff at a tertiary UK endoscopy unit. Outcome measures were mean domain scores, percentage of positive responses per domain, content validity indices (item (I-CVI) and scale (S-CVI)) and internal consistency (Cronbach's alpha). Statistical analysis included descriptive statistics, paired samples t test, one-way ANOVA and Kruskal-Wallis tests.

**Results** 61 participants completed the survey (completion rate 88.4%). All domains scores were over 60%, indicating a positive overall response across domains. The percentage of positive responses per domain varied, with 'perceptions of management' and 'working conditions' both scoring <40% (Table 1). This appears to be in line with the wider literature in medicine and surgery. On subgroup analysis, nurses scored 'job satisfaction' (p = 0.01), 'perceptions of management' (p = 0.002) and 'working conditions' (p = 0.004) significantly lower than endoscopists.

Five independent expert raters scored the Endo-SAQ for clarity and relevance. Four items had an I-CVI <0.78 resulting in question rewording. Overall, S-CVI was >0.90 indicating good content validity. All Endo-SAQ domains scored 'acceptable' or above for internal consistency.

**Conclusions** Endo-SAQ can detect safety attitudes and differences between groups. A national study is due to be undertaken utilising Endo-SAQ in addressing modifiable factors to support the workforce better.

Domain	Mean score (SD)	% positive responses
Teamworking	74.32 (20.75)	59.70
Safety climate	76.13 (16.16)	58.70
Job satisfaction	77.68 (19.07)	66.70
Stress recognition	73.51 (26.89)	66.70
Perceptions of management	64.35 (22.44)	33.90
Working conditions	66.78 (19.77)	38.70

## eP131 THE UK COLONOSCOPY WORKFORCE: ANALYSIS USING THE NATIONAL ENDOSCOPY DATABASE (NED)

**Authors** Beaton D<sup>1</sup>, Rogers P<sup>2</sup>, Sharp L<sup>3</sup>, Broughton R<sup>4</sup>, Rutter M<sup>1,3</sup>

**Institute** 1 North Tees and Hartlepool NHS Foundation Trust, Gastroenterology, Stockton on Tees, United Kingdom; 2 Weblogik Limited, Ipswich, United Kingdom; 3 Newcastle University, Population Health Sciences Institute, Newcastle Upon Tyne, United Kingdom; 4 Royal College of Physicians, London, United Kingdom  
**DOI** 10.1055/s-0041-1724628

**Citation** Beaton D, Rogers P, Sharp L et al. eP131 THE UK COLONOSCOPY WORKFORCE: ANALYSIS USING THE NATIONAL ENDOSCOPY DATABASE (NED). *Endoscopy* 2021; 53: S139.

**Aims** The British Society of Gastroenterology (BSG) recommends colonoscopists perform at least 100 procedures annually to maintain competence. The National Endoscopy Database (NED) is a central database which uploads endoscopy procedural data in real time; over 80% of UK endoscopy sites now upload to NED. This study aimed to analyse the UK colonoscopy workforce, identifying the proportion of colonoscopists performing fewer than 100 colonoscopies annually and their contribution to overall colonoscopy activity.

**Methods** All colonoscopies uploaded to NED from 1<sup>st</sup> March 2019 to 29<sup>th</sup> Feb 2020 were analysed. Endoscopy sites not uploading throughout the entire year were excluded. As recommended annual procedure numbers do not apply to trainee colonoscopists, colonoscopies performed by trainees were excluded. The independent sector (IS) in the UK is often staffed by doctors who primarily work within the NHS. Colonoscopists solely uploading from IS sites were



excluded as they could also have performed colonoscopies at NHS sites not included in analysis.

**Results** 181 NHS sites were included in the analysis, uploading 440,776 colonoscopies to NED. Our analysis revealed that Nurse Endoscopists (NEs) comprise 10.9% of the workforce, performing 16.6% of colonoscopies.

675 (22.8%) colonoscopists worked at both NHS and IS sites. Including uploads from IS sites altered the total colonoscopists performing fewer than 100 colonoscopies annually from 1518 (51.2%) to 1359 (45.9%).

The 1518 (45.9%) colonoscopists who performed fewer than 100 colonoscopies annually performed 47,790 colonoscopies from NHS sites.

**Conclusions** 45.9% of colonoscopists perform fewer than 100 colonoscopies annually. However, they perform only 10.8% of total colonoscopies. A small increase in the number of colonoscopy sessions allocated to these colonoscopists would greatly increase colonoscopy capacity in the UK.

► **Table 1** Colonoscopy Workforce. Annual Colonoscopies for each Endoscopist includes those performed in both NHS & IS sites

	Endosco- pists	Total Procedu- res (NHS Sites)	Median Endo- scopist Annual Pro- cedures (IQR)	Endoscopists Performing <100 Colo- noscopies Annually
Doctor	2640 (89.1%)	367774 (83.4%)	110 (32-224)	1236 (46.8%)
Nurse Endo- scopist (NE)	324 (10.9%)	73002 (16.6%)	180 (20-356)	123 (38%)
<b>Total</b>	<b>2964 (100%)</b>	<b>440776 (100%)</b>	<b>115 (31-234)</b>	<b>1359 (45.9%)</b>

### eP132 PRACTICE VARIATION EXISTS IN THE PERFORMANCE OF PER ORAL ENDOSCOPIC MYOTOMY (POEM): RESULTS OF AN INTERNATIONAL SURVEY OF POEM EXPERTS

**Authors** Awadie H<sup>1</sup>, Ramchandani M<sup>2</sup>, Nabi Z<sup>2</sup>, Gralnek I<sup>1</sup>, Reddy N<sup>2</sup>

**Institute** 1 Emek Medical Center, Gastroenterology and Hepatology Institute, Afula, Israel; 2 Asian Institute of Gastroenterology, Department of Gastroenterology and Hepatology, Hyderabad, India

DOI 10.1055/s-0041-1724629

**Citation** Awadie H, Ramchandani M, Nabi Z et al. eP132 PRACTICE VARIATION EXISTS IN THE PERFORMANCE OF PER ORAL ENDOSCOPIC MYOTOMY (POEM): RESULTS OF AN INTERNATIONAL SURVEY OF POEM EXPERTS. *Endoscopy* 2021; 53: S140.

**Aims** POEM for the treatment of achalasia was introduced by Inoue in 2010. Since then, POEM has been widely adopted internationally. However, until now, there are no international “guidelines” on best practices for POEM. We aimed to assess potential practice variations amongst international POEM experts.

**Methods** An online survey asking detailed questions on pre-POEM, intra-POEM and post-POEM procedure related practice and patient management was sent to POEM experts. Experts were identified through a comprehensive literature search.

**Results** Two hundred and sixty-five POEM experts were identified and contacted by email. Eighty-five (32.1%) experts (60 GIs, 25 surgeons) responded. Of these, 53% reported performing POEM for more than 5 years, however, 29.3%

had performed less than 50 POEMs and only 7.3% had performed more than 500 POEM procedures. 79.3% performed POEM for a non-achalasia indication (e.g., DES, Jackhammer). Posterior myotomy was the preferred endoscopic approach (56.1%) and the triangle tip knife was used by 58.5%. A proximal to distal myotomy, standard length of myotomy (6cm above GEJ) and preservation of the longitudinal muscles was reported by 91.5%, 41.46% and 75.6%, respectively. We found that 64.6% performed a 2cm myotomy extension into the cardia and 97.6% prescribe prophylactic antibiotics peri-procedure. The most common diathermy settings used for myotomy were “endocut” (53.8%) and “spray coagulation” (28.8%). Post-POEM, 53.8% and 40.0% of respondents admit patients to hospital for one or two nights, respectively. Only 55.0% routinely perform a barium/gastrograffin study and 16.0% do not prescribe PPI.

**Conclusions** POEM has rapidly gained worldwide popularity. However, our survey of POEM experts identified significant variation in POEM practices. An international study group is needed to better define and provide guidance on best practices in POEM.

### eP133 THE RISK OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) OUTSIDE CORE WORKING HOURS. AN ANALYSIS OF THE AUSTRIAN ERCP BENCHMARKING SURVEY

**Authors** Steiner E<sup>1</sup>, Duller C<sup>2</sup>, Püspök A<sup>3</sup>, Kapral C<sup>4</sup>, Maieron A<sup>1</sup>

**Institute** 1 Universitätsklinikum St.Pölten, Gastroenterology and Hepatology, St. Pölten, Austria; 2 Johannes Kepler University Linz, Institute of Applied Statistics, Linz, Austria; 3 St. John´s Hospital Eisenstadt, Department of Internal Medicine 2, Eisenstadt, Austria; 4 Ordensklinikum Barmherzige Schwestern, Department of Gastroenterology and Hepatology, Linz, Austria  
DOI 10.1055/s-0041-1724630

**Citation** Steiner E, Duller C, Püspök A et al. eP133 THE RISK OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) OUTSIDE CORE WORKING HOURS. AN ANALYSIS OF THE AUSTRIAN ERCP BENCHMARKING SURVEY. *Endoscopy* 2021; 53: S140.

**Aims** Studies on the impact of the time of day on success and complication in endoscopic retrograde cholangiopancreatography (ERCP) are rare. In colonoscopy a reduced diagnostic and therapeutic yield already have been shown repeatedly at a later time of the day. In surgery and aviation, this topic is also well studied. We therefore aimed to evaluate the success and complication rate between ERCPs during (08:00 a.m. - 04:00 p.m.) and outside (04:00 p.m. - 08:00 a.m.) of core working hours.

**Methods** In this study, data from the nationwide ERCP benchmarking survey of the Austrian Society of Gastroenterology were studied with regard to success and complications in core working hours versus non-core working hours. Starting in 2013, this register provides insight into about 1/5 of all interventions performed in Austria per year. Indications for ERCP, comorbidities, severity (ASGE grading), type of sedation, achievement of treatment goal (success) and complications (AE; blood loss, post-ERCP pancreatitis/cholangitis, perforation, cardiopulmonary AEs) were reviewed and analyzed accordingly.

**Results** A total of 13901 ERCPs (95% in core working hours) were included. A significantly higher rate of patients with gallstones, cholangitis and biliary pancreatitis were treated out of the core working hours (g: 45,8 vs. 66,9%; c: 13,2 vs. 42,4%; bp: 4,9 vs. 18%). These patients showed more cardiopulmonary comorbidities, a higher rate of intubation and more cardiopulmonary complications (Table). Mortality did not differ significantly. ERCP severity (ASGE-grade III+IV) was higher in patients treated outside core hours (31,1% core vs. 93,7% non-core hours). Achievement of the therapeutic target showed no difference between the groups.

**Conclusions** Patients outside core working hours showed a higher risk of cardiopulmonary complications. However, this is conceivable attributable to the higher rates of cardiopulmonary comorbidity and cholangitis. There was no difference in success and mortality between ERCPs during and outside core working hours.

	core working hours	off core working hours	p - value
sedation (rate of intubation)	19,2 %	47,1 %	p < 0,001
achievement of the therapeutic target	86,3 %	89,0 %	n.s.
at least one complication	10,1 %	9,7 %	n.s.
cardio pulmonal complications	0,7 %	1,3 %	p < 0,05

### eP134 KEY PERFORMANCE MEASURES FOR LOWER GASTROINTESTINAL ENDOSCOPY IN A TERTIARY CENTER

**Authors** Konstantakis C<sup>1</sup>, Lourida T<sup>1</sup>, Diamantopoulou G<sup>1</sup>, Kalafateli M<sup>2</sup>, Theoxaris G<sup>1</sup>, Triantos C<sup>1</sup>, Thomopoulos K<sup>1</sup>

**Institute** 1 University Hospital of Patras, Department of Gastroenterology, Patras, Greece; 2 University Hospital of Patras, Department of Gastroenterology, Patras/Greece, Greece

DOI 10.1055/s-0041-1724631

**Citation** Konstantakis C, Lourida T, Diamantopoulou G et al. eP134 KEY PERFORMANCE MEASURES FOR LOWER GASTROINTESTINAL ENDOSCOPY IN A TERTIARY CENTER. *Endoscopy* 2021; 53: S141.

**Aims** Key performance measures for lower gastrointestinal endoscopy have been recommended by ESGE and other endoscopic societies, as a means of improving the quality of the services provided. The aim of this study is to assess the degree of implementation of performance measures into the daily endoscopic practice of our center during the past decade.

**Methods** We retrospectively analyzed the data from colonoscopies performed from 1/1/2010 until 31/12/2019 at our endoscopy center which is based in an academic hospital.

**Results** During the study period a total of 22.363 colonoscopies have been performed (mainly outpatients). 57.7% of the study population were male. 3779 (16,9%) were surveillance (adenoma/post polypectomy, post CRC/colectomy) colonoscopies, 6731 (30.1%) screening, 5122 (22.9%) non alarm symptoms, 3980 (17.8%) alarm symptoms, 1118 (5%) IBD, 1632 (7.3%) scheduled polypectomies.

Cecal intubation was successful in 20.730 (92.7%). Failure to reach the cecum was associated with the indication. Failure to complete the examination was significantly higher in symptomatic patients (13,3%), compared to only 4,7% of screening patients (p=0.00016) and 5% of follow-up patients (p=0.00539). The quality of bowel preparation was rated as good/excellent in only 18.665 colonoscopies (83.5%).

The complication rate was 0.49%: Eleven perforations following colonoscopy have been reported (0.04%), 85 post-polypectomy bleedings (0,3%) and 6 patients with post polypectomy syndrome (0.02%).

Overall polyp detection rate (PDR) at first colonoscopy was 41% for screening patients and 33% for symptomatic patients. Adenoma detection rate (ADR) was calculated at 25.7% for screening colonoscopies. Polyp retrieval rate was calculated at 89.1%. ADR did not improve when colonoscopy was performed by an expert endoscopist compared to being performed by a trainee in the presence of an expert.

**Conclusions** Despite advances in endoscopy and bowel preparation regimes, internationally recommended colonoscopy quality performance measures are marginally pursued in every day clinical practice.

### eP135 EVALUATION OF COLORECTAL POLYPECTOMY PRACTICES IN PORTUGAL – A NATIONWIDE SURVEY FROM A WESTERN EUROPE COUNTRY

**Authors** Dantas E<sup>1</sup>, Coelho M<sup>1</sup>, Sequeira C<sup>1</sup>, Santos I<sup>1</sup>, Simões G<sup>2</sup>, Currais P<sup>3</sup>, Félix C<sup>4</sup>, Laranjo A<sup>5</sup>, Gago T<sup>6</sup>, Roseira J<sup>7</sup>, Gouveia C<sup>8</sup>, Reis D<sup>9</sup>, Alexandrino G<sup>10</sup>, Leal C<sup>11</sup>, Morais R<sup>12</sup>, Flor de Lima M<sup>13</sup>, Pereira F<sup>14</sup>, Guedes T<sup>15</sup>, Magno Pereira V<sup>16</sup>, Silva JC<sup>17</sup>, Taveira F<sup>18</sup>, Bento-Miranda M<sup>19</sup>, Libânio D<sup>20</sup>, Brito M<sup>21</sup>, Antunes P<sup>22</sup>, Pires F<sup>23</sup>, Cardoso C<sup>1</sup>, Cremers I<sup>1</sup>, Oliveira AP<sup>1</sup>

**Institute** 1 Centro Hospitalar de Setúbal, Setúbal, Portugal; 2 Centro Hospitalar Lisboa Central, Lisboa, Portugal; 3 Instituto Português de Oncologia de Lisboa Francisco Gentil, Lisboa, Portugal; 4 Centro Hospitalar Lisboa Ocidental, Lisboa, Portugal; 5 Hospital Espírito Santo de Évora, Évora, Portugal; 6 Centro Hospitalar Universitário do Algarve, Faro, Portugal; 7 Centro Hospitalar Universitário do Algarve, Portimão, Portugal; 8 Hospital Beatriz Ângelo, Loures, Portugal; 9 Centro Hospitalar Lisboa Norte, Lisboa, Portugal; 10 Hospital Prof. Doutor Fernando Fonseca, Amadora, Portugal; 11 Centro Hospitalar de Leiria, Leiria, Portugal; 12 Centro Hospitalar São João, Porto, Portugal; 13 Hospital do Divino Espírito Santo de Ponta Delgada, Ponta Delgada, Portugal; 14 Hospital Amato Lusitano, Castelo Branco, Portugal; 15 Centro Hospitalar Universitário do Porto, Porto, Portugal; 16 Hospital Central do Funchal, Funchal, Portugal; 17 Centro Hospitalar Vila Nova de Gaia/Espinho, Gaia, Portugal; 18 Instituto Português de Oncologia de Coimbra, Coimbra, Portugal; 19 Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal; 20 Instituto Português de Oncologia do Porto, Porto, Portugal; 21 Hospital Garcia de Orta, Almada, Portugal; 22 Hospital de Braga, Braga, Portugal; 23 Centro Hospitalar Tondela-Viseu, Viseu, Portugal

DOI 10.1055/s-0041-1724632

**Citation** Dantas E, Coelho M, Sequeira C et al. eP135 EVALUATION OF COLORECTAL POLYPECTOMY PRACTICES IN PORTUGAL – A NATIONWIDE SURVEY FROM A WESTERN EUROPE COUNTRY. *Endoscopy* 2021; 53: S141.

**Aims** Colonoscopy allows identification and removal of premalignant polyps. With this study, we aimed to assess the current polypectomy practice patterns among Portuguese endoscopists and verify if they followed the European guidelines for colorectal polypectomy.

**Methods** A 25-question electronic survey was created based on the standards set by the European Society of Gastrointestinal Endoscopy guideline for colorectal polypectomy. The electronic survey was sent to all members of Portuguese Society of Gastroenterology. Data were collected and managed using REDCap electronic data capture tools hosted at SPG - CEREGA.

**Results** A total of 151 members completed the questionnaire, 52% female, with a median age of 34 years old [IQR 31-45]. Most respondents were consultants (69.5%), with 47.3% from central hospitals vs 45% from district hospitals, and 88.7% performed at least 10 colonoscopies per week. Concerning right colon polypectomy, for polyps ≤3 mm cold biopsy forceps (CBF) was the most used (63.6%) while for 4-5mm and 6-9mm polyps cold snare polypectomy (CSP) was preferred (88.7% and 74.8%, respectively); considering polyps ≥10mm, hot snare polypectomy (HSP) was the most chosen (58.9%), but a significant number of respondents prefer endoscopic mucosal resection (EMR) (37.7%). In left colon polypectomy, CBF was the most used for polyps ≤3 mm (60.9%) and CSP was the predominant choice for polyps 4-5mm and 6-9mm (90% and 76%, respectively); for polyps ≥10mm, HSP was preferred (72.2%). CSP was performed by 98.7% of respondents, but only 54.7% adjusted the technique and 40.9% used dedicated snares. Bleeding prophylaxis measures for high-risk pedunculated polyps were taken by 84.8%, mostly adrenaline injection (73.5%) and/or application of clips (52.3%).

**Conclusions** CSP is underused for resection of polyps ≤3 mm, despite its known safety and efficacy. Our results show a satisfactory compliance with ESGE guideline, although there is still place for improvements.

## eP136V UTERINE-LEIOMYOSARCOMA WITH SMALL-BOWEL METASTASES: A DIAGNOSIS FACILITATED BY DOUBLE-BALLOON ENTEROSCOPY (DBE)

**Authors** Lazaridis N<sup>1</sup>, Murino A<sup>1</sup>, Skamnelos A<sup>1</sup>, Chacchi Cahuin R<sup>1</sup>, Koukias N<sup>1</sup>, Raymond R<sup>1</sup>, Luong T<sup>2</sup>, Despott EJ<sup>1</sup>

**Institute** 1 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Royal Free Unit for Endoscopy, London, United Kingdom; 2 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Academic Department of Cellular Pathology, London, United Kingdom

DOI 10.1055/s-0041-1724633

**Citation** Lazaridis N, Murino A, Skamnelos A et al. eP136V UTERINE-LEIOMYOSARCOMA WITH SMALL-BOWEL METASTASES: A DIAGNOSIS FACILITATED BY DOUBLE-BALLOON ENTEROSCOPY (DBE). *Endoscopy* 2021; 53: S142.

A 56-year-old woman with a history of hysterectomy for uterine leiomyosarcoma (ULMS) was referred due to a suspicious jejunal lesion identified at abdominal computed tomography.

Anterograde double-balloon enteroscopy (DBE) revealed an ulcerated lesion. This was biopsied and marked with tattoos placed 3cm proximally and distally to guide minimally invasive laparoscopic resection. Histopathology confirmed the presence of a malignant spindle-cell tumour, in keeping with metastatic leiomyosarcoma. ULMS is a rare entity among malignant gynecologic tumors and carries a poor prognosis. To the best of our knowledge, this is the first case of ULMS with metastasis to the small-bowel diagnosed by DBE.

## eP138V RECURRENT DIGESTIVE BLEEDING: THE ESSENTIAL IS INVISIBLE TO THE EYES

**Authors** Martins Figueiredo L<sup>1</sup>, Correia F<sup>1</sup>, Alexandrino G<sup>1</sup>, Rafael MA<sup>1</sup>, Cardoso M<sup>1</sup>, Carvalho e Branco J<sup>1</sup>, Horta D<sup>1</sup>, Coimbra É<sup>2</sup>, Martins A<sup>1</sup>

**Institute** 1 Hospital Professor Doutor Fernando Fonseca, Gastroenterology, Amadora, Portugal; 2 Hospital Cruz Vermelha Portuguesa, Lisboa, Portugal  
DOI 10.1055/s-0041-1724634

**Citation** Martins Figueiredo L, Correia F, Alexandrino G et al. eP138V RECURRENT DIGESTIVE BLEEDING: THE ESSENTIAL IS INVISIBLE TO THE EYES. *Endoscopy* 2021; 53: S142.

A 58-year-old woman presented with melena and a hemoglobin of 10.6 g/dL. Esophagogastroduodenoscopy (OGD), colonoscopy and capsule endoscopy were unremarkable. Three weeks later, she was readmitted due to hematochezia and lipothymia. Abdominopelvic Angio-CT highlighted an 8 mm hypervascular nodular image in the duodenal bulb, originating from the gastroduodenal artery. Duodenoscopy revealed a protruding lesion with a central erosion, located on the upper wall of the bulb, immediately distal to the pylorus. Attempted hemostasis with hemoclips failed due to unfavourable endoscopic access and resulted in intermittent pulsatile bleeding. The patient underwent successful endovascular embolization of the Dieulafoy's lesion with coils.

## eP139V OVERT MID-GUT BLEEDING FROM ANASTOMOTIC VARICES: SUCCESSFUL MANAGEMENT WITH DOUBLE-BALLOON ENTEROSCOPY FACILITATED CYANOACRYLATE-INJECTION ENDOTHERAPY (WITH VIDEO)

**Authors** Lazaridis N<sup>1</sup>, Murino A<sup>1</sup>, Skamnelos A<sup>1</sup>, Chacchi Cahuin R<sup>1</sup>, Koukias N<sup>1</sup>, Raymond R<sup>1</sup>, Mandair D<sup>2</sup>, Despott EJ<sup>1</sup>

**Institute** 1 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Royal Free Unit for Endoscopy, London, United Kingdom; 2 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Neuroendocrine Tumour Unit, Centre for Gastroenterology, ENETS Centre of Excellence, London, United Kingdom

DOI 10.1055/s-0041-1724635

**Citation** Lazaridis N, Murino A, Skamnelos A et al. eP139V OVERT MID-GUT BLEEDING FROM ANASTOMOTIC VARICES: SUCCESSFUL MANAGEMENT WITH DOUBLE-BALLOON ENTEROSCOPY FACILITATED CYANOACRYLATE-INJECTION ENDOTHERAPY (WITH VIDEO). *Endoscopy* 2021; 53: S142.

A 65-year-old man with a metastatic mid-gut neuroendocrine tumour warranting extensive small-bowel resection presented with life-threatening mid-gut bleeding. A CT enterography (CTE) demonstrated jejunal anastomotic varices, with superior mesenteric vein thrombosis. Without a radiological option for treatment, anterograde double-balloon enteroscopy (DBE) was planned to facilitate cyanoacrylate-injection endotherapy (CIE).

During DBE 2 nests of bleeding varices were identified at the anastomosis. DBE CIE was successful performed without any adverse events; subsequent CTE confirmed success. The patient has not bled further during 6-months of follow-up.

DBE facilitated CIE of mid-gut varices is effective and safe in carefully selected cases.

## eP140 NON-AMPULLARY SPORADIC DUODENAL ADENOMAS: TIME FOR A CONSENSUS ON ENDOSCOPIC RESECTION?

**Authors** Materacki L<sup>1</sup>, Napier D<sup>2</sup>, Tate D<sup>3</sup>, Anderson J<sup>2</sup>

**Institute** 1 North Bristol NHS Foundation Trust, Gastroenterology, Bristol, United Kingdom; 2 Gloucestershire Hospitals NHS Foundation Trust, Gastroenterology, Cheltenham, United Kingdom; 3 Ghent University Hospital, Gastroenterology, Ghent, Belgium

DOI 10.1055/s-0041-1724636

**Citation** Materacki L, Napier D, Tate D et al. eP140 NON-AMPULLARY SPORADIC DUODENAL ADENOMAS: TIME FOR A CONSENSUS ON ENDOSCOPIC RESECTION?. *Endoscopy* 2021; 53: S142.

**Aims** Sporadic duodenal adenomas (SDAs) are a rare but important finding at gastroscopy due to their malignant potential. Although endoscopic resection (ER) is generally advocated this carries significant risk related to the relatively thin, vascular and fixed duodenal wall. The lack of guidelines related to SDAs leads to variability in their management with potential implications for patient outcomes.

This descriptive study aimed to evaluate current practice regarding the management of non-ampullary SDAs and assess the need for a consensus.

**Methods** 40 internationally renowned advanced endoscopists from multiple international centres were surveyed regarding their management of non-ampullary SDAs. 12 questions investigating factors influencing whether to offer ER, pre-ER work-up, procedural risk and post-ER management were evaluated.

**Results** The survey was completed by 19 endoscopists with 18 confirming they endoscopically manage non-ampullary SDAs. Most endoscopists offered ER on a case-by-case basis with patient age (72%), comorbidities (44%) and lesion size (39%) reported as integral to decision-making. No guidelines were used by 94% but pre-procedure MDT discussion was arranged routinely by 67% and selectively by 22% of endoscopists. Endoscopists completed further investigation pre-ER including endoscopic ultrasound (39%) and cross-sectional imaging (22%). The quoted risk of ER including haemorrhage (1-50%, median 15%) and perforation (0.7-10%, median 3%) was variable.

Anti-coagulation and anti-platelets were restarted a median of 3 days (IQR 2-7 days) post-ER. Post-procedural PPIs were routinely prescribed by 94% however therapy duration was variable (median 29 days, IQR 14-30 days). Patients were admitted routinely post-ER by 39% and in specific cases by 56%.

**Conclusions** There is widespread variability in the pre- and post-procedural management of non-ampullary SDAs in major international centres. The majority of endoscopists manage patients on a case-by-case basis following MDT discussion and advocate PPI therapy post-ER. There is a need to develop a consensus of opinion to help standardise the management of non-ampullary SDAs.

## eP141V DOUBLE-BALLOON ENTEROSCOPY-FACILITATED ISCHAEMIC POLYPECTOMY OF SMALL-BOWEL POLYPS IN PATIENTS WITH PEUTZ-JEGHERS SYNDROME

**Authors** Skamnelos A<sup>1</sup>, Murino A<sup>1</sup>, Lazaridis N<sup>1</sup>, Vlachou E<sup>1,2</sup>, Koukias N<sup>1</sup>, Chacchi Cahuin R<sup>1</sup>, Walton SL<sup>1</sup>, Raymond R<sup>1</sup>, Despott EJ<sup>1</sup>

**Institute** 1 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Royal Free Unit for Endoscopy, London, United Kingdom; 2 NIMTS Army Veterans Hospital, Department of Gastroenterology and Endoscopy, Athens, Greece

**DOI** 10.1055/s-0041-1724637

**Citation** Skamnelos A, Murino A, Lazaridis N et al. eP141V DOUBLE-BALLOON ENTEROSCOPY-FACILITATED ISCHAEMIC POLYPECTOMY OF SMALL-BOWEL POLYPS IN PATIENTS WITH PEUTZ-JEGHERS SYNDROME. *Endoscopy* 2021; 53: S143.

Ischaemic-polypectomy with detachable-snare or endoclips at double-balloon enteroscopy (DBE) is emerging as a promising technique for the minimally-invasive management of small-bowel polyps in patients with Peutz-Jeghers syndrome (PJS).

In this case series, 46 polyps were treated during 9 therapeutic DBEs performed in 4 patients. Seven polyps >20mm in size required loop ligation with a detachable-snare. No immediate or late adverse events occurred. All patients remained asymptomatic during follow-up (mean 19; range 1-48 months). None required subsequent surgery.

Ischaemic-polypectomy facilitated by DBE appears to be a safe and effective endotherapeutic option for endotherapy of small-bowel polyps in patients with PJS.

Age/ Gender	Number of procedures (antero/ retro)	Total polyps	Clipping	Detachable snare for polyps >20mm
50/M	2 (1/1)	17	17	-
56/M	1 (1/-)	14	14	-
29/F	3 (1/2)	7	4	3
29/M	3 (3/-)	8	4	4

## eP142 ENDOSCOPIC PEMR RESECTION LARGE DUODENUM NEOPLASMS, EFFECTIVE AND SAFE METHOD ENDOSCOPIC TREATMENT PATIENTS WITH LARGE DUODENUM LESION

**Authors** Aleksandr K<sup>1</sup>, Andrii S<sup>2</sup>, Aleksandr D<sup>3</sup>, Aleksandr K, Andrii S, Aleksandr D, Dmitriy B

**Institute** 1 Zaporizhzhya State Medical University, University Clinic, Miniinvasive Surgical and Endoscopy Intervention Department, Zaporizhzhya, Ukraine; 2 Zaporizhzhya State Medical University, Endoscopy, Zaporizhzhya, Ukraine; 3 Zaporizhzhya Regional Hospital, Endoscopy and Gastroenterology, Zaporizhzhya, Ukraine

**DOI** 10.1055/s-0041-1724638

**Citation** Aleksandr K, Andrii S, Aleksandr D et al. eP142 ENDOSCOPIC PEMR RESECTION LARGE DUODENUM NEOPLASMS, EFFECTIVE AND SAFE METHOD ENDOSCOPIC TREATMENT PATIENTS WITH LARGE DUODENUM LESION. *Endoscopy* 2021; 53: S143.

**Aims** Patients with large duodenum neoplasms can be operated on surgically with a high risk of complications and mortality. Endoscopic piece EMR resection large duodenum lesions are effective and safe method endoscopic

treatment. An increasing number of nonampullary duodenal neoplasm (NADM) made possible by increasing screening gastroduodenoscopy and used higher definition endoscopy with magnification and NBI examination.

Our research aim to determine the choice of an endoscopic method for treating patients with large nonampullary duodenum neoplasms.

**Methods** We studied 30 who had undergone successful endoscopic piece EMR (pEMR) between 2019 and 2020 years. Each patient underwent gastroduodenoscopy, where the location, size of the lesions was determinate, and a biopsy was performed. In all cases, biopsy showed the presence of tubular adenoma with lower grade dysplasia (LGD) and one case we noted tubulovillous adenoma with higher grade dysplasia (HGD). The size of the duodenum lesion varied from 1.5 cm to 2.5 cm. Considering the large size duodenum lesion and difficult to implement en block resection, at all cases we choice piece endoscopic mucosal resection (pEMR).

**Results** All patients underwent endoscopic pEMR under general anesthesia in the supine position. Surgery time varied from 30 to 60 minutes and depending on the localization and size lesion. We used high quality endoscopic system Olympus Evis Exera III with 190HQ gastroscope, distal attachment, polypectomy snare and electrosurgical generator VIO 300 D (Erbe, Tubingen, Germany). Before resection we performed injection saline with indigocarmine without epinephrine. During the operation and after we did not get such complication as: bleeding and perforation. All postoperative ulcer we clip close.

**Conclusions** We believe that piece endoscopic mucosal resection (pEMR) are effective and safe endoscopic method at the treatment patient with large nonampullary duodenum neoplasms.

## eP143V ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OF A NEUROENDOCRINE TUMOR OF THE DUODENAL BULB USING DUAL-KNIFE-J AND TRACTION WITH RUBBERBAND/CLIP TECHNIQUE

**Author** Beyna T<sup>1</sup>

**Institute** 1 Evangelisches Krankenhaus Düsseldorf, Department of Gastroenterology and Therapeutic Endoscopy, Düsseldorf, Germany

**DOI** 10.1055/s-0041-1724639

**Citation** Beyna T eP143V ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OF A NEUROENDOCRINE TUMOR OF THE DUODENAL BULB USING DUAL-KNIFE-J AND TRACTION WITH RUBBERBAND/CLIP TECHNIQUE. *Endoscopy* 2021; 53: S143.

Neuroendocrine tumors of the duodenum are often well differentiated and associated with a low risk of local lymph node metastases. Therefore, endoscopic resection (ER) has evolved as a less invasive alternative to surgery.

However, curative ER is challenging. Application of EMR is often limited because of submucosal extension and non-lifting. Some lesions are amenable to endoscopic full thickness resection using the FTRD-system, depending on localization in reference to pylorus or papilla and lesion-size. ESD in the duodenum is commonly associated with high AE-rates. We present the case of a duodenal ESD of a duodenal NET using rubber-band/clip traction technique.

## eP144 SPATZ 3 ADJUSTABLE BALLOON SYSTEM: FEASIBILITY, EFFICACY AND SAFETY ISSUES OF A DUAL CENTER EXPERIENCE

**Authors** de Nucci G<sup>1</sup>, Simeth C<sup>2</sup>, Reati R<sup>3</sup>, Mandelli ED<sup>4</sup>, Redaelli D<sup>1</sup>, Morganti D<sup>1</sup>, Colombo E<sup>5</sup>, d'Urbano C<sup>6</sup>, Berra SA<sup>5</sup>, Monica F<sup>2</sup>, Manes G<sup>1</sup>

**Institute** 1 ASST Rhodense, Gastroenterology and Endoscopy Unit, Garbagnate Milanese (MI), Italy; 2 ASUGI, Gastroenterology Unit, Trieste, Italy; 3 AORN Cardarelli, Gastroenterology and Endoscopy Unit, Napoli, Italy; 4 ASST Rhodense, Gastroenterology and Endoscopy Unit, Milan, Italy; 5 ASST Rhodense, Internal Medicine Department, Garbagnate Milanese, Italy; 6 ASST Rhodense, General Surgery Unit, Garbagnate Milanese (MI), Italy

**DOI** 10.1055/s-0041-1724640

**Citation** de Nucci G, Simeth C, Reati R et al. eP144 SPATZ 3 ADJUSTABLE



**BALLOON SYSTEM: FEASIBILITY, EFFICACY AND SAFETY ISSUES OF A DUAL CENTER EXPERIENCE.** *Endoscopy* 2021; 53: S143.

**Aims** Intra-gastric balloons for weight loss and as bridge to major bariatric surgery are effective tools, but they could be associated with early period intolerance and a diminished effect within 8-12 weeks. The introduction of an adjustable balloon could improve comfort and offer greater efficacy over the time. Spatz 3 is a dynamic bariatric device with a long implantation time (12 months), system for inflation/deflation of the balloon, and safety mechanism for bowel migration despite an eventual deflation. There are few data about its efficacy and safety in a large followed up bariatric population.

**Methods** The aim of our study was to assess Spatz3 efficacy in terms of weight loss and safety issues. Implantations of Spatz 3 in 138 patients were reviewed and data about demographics, weight loss, bridging to surgery, early and late complications were collected from the prospectively collected database of two tertiary Endoscopic centers. Mean age of the study population was 47,8 years and its mean starting BMI was 40,2. A 12 months treatment was scheduled and volume adjustment was proposed in case of patient intolerance or weight loss plateau.

**Results** From January 2016 to April 2019, 138 patients were treated with Spatz 3 balloon endoscopic implantation and among these 71 used the treatment as bridge to major surgery. The mean weight loss period was 24.8 kilograms. In 8 pts the device was removed after 3 weeks for intolerance. Down volume adjustment was performed in 9 pts allowing them to continue the therapy, volume balloon increase was instead performed in 19 pts yielding an additional mean weight loss of 4.8 kilograms. No Spatz rupture, gastric perforations or major clinic complications occurred.

**Conclusions** Spatz 3 balloon seems to be an effective device to treat obesity with a significant weight loss within a 12 months period with no early or late complication.

## eP145V ENDOSCOPIC SLEEVE GASTROPLASTY IN CONSCIOUS SEDATION

**Authors** Jagtap N<sup>1</sup>, Kalapala R<sup>1</sup>, Kanakagiri H<sup>2</sup>, Darisetty S<sup>2</sup>, Reddy DN<sup>1</sup>

**Institute** 1 Asian Institute of Gastroenterology, Medical Gastroenterology, Hyderabad, India; 2 Asian Institute of Gastroenterology, Anaesthesia, Hyderabad, India

**DOI** 10.1055/s-0041-1724641

**Citation** Jagtap N, Kalapala R, Kanakagiri H et al. eP145V ENDOSCOPIC SLEEVE GASTROPLASTY IN CONSCIOUS SEDATION. *Endoscopy* 2021; 53: S144.

Endoscopic sleeve gastroplasty for obesity is safe and effective procedure. It is currently performed under general anesthesia with endotracheal intubation. In clinical practice, conscious sedation is used for diagnostic and uncomplicated therapeutic endoscopy. Conscious sedation maintains adequate cardiopulmonary function without airway intervention, retain ability to respond to deep stimulus and improves tolerance for endoscopic interventions.

We performed ESG in a 27 years' female with class 2 obesity under conscious sedation without esophageal overtube. Total operative time was 55 minutes and total procedure time was 40 minutes. Cardiopulmonary parameters were stable throughout procedure. There was no impairment in ESG standard technique.

## eP146 ENDOSCOPIC SLEEVE GASTROPLASTY AS NEW HOPE FOR MILD OBESITY

**Authors** Bove V<sup>1</sup>, Carlino G<sup>1</sup>, Boskoski I<sup>1</sup>, Gallo C<sup>1</sup>, De Siena M<sup>1</sup>, Matteo MV<sup>1</sup>, Pontecorvi V<sup>1</sup>, Laterza L<sup>1</sup>, Orlandini B<sup>1</sup>, Costamagna G<sup>1</sup>

**Institute** 1 Fondazione Policlinico A. Gemelli IRCCS, Rome, Italy

**DOI** 10.1055/s-0041-1724642

**Citation** Bove V, Carlino G, Boskoski I et al. eP146 ENDOSCOPIC SLEEVE GASTROPLASTY AS NEW HOPE FOR MILD OBESITY. *Endoscopy* 2021; 53: S144.

**Aims** Endoscopic Sleeve Gastroplasty (ESG) is a safe and effective treatment for obesity. To date, its indications are limited to severe obesity (BMI  $\geq$  40 kg/m<sup>2</sup>) and morbid obesity (BMI 35-40 kg/m<sup>2</sup> with comorbidities). The aim of our study is to evaluate safety and efficacy of ESG in mild obese patients (BMI 30-35 kg/m<sup>2</sup>), regardless of comorbidities.

**Methods** A retrospective analysis was conducted on a database reporting consecutive mild obese patients who underwent ESG between March 2017 and October 2020. ESG safety,  $\Delta$ BMI, %TBWL, %EWL, the evolution of major obesity-associated morbidities (i.e. High Blood Pressure (HBP), Hyper-INSulinemia (H-INS), Type 2 Diabetes Mellitus (T2DM) and Obstructive Sleep Apnea Syndrome (OSAS)), and the Moorehead-Ardelt Quality of Life questionnaire were analyzed at 3-, 6- and 12-months follow-up.

**Results** A total of 65 patients (mean age 46.3 $\pm$ 9.4, 78.5% female) underwent ESG. Baseline BMI was 34.3 $\pm$ 1.4 kg/m<sup>2</sup>. One patient had T2DM, 13 patients reported H-INS, 11 HBP, 3 had both H-INS and HBP and one HBP, H-INS and OSAS. No peri-procedural complications were reported. Out of the total, 44 and 34 patients respectively reached 6- and 12-months follow-up. Mean  $\Delta$ BMI was 5.3 $\pm$ 1.8, 5.3 $\pm$ 2.2 and 4.9 $\pm$ 3.2 kg/m<sup>2</sup> at 3, 6 and 12 months. Similarly, %TBWL and %EWL were 15.3 $\pm$ 5.2 and 57 $\pm$ 19.9 at 3 months, 15.5 $\pm$ 6.4 and 57.2 $\pm$ 23.9 at 6 months, 14.3 $\pm$ 9.3 and 53.9 $\pm$ 35.8 at 12 months. The Moorehead-Ardelt questionnaire scored 1.5 $\pm$ 0.7, 1.6 $\pm$ 0.9 and 1.6 $\pm$ 1 over follow-up. Diabetes and OSAS resolved in 100% of the cases; H-INS and HBP resolved respectively in 43.8% and 46.5% within 6 months, and they similarly reported a stable improvement in 18.8% and 6.7% of the cases.

**Conclusions** ESG in mild obese patients proved to be safe and effective in terms of weight loss and comorbidities improvement. Further evidences are needed.

Endoscopic Sleeve Gastroplasty	3-months follow-up	6-months follow-up	12-months follow-up
$\Delta$ BMI (kg/m <sup>2</sup> )	5.3 $\pm$ 1.8	5.3 $\pm$ 2.2	4.9 $\pm$ 3.2
%TBWL	15.3 $\pm$ 5.2	15.5 $\pm$ 6.4	14.3 $\pm$ 9.3
%EWL	57 $\pm$ 19.9	57.2 $\pm$ 23.9	53.9 $\pm$ 35.8
Moorehead-Ardelt QoL questionnaire	1.5 $\pm$ 0.7	1.6 $\pm$ 0.9	1.6 $\pm$ 1

## eP147V A RARE CHALLENGING COMPLICATION OF INTRAGASTRIC BALLOON: GASTRIC OUTLET OBSTRUCTION

**Authors** Lamas S<sup>1</sup>, Lopez-Mourelle A<sup>1</sup>, Arguelles-Estrada P<sup>1</sup>, Gejo A<sup>1</sup>, Carballo-Folgooso L<sup>1</sup>, Celada-Sendino M<sup>1</sup>, Rodriguez-Ferreiro N<sup>1</sup>, Beltran V<sup>1</sup>, del Caño-Cerdan C<sup>1</sup>, Nieto-Jara A<sup>1</sup>, Suarez-Noya A<sup>1</sup>, Fraile M<sup>1</sup>, Florez-Diez P<sup>1</sup>

**Institute** 1 Hospital Universitario Central de Asturias, Digestive Diseases, Oviedo, Spain

**DOI** 10.1055/s-0041-1724643

**Citation** Lamas S, Lopez-Mourelle A, Arguelles-Estrada P et al. eP147V A RARE CHALLENGING COMPLICATION OF INTRAGASTRIC BALLOON: GASTRIC OUTLET OBSTRUCTION. *Endoscopy* 2021; 53: S144.

A woman with obesity, previously treated with POSE procedure, gets placed a intragastric balloon (Spatz3). 36 hours after, she comes to emergency room complaining epigastric pain and vomits. CT showed esophageal and gastric distention with antral balloon impaction. Urgent gastroscopy failed to reposition the balloon due to POSE-related anatomic alteration, so balloon retrieval

was decided. Given the lack of specific endoscopic equipment for this purpose, we tried to deflate balloon with a sclerotherapy needle, being technically difficult because of its caliber (23G). An ultrasound-endoscopic biopsy needle (EchoTip-ProCore19G) was then used to deflate it and retraival was achieved with a snare.

## eP148V DOUBLE-BALLOON ENTEROSCOPY (DBE) FOR REPLACEMENT OF A DIRECT PERCUTANEOUS ENDOSCOPIC JEJUNOSTOMY (DPEJ) TUBE, 7-YEARS AFTER ORIGINAL PLACEMENT

**Authors** Skamnelos A<sup>1</sup>, Murino A<sup>1</sup>, Lazaridis N<sup>1</sup>, Chacchi Cahuin R<sup>1</sup>, Raymond R<sup>1</sup>, Despott EJ<sup>1</sup>

**Institute** 1 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Royal Free Unit for Endoscopy, London, United Kingdom

**DOI** 10.1055/s-0041-1724644

**Citation** Skamnelos A, Murino A, Lazaridis N et al. eP148V DOUBLE-BALLOON ENTEROSCOPY (DBE) FOR REPLACEMENT OF A DIRECT PERCUTANEOUS ENDOSCOPIC JEJUNOSTOMY (DPEJ) TUBE, 7-YEARS AFTER ORIGINAL PLACEMENT. *Endoscopy* 2021; 53: S145.

Direct percutaneous endoscopic jejunostomy (DPEJ) provides a more secure and effective route of enteral nutrition in patients with diabetic gastroparesis. Double-balloon enteroscopy (DBE) facilitated replacement of a DPEJ tube placed at our institution 7-years previously that was required in a 33-year old man.

At DBE, the DPEJ bumper was identified with externally passed guidewire assistance. A dedicated thread was passed through-the-tube remnant and bumper (from outside-in) and grasped endoscopically. The thread was used to place a fresh DPEJ tube at the same location.

The safe and stable endotherapeutic platform afforded by DBE enhances the usefulness and effectiveness of this technique.

## eP149 GASTROSTOMY “BUTTON” DIAMETER AND LENGTH VARIATIONS AFTER PERCUTANEOUS ENDOSCOPIC GASTROSTOMY: ONE SIZE DOES NOT FIT ALL

**Authors** Macedo Silva V<sup>1,2,3</sup>, Freitas M<sup>1,2,3</sup>, Sousa Magalhães R<sup>1,2,3</sup>, Cúrdia Gonçalves T<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Marinho C<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine - University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarães, Portugal

**DOI** 10.1055/s-0041-1724645

**Citation** Macedo Silva V, Freitas M, Sousa Magalhães R et al. eP149 GASTROSTOMY “BUTTON” DIAMETER AND LENGTH VARIATIONS AFTER PERCUTANEOUS ENDOSCOPIC GASTROSTOMY: ONE SIZE DOES NOT FIT ALL. *Endoscopy* 2021; 53: S145.

**Aims** Percutaneous endoscopic gastrostomy (PEG) is a useful option for long-term enteral nutrition in patients without an efficient oral intake. Low-profile gastrostomy tubes (“buttons”) may afterwards be placed in the stomach through the abdominal wall following maturation of the pre-existing stoma, usually 6-12 months after the initial procedure. Regular button verification is essential, since inadequate sizing may be associated with accidental exteriorization or food leakage through the stoma. We aimed to evaluate gastrostomy button diameter or length variations on the first year after its placement. A secondary outcome was to identify possible factors associated with these variations.

**Methods** We analyzed consecutive PEGs between 2016 and 2018. A minimum follow-up of 24 months was required (12 months until button placement and additional 12 months for evaluation of button changes). Button diameter or length variations were assessed in a specialized PEG appointment during the follow-up period. Variables possibly associated with this outcome were tested.

**Results** From 150 procedures, 56 were excluded by not having the required follow-up period. Final sample consisted of 65 (69.1%) women, with a mean age of 76.9 years. Button diameter or length variations occurred in 44 (46.8%) patients. On multivariate analysis, diameter reduction was significantly more frequent in nursing homes patients (OR=5.56; 95%CI=1.33-22.22,  $p=0.019$ ) or with accidental exteriorization of the gastrostomy tube (OR=3.85; 95%CI=1.22-12.19,  $p=0.02$ ). Length variation occurred more frequently in patients with a weight change greater than 5 kilograms (either gain or loss) (OR=3.70; 95%CI=1.15-12.05,  $p=0.029$ ).

**Conclusions** A significant proportion of patients with gastrostomy buttons eventually required a change in their length or diameter, especially if living in nursing homes, having significant weight changes or reporting accidental tube exteriorization. This emphasizes the importance of having a specialized PEG appointment in order to regularly assure the best fitted button for each patient and ultimately guarantee an adequate nutritional intake.

## eP150 INNOVATIONS IN TREATMENT OF BURIED BUMPER SYNDROME (BBS): THE BALLOON DILATION PULL (BDP) TECHNIQUE: PUMP IT UP AND PULL IT OUT!

**Authors** Maly M<sup>1</sup>, Snaauwaert C<sup>1</sup>

**Institute** 1 AZ Sint-Jan Brugge-Oostende, Department of Gastroenterology and Hepatology, Bruges, Belgium

**DOI** 10.1055/s-0041-1724646

**Citation** Maly M, Snaauwaert C eP150 INNOVATIONS IN TREATMENT OF BURIED BUMPER SYNDROME (BBS): THE BALLOON DILATION PULL (BDP) TECHNIQUE: PUMP IT UP AND PULL IT OUT!. *Endoscopy* 2021; 53: S145.

**Aims** To demonstrate efficacy and safety of the BDP-technique for treatment of BBS and to present a modification of the technique in case of complete BBS.

**Methods** Monocentric retrospective study of consecutive BBS-patients treated with the BDP-technique between June 2019 and November 2020. Primary outcome measures were technical success rate, procedure time and occurrence of adverse events. In the first step of the BDP-technique, the PEG-tube is cut at the cutaneous side at 1-2cm. In case of complete BBS, a new entry site is made through the PEG-tube with a metal paracentesis needle. Subsequently, a guidewire is advanced into the stomach through the PEG-tube (or paracentesis needle sheath) and is grasped endoscopically with a snare. Thereafter, a dilation balloon (15-18mm) is advanced over the guidewire through the endoscope and through the PEG-tube. By inflating it to the maximum dilation pressure, the balloon stays solidly impacted into the buried bumper which is removed by traction on the endoscope and the balloon catheter together. If necessary, a new PEG-tube is inserted, which can be used immediately.

**Results** A total of 7 BBS-patients were treated with the BDP-technique with a mean age of 72 years (range 60-83). The procedures were performed under deep sedation in 6 patients. In 1 patient, in whom the anaesthetic risk was deemed very high, the procedure was performed without any form of sedation. The mean procedure time was 14,5 minutes (range 5-27). Technical success rate was 100%. No direct post-procedure complications were seen. One episode of aspiration pneumonia was noted, rather as a complication of the patient's underlying medical condition than due to the endoscopic procedure.

**Conclusions** The BDP-technique is a simple endoscopic procedure, using endoscopic accessories which are readily available in every endoscopic unit. The procedure time is short and the technical success rate is optimal without any immediate direct complications.

## eP151 PYLORIC STENT INSERTION IN MALIGNANT GASTRIC OUTLET OBSTRUCTION (MGGO): MOVING BEYOND PALLIATION

**Authors** Saeed SM<sup>1</sup>, Bilal S<sup>1</sup>, Siddique MZ<sup>1</sup>, Saqib M<sup>1</sup>, Shahid S<sup>1</sup>, Yusuf MA<sup>1</sup>  
**Institute** 1 Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore, Pakistan., Gastroenterology, Lahore, Pakistan  
**DOI** 10.1055/s-0041-1724647

**Citation:** Saeed SM, Bilal S, Siddique MZ et al. eP151 PYLORIC STENT INSERTION IN MALIGNANT GASTRIC OUTLET OBSTRUCTION (MGGO): MOVING BEYOND PALLIATION. *Endoscopy* 2021; 53: S146.

**Aims** MGGO is seen in advance malignancies. Surgical gastro-jejunostomy is standard palliative treatment and upfront surgery in resectable gastric cancers. Importance of relieving obstruction in resectable gastric tumours is to have uninterrupted neoadjuvant chemotherapy, which improves overall survival. Our aim is to evaluate efficacy and safety of pyloric stents in gastric outlet obstruction in gastric cancer and to evaluate 1-year survival in patients with resectable obstructing gastric tumours where stents were placed as a bridge to surgery.

**Methods** A retrospective review of 161 patients, meeting the inclusion and exclusion criteria and underwent endoscopic placement of self expandable metallic stent (SEMS) for GOO due to gastric cancer. Data was collected for the duration of 5 years from January, 2014 to March, 2019.

**Results** Stent efficacy was measured using gastric outlet obstruction scoring system (GOOSS) at the time of stent insertion, after 1 and 12 weeks. GOOSS improved at 1 week as well as at 12 weeks post stenting, when compared to baseline. P value was also statistically significant. The serum albumin level and BMI, had comparable results before and after stenting. 35/161 patients underwent neo-adjuvant chemotherapy followed by curative surgery. On year survival rate following curative surgery in there patient was 87.5%. No serious stent related complication were seen, however non serious complication rate was 41%, including stent migration. No additional post surgery complications were seen in pre surgery stented patient in our study on comparison to literature.

**Conclusions** SEMS insertion in MGGO helps maintain nutritional status during neo-adjuvant period, improves survival and is not associated with an increased risk of post-operative complications. Therefore, it should be used as a palliative measure but also as a bridging therapy for patients with obstructing resectable gastric tumours.

## eP152 PREDICTORS OF ENDOSCOPIC TREATMENT FAILURE FOR PEPTIC PYLORO-BULBAR STENOSIS

**Authors** Ben Mohamed A<sup>1</sup>, Nakhli A<sup>1</sup>, Khsiba A<sup>1</sup>, Bradai S<sup>1</sup>, Mahmoudi M<sup>1</sup>, Madhioub M<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>  
**Institute** 1 Faculté de Médecine de Tunis, Gastroenterology, Mohamed Tahar Maamouri Hospital, Tunis, Tunisia  
**DOI** 10.1055/s-0041-1724648

**Citation:** Ben Mohamed A, Nakhli A, Khsiba A et al. eP152 PREDICTORS OF ENDOSCOPIC TREATMENT FAILURE FOR PEPTIC PYLORO-BULBAR STENOSIS. *Endoscopy* 2021; 53: S146.

**Aims** Pylorobulbar stenosis is a late complication of peptic ulcer disease. Endoscopic treatment is an alternative to surgical treatment. The aim of our work was to determine the predictors of endoscopic treatment failure.

**Methods** This is a retrospective study that included all patients with peptic ulcer disease complicated with pyloro-bulbar stenosis during the period between 1996 and 2017 and who had endoscopic dilation. The statistical study was carried out by SPSS software ( $p < 0.1$ ).

**Results** We included 73 patients (62 men and 11 women) with an average age of 51 years [20-81]. Smoking and intake of non-steroidal anti-inflammatory drugs were found in 70% and 4% of patients, respectively. The circumstance of discovery was gastric outlet obstruction syndrom ( $n = 53$ ) or epigastric pain

( $n = 20$ ). The mean duration of symptoms was 18.6 months. The mean number of endoscopic dilations was 1.7 [1-4]. The maximum diameter used was on average 17.3 mm [16-28]. Fifty patients (72.5%) had a good response. Complications of dilation were: minor bleeding ( $n = 42$ ) and perforation ( $n = 2$ ). Surgical treatment was performed in 22 patients. The mean duration of follow-up was 11.5 months [0-156]. The only predictor of endoscopic treatment failure was smoking ( $p = 0.077$ ). There was no correlation between age ( $p = 0.426$ ), sex ( $p = 0.135$ ), non-steroidal anti-inflammatory drugs intake ( $p = 0.818$ ), a prolonged period before consultation ( $p = 0.736$ ), the persistence of HP ( $p = 0.919$ ) and the success of endoscopic treatment.

**Conclusions** Endoscopic treatment combined with eradication of HP is an effective treatment of peptic pylorobulbar stenosis. Smoking is a predictor of endoscopic treatment failure.

## eP153 ENDOSCOPIC DILATION OF POST-SLEEVE GASTRECTOMY STENOSIS: LONG-TERM EFFICACY AND SAFETY RESULTS

**Authors** Lorenzo D<sup>1</sup>, Gkolfakis P<sup>1</sup>, Lemmers A<sup>1</sup>, Louis H<sup>1</sup>, Huberty V<sup>1</sup>, Blero D<sup>1</sup>, Devière J<sup>1</sup>  
**Institute** 1 Erasme, Gastroenterology, Bruxelles, Belgium  
**DOI** 10.1055/s-0041-1724649

**Citation:** Lorenzo D, Gkolfakis P, Lemmers A et al. eP153 ENDOSCOPIC DILATION OF POST-SLEEVE GASTRECTOMY STENOSIS: LONG-TERM EFFICACY AND SAFETY RESULTS. *Endoscopy* 2021; 53: S146.

**Aims** Post-sleeve gastrectomy (SG) stenoses occur in about 5% of cases. Hydrostatic dilation (HD) and pneumatic dilation (PD) have been proposed as treatments, but efficacy data remain scarce. The objectives of this study were to evaluate the safety and the initial and long-term efficacy of endoscopic balloon dilation for post-SG stenosis according to different mechanisms of post-SG stenosis.

**Methods** This retrospective study in a referral endoscopy center included patients with symptomatic post-SG stenosis treated with endoscopic balloon dilation (EBD). Stenosis was defined as "organic" if luminal narrowing was evident, "functional" for a deformation, or "combined".

Endoscopic treatment consisted of  $\geq 1$  HD (15-20 mm) and/or  $\geq 1$  PD (30-35 mm). Initial success was defined as improvement of stenosis-related symptoms at 1 month and long-term success as persistence of improvement at last follow-up.

**Results** Forty-four patients (73% women; mean age  $45.5 \pm 11$  years; mean follow-up  $26 \pm 23$  months) underwent EBD between 2013 and 2019. HD and PD were used in 15 (34%) and 29 (66%) patients, respectively, (mean dilation number:  $1.8 \pm 1.1$ ). Post-SG stenoses were considered organic in 10 (23%), functional in 21 (48%), and combined in 13 (29%) patients. Initial success was achieved in 42 (96%) patients, while 35 (80%) patients had no symptom recurrence at last follow-up. Perforation occurred in one patient. HD was more frequently used in organic stenoses (8/10), while PD in functional and combined stenoses (18/21 and 9/13, respectively;  $p < 0.001$ ). Rates of success did not differ by type of stenosis.

**Conclusions** Endoscopic dilation is an effective treatment for post-SG stenoses, providing long-term symptom relief. PD should be preferred in cases of functional stenoses, and HD used for organic stenoses.

## eP154V LUMEN APPOSING METAL STENT (HOT-AXIOS) IN THE TREATMENT OF REFRACTORY PEPTIC DUODENAL STENOSIS

**Authors** Moreira M<sup>1</sup>, Fernandes J<sup>1</sup>, Araújo T<sup>1</sup>, Canena J<sup>2,3</sup>, Lopes L<sup>1,4,5</sup>  
**Institute** 1 Santa Luzia Hospital - Unidade Local de Saúde do Alto Minho, Department of Gastroenterology, Viana do Castelo, Portugal; 2 Professor Doutor Fernando Fonseca Hospital, Department of Gastroenterology, Amadora, Portugal; 3 Nova Medical School/Faculty of Medical Sciences, Department of Gastroenterology, Lisbon, Portugal; 4 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 5 CVS/3B's - PT Government Associate Laboratory, Braga, Portugal

DOI 10.1055/s-0041-1724650

**Citation:** Moreira M, Fernandes J, Araújo T et al. eP154V LUMEN APPOSING METAL STENT (HOT-AXIOS) IN THE TREATMENT OF REFRACTORY PEPTIC DUODENAL STENOSIS. *Endoscopy* 2021; 53: S146.

77-year-old man with a history of duodenal ulcer, admitted to the emergency department for late postprandial vomiting. Upper gastrointestinal endoscopy showed punctiform stenosis in the bulbar vertex with a longitudinal extension of <5 mm.

Several balloon dilation sessions were performed without technical or clinical success.

Given the characteristics of the stenosis, it was decided to place a lumen-apposing metal stent (LAMS), Hot-Axios (15x10 mm) with immediate technical and clinical success, without recurrence of vomiting.

LAMS are being used for the treatment of short segment GI strictures (<10mm) with good clinical and technical outcomes, based in few case reports.

### eP155 ORAL DIET AND SURVIVAL AFTER THE PLACEMENT OF ENTERIC STENS IN ADVANCED GASTRIC NEOPLASMS

**Authors** Moreira M<sup>1</sup>, Leite M<sup>2</sup>, Elisa A<sup>3</sup>, Araújo T<sup>4</sup>, Salústio R<sup>3</sup>, Fazeres F<sup>2</sup>, Ramada J<sup>1</sup>, Canena J<sup>5,6</sup>, Lopes L<sup>1,7,8</sup>

**Institute** 1 Santa Luzia Hospital - Unidade Local de Saúde do Alto Minho, Department of Gastroenterology, Viana do Castelo, Portugal; 2 Santa Luzia Hospital - Unidade Local de Saúde Alto Minho, Department of General Surgery, Viana do Castelo, Portugal; 3 Centro Hospitalar Vilda do Conde e Póvoa do Varzim, Póvoa do Varzim, Portugal; 4 Santa Luzia Hospital - Unidade Local de Saúde Alto Minho, Department of Gastroenterology, Viana do Castelo, Portugal; 5 Professor Doutor Fernando Fonseca Hospital, Department of Gastroenterology, Amadora, Portugal; 6 Nova Medical School/Faculty of Medical Sciences, Department of Gastroenterology, Lisbon, Portugal; 7 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 8 ICVS/3B's - PT Government Associate Laboratory, Braga, Portugal

DOI 10.1055/s-0041-1724651

**Citation:** Moreira M, Leite M, Elisa A et al. eP155 ORAL DIET AND SURVIVAL AFTER THE PLACEMENT OF ENTERIC STENS IN ADVANCED GASTRIC NEOPLASMS. *Endoscopy* 2021; 53: S147.

**Aims** Antro-duodenal segment obstruction (ADSO) is a frequent complication in patients with locally advanced gastric neoplasms. The palliation of these obstructions can be performed with surgery or with the placement of metallic stents.

This study aims to assess the long-term clinical efficacy of enteric prostheses in palliating patients with ADSO for gastric neoplasms.

**Methods** Retrospective, multicenter cohort study, comprising 73 patients with gastric neoplasms who underwent stent placement for ADSO between January 2005 and December 2019. All patients included were followed up to death. The main outcomes assessed were (1) survival and (2) prosthesis patency (3) improvement in oral diet intake. Predictors of prosthesis survival and patency were evaluated using proportional Cox regressions and Kaplan Meier curves.

**Results** Enteric stens were placed in 37 women (50.7%) and 36 men (49.3%), with a median age of 80 years (min. 44; max. 94). The median survival was 100 days (p25 = 38 days; p75 = 264 days). 91.8% (67/73) of the patients maintained an oral diet until death, without the need for surgery. 76.7% (56/74) did not need other endoscopic interventions. 88% of patients maintained a solid diet (GOOSS 2-3) until death. In Cox regression, the only factor associated with increased survival is chemotherapy (hazard ratio = 0.323; 95% confidence interval = 0.159-0.659; p = 0.002).

**Conclusions** Enteric stents are an effective and safe minimally invasive technique for palliation of antro-duodenal segment obstruction caused by gastric neoplasms.

Most patients maintain an oral diet until death, without the need for additional interventions.

### eP156 VARIABILITY IN THE ENDOSCOPIST DETECTION RATE OF GASTRIC PREMALIGNANT CONDITIONS AND ITS CORRELATION WITH THE RATE OF MISSED GASTRIC CANCER DURING A ROUTINE ESOPHAGOGASTRODUODENOSCOPY

**Authors** Delgado-Guillena P<sup>1,2</sup>, Morales-Alvarado V<sup>3</sup>, De Riba-Soler B<sup>3</sup>, Llibre-Nieto G<sup>3</sup>, Jimeno-Ramiro M<sup>4</sup>, Armas-Ramírez I<sup>5</sup>, Levy-Ríos I<sup>6</sup>, Guillena-Castañeda T<sup>6</sup>, Rigau-Cañardo J<sup>3</sup>, Llargues-Rocabruna E<sup>3</sup>, Cordova H<sup>7</sup>, Fernández-Esparrach G<sup>7</sup>

**Institute** 1 Hospital de Mérida, Gastroenterology, Mérida, Spain; 2 University of Barcelona, Medicina, Barcelona, Spain; 3 Hospital General de Granollers, Gastroenterology, Granollers, Spain; 4 Hospital General de Granollers, Pathology, Granollers, Spain; 5 Universidad Nacional de Trujillo, Medicine, Trujillo, Peru; 6 Universidad Nacional de Ucayali, Medicine, Pucallpa, Peru; 7 Hospital Clinic de Barcelona, Endoscopy, Barcelona, Spain

DOI 10.1055/s-0041-1724652

**Citation:** Delgado-Guillena P, Morales-Alvarado V, De Riba-Soler B et al. eP156 VARIABILITY IN THE ENDOSCOPIST DETECTION RATE OF GASTRIC PREMALIGNANT CONDITIONS AND ITS CORRELATION WITH THE RATE OF MISSED GASTRIC CANCER DURING A ROUTINE

ESOPHAGOGASTRODUODENOSCOPY. *Endoscopy* 2021; 53: S147.

**Aims** The recognition of gastric premalignant conditions (GPC) during an esophago-gastro-duodenoscopy (EGD) is variable. Contrary to colonoscopy, in EGD no studies have explored the consequence of this variability in terms of the missed gastric cancer (MGC). Moreover, there is not a clear definition of the endoscopist detection rate (EdrGPC). In our study, we aimed to explore the correlation between the EdrGPC and the endoscopist rate of missed gastric cancer (ErMGC).

**Methods** We designed an observational retrospective study of EGDs performed on adults in a community hospital (Hospital General de Granollers) during a 10-year period (2010-2019). Each EGD with gastric biopsy was categorized based on the most advanced lesion. GPC were atrophy, intestinal metaplasia, and dysplasia. MGC was a patient diagnosed with gastric cancer (GC) and an EGD negative for GC in the 3 years before diagnosis. The number of all EGDs was obtained from Endobase (Olympus). The EdrGPC and ErMGC were calculated for every endoscopist and their correlations were analyzed using the Spearman test.

**Results** 18,635 EGDs were performed by 9 endoscopists, and at least one gastric biopsy was taken in 2,415 EGDs. We identify 533 EGDs with GPC. The EdrGPC varied between 1.77% and 5.46% (using as denominator all EGDs performed by each endoscopist) or between 16.2% and 31.7% (using as denominator only EGDs with gastric biopsy performed by each endoscopist). We identify 255 patients with GC, and 20 (23 EGDs) of them were considered MGC. The ErMGC varied between 0 and 3.29 per 1000 EGDs. The EdrGPC (among all EGD) had a negative correlation with the ErMGC (rs=-0.65, p=0.057), but the correlation was stronger when we considered the EdrGPC among only EGDs with gastric biopsy (rs=-0.71, p=0.03).

**Conclusions** The EdrGPC was variable and had a negative correlation with the ErMGC. Some strategies to reduce the EdrGPC variability should be done.

### eP157 IMPACT OF ENDOSCOPIC DUODENAL AND AMPULLARY RESECTION IN FAP PATIENTS: SPIGELMAN CLASSIFICATION CAN BE CONSIDERED AS OUTDATED EVEN IN STAGE III AND IV

**Authors** Belhassine M<sup>1</sup>, Pérez-Cuadrado Robles E<sup>2</sup>, Dahan K<sup>3</sup>, Leonard D<sup>4</sup>, Kartheuser A<sup>4</sup>, Dano H<sup>5</sup>, Deprez PH<sup>1</sup>

**Institute** 1 Cliniques Universitaires Saint-Luc, Hepato-Gastroenterology, Brussels, Belgium; 2 Hôpital Européen Georges-Pompidou, Interventional Endoscopy, Paris, France; 3 Cliniques Universitaires Saint-Luc, Centre de Génétique Humaine, Brussels, Belgium; 4 Cliniques Universitaires Saint-Luc, STCA, Brussels, Belgium; 5 Cliniques Universitaires Saint-Luc, Pathology, Brussels, Belgium



## DOI 10.1055/s-0041-1724653

**Citation:** Belhassine M, Pérez-Cuadrado Robles E, Dahan K et al. eP157 IMPACT OF ENDOSCOPIC DUODENAL AND AMPULLARY RESECTION IN FAP PATIENTS: SPIGELMAN CLASSIFICATION CAN BE CONSIDERED AS OUTDATED EVEN IN STAGE III AND IV. *Endoscopy* 2021; 53: S147.

**Aims** In familial adenomatous polyposis (FAP) a dedicated endoscopic surveillance with endoscopic resection (ER) of duodenal and ampullary lesions has been proposed by the European guidelines. The Spigelman classification (SC) is used to define surgical indications in patients with advanced duodenal disease. **Aims:** describe the impact of ER in patients with FAP and the role played by SC.

**Methods** This is a national-based observational retrospective study based on a prospective national registry (FAPA 1998-2020). All consecutive >18 years-old patients with genetically confirmed FAP who underwent endoscopic follow-up for duodenal lesions were included. ER was performed according to the characteristics of the lesions (CSP, EMR, ESD, ampullectomy). The demographic, clinical and endoscopic data, SC, presence of an ampullary tumor, and most advanced pathology were noted. The main outcome was to describe the impact of ER by analyzing the occurrence of advanced lesions, and need for surgery.

**Results** One-hundred and eleven patients (25 ± 14 years, 49.5% male) were included with a median f-up of 168 m (range: 6-408) and 10 endoscopies (2-35). The baseline Spigelman stage (median: 1, range:0-4) was classified as 0 (38.9%), I (5.3%), II (13.7%), III (20%) and IV (22.1%) at the beginning of follow-up before endotherapy, and decreased by 1 point at latest endoscopy, with a statistically significant decrease in advanced SC (42.1% vs. 25.3%, p<0.001). Only one case showed an invasive duodenal adenocarcinoma on f-up (1.1%) with a 0-stage in baseline SC. SC was not associated to an increased incidence of cancer (p=0.238) or need for surgery (p=0.662).

**Conclusions** Duodenal endotherapy in FAP patients is effective, with a rare incidence of invasive carcinoma or need for surgery. Patients with a high number of NADTs can be safely treated by endoscopy. Spigelman classification seems outdated since not related to invasive cancer or need for surgery, in patients with regular f-up and ER.

### eP158v LIFE-SAVING ENDOTHERAPY OF A SMALL-BOWEL DIVERTICULAR BLEED FACILITATED BY DOUBLE-BALLOON ENTEROSCOPY IN A PATIENT REFUSING TRANSFUSION, DESPITE CRITICALLY LOW HAEMOGLOBIN (32G/L)

**Authors** Skamnelos A<sup>1</sup>, Murino A<sup>1</sup>, Lazaridis N<sup>1</sup>, Chacchi Cahuin R<sup>1</sup>, Koukias N<sup>1</sup>, Raymond R<sup>1</sup>, EJ Despott<sup>1</sup>

**Institute** 1 The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, Royal Free Unit for Endoscopy, London, United Kingdom

DOI 10.1055/s-0041-1724654

**Citation:** Skamnelos A, Murino A, Lazaridis N et al. eP158v LIFE-SAVING ENDOTHERAPY OF A SMALL-BOWEL DIVERTICULAR BLEED FACILITATED BY DOUBLE-BALLOON ENTEROSCOPY IN A PATIENT REFUSING TRANSFUSION, DESPITE CRITICALLY LOW HAEMOGLOBIN (32G/L). *Endoscopy* 2021; 53: S148. A 65-year-old man presented with life-threatening small-bowel bleeding. Despite critically low haemoglobin (Hb) levels (32g/l) and counselling regarding risk, the patient refused blood transfusion due to religious beliefs.

A small-bowel capsule endoscopy-guided emergency anterograde double-balloon enteroscopy (DBE) was performed on the intensive-care unit (ICU). Active bleeding was identified at a sizable small-bowel diverticulum. Endo-clip haemostasis was achieved successfully. During 6-months of follow-up, there was no recurrence of bleeding.

This case demonstrates the clinical usefulness of DBE-facilitated endotherapy in the context of life-threatening small-bowel bleeding; even in such a challenging scenario with a critically low Hb in a patient refusing transfusion.

### eP159v RETROGRADE ENTEROSCOPY WITH A STANDARD COLONOSCOPE IN A PATIENT OF OBSCURE GI BLEED

**Author** Raina H<sup>1</sup>

**Institute** 1 Ivy Hospital, Gastroenterology and Hepatology, Amritsar, India

DOI 10.1055/s-0041-1724655

**Citation:** Raina H eP159v RETROGRADE ENTEROSCOPY WITH A STANDARD COLONOSCOPE IN A PATIENT OF OBSCURE GI BLEED. *Endoscopy* 2021; 53: S148. A 62 year female presented with bleeding P/R for 3 months. EGD and colonoscopy done outside were normal. CECT showed a suspected thickening/lesion in the right lumbar region. I did a colonoscopy and didn't find any source of bleeding till caecal pole. I decided to intubate the ileum and to go as deep as possible with the same colonoscope as enteroscope was not available. I found a polypoidal tumor in the terminal ileum at about 60-70 cms from the I/C valve. I took biopsies and histopathology report came as adeno carcinoma. She underwent surgery and now patient is doing well.

### eP160v ENDOSCOPIC REMOVAL OF A MOBILE PHONE FROM THE GASTRIC CAVITY: FEASIBLE OR NOT FEASIBLE?

**Authors** Martino A<sup>1</sup>, Menchise A<sup>1</sup>, Oliva G<sup>2</sup>, Bennato R<sup>1</sup>, FP Zito<sup>1</sup>, Romano L<sup>2</sup>, Lombardi G<sup>1</sup>

**Institute** 1 AORN "Antonio Cardarelli", Department of Gastroenterology and Digestive Endoscopy, Napoli, Italy; 2 AORN "Antonio Cardarelli", Department of General and Emergency Radiology, Napoli, Italy

DOI 10.1055/s-0041-1724656

**Citation:** Martino A, Menchise A, Oliva G et al. eP160v ENDOSCOPIC REMOVAL OF A MOBILE PHONE FROM THE GASTRIC CAVITY: FEASIBLE OR NOT FEASIBLE?. *Endoscopy* 2021; 53: S148.

40-year-old male prisoner was admitted due to mobile phone (MP) ingestion. X-ray showed a 70x15 mm gastric foreign body (FB), without perforation. Urgent EGD under general anesthesia revealed the MP within the stomach. The MP was grasped at its very end using a snare, gently pulled through the lower esophageal sphincter by slightly rotating the scope and finally successfully retrieved. Postoperative CT showed neither visceral injuries nor free air. Endoscopic removal of a MP in the stomach is feasible and effective. It should be attempted in a step-up approach, followed, if necessary, by surgery within the same operative session.

### eP161 EOSINOPHILIC GASTROINTESTINAL DISORDERS: ENDOSCOPIC FEATURES AND TREATMENT

**Authors** Bradai S<sup>1</sup>, Mahmoudi M<sup>1</sup>, Khsiba A<sup>1</sup>, Ben mohamed A<sup>1</sup>, Medhioub M<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

DOI 10.1055/s-0041-1724657

**Citation:** Bradai S, Mahmoudi M, Khsiba A et al. eP161 EOSINOPHILIC GASTROINTESTINAL DISORDERS: ENDOSCOPIC FEATURES AND TREATMENT. *Endoscopy* 2021; 53: S148.

**Aims** Eosinophilic digestive disorders (EGD) are a rare condition characterized by extensive eosinophilic infiltration of a segment of the digestive tract. The goal of our work is to study the clinical, endoscopic and therapeutic characteristics of EGD.

**Methods** This is a retrospective, descriptive study during 9 years (2010-2019) including all the patients treated in our department for an EGD. The diagnosis was established by the presence of eosinophilic infiltration of the digestive wall on the biopsies and after exclusion of any parasitic cause or extra digestive disease. Eosinophilic esophagitis was not included in this report.

**Results** Fifteen cases were collected, 10 women and 5 men. The average age was 43 years [12–74 years]. Our study included 5 cases of eosinophilic gastritis

(EG), 2 cases of eosinophilic gastroenteritis (EGE) and 8 cases of eosinophilic colitis (EC). Associated atopy was found in 5 patients. Revealing symptoms were chronic diarrhea in 7 cases, abdominal pain in 6 cases, vomiting in 2 cases and ascites in 2 cases. Blood hypereosinophilia was noted in 6 patients (40%). An immunoglobulin E (IgE) test was performed in 10 patients and showed a high level in four cases. For EG and EGE, upper gastrointestinal endoscopy showed nodular gastric mucosa in 3 cases, erosive gastric lesions in 2 cases, congestive gastric mucosa in 2 cases and nodular duodenal mucosa in 1 case. For EC, ileocolonoscopy was normal in the majority of cases (n = 6) and showed superficial colonic ulcerations in 2 cases. The treatment recommended in our patients was based on transit retarders in 2 cases, salicylates in 6 cases and systemic corticosteroid therapy in 5 cases. The evolution was favorable in the majority of cases. A single patient, with EGE, presented with a relapse following stopping corticosteroids and requiring the use of thiopurines.

**Conclusions** EGD remains a rare disease although its frequency is increasing over the years. Unexplained digestive symptomatology must suggest this diagnosis.

### eP162 HYPERPLASTIC GASTRIC POLYPS: ABOUT 74 CASES

**Authors** Bradai S<sup>1</sup>, Khsiba A<sup>1</sup>, Mahmoudi M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Medhioub M<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724658

**Citation:** Bradai S, Khsiba A, Mahmoudi M et al. eP162 HYPERPLASTIC GASTRIC POLYPS: ABOUT 74 CASES. *Endoscopy* 2021; 53: S149.

**Aims** Hyperplastic polyps are among the most common gastric polyps. They are most commonly associated with chronic gastritis (*Helicobacter pylori* or auto-immune-induced). The aim of this work is to study the clinical, endoscopic and histopathological aspects of hyperplastic gastric polyps.

**Methods** This was a retrospective study including 74 cases of hyperplastic gastric polyps between 2008 and 2019. Clinical, endoscopic and histological data have been reported.

**Results** Our serie included 74 cases of hyperplastic gastric polyps in 53 patients. The average age was 63 (range 19-82). Upper endoscopy was motivated predominantly by the exploration of epigastralgia in 53% (n=28) and iron deficiency anemia in 25% (n=13). The average size of polyps was 8.1 mm (3 to 35 mm). Polyps were centimetric or supra centimetric in 32% of cases (n=24). Polyps were sessile in 85% of cases (n=63). The site of polyps was the antrum in 54%, the fundus in 34% and bifocal in 12%. Histologically, associated gastritis was found in 100% of cases. The presence of *Helicobacter pylori* was noted in 82% of cases. Eight patients had fundal atrophy (15%). There were lesions of intestinal metaplasia in 20 patients (37%), and endocrine hyperplasia in 7 patients (13%). Only two polyps had low-grade dysplastic lesions (3%). They measured 20 et 35 mm.

**Conclusions** The management of hyperplastic polyps remains controversial. It is important to treat the underlying lesion which is often represented by *helicobacter pylori* gastritis. The prevalence of dysplasia was 3% in our serie.

### eP163 NEW ENDOSCOPIC CLASSIFICATION OF GASTRIC ANTRAL VASCULAR ECTASIA BY NARROW SPECTRUM TECHNOLOGY IN PATIENTS WITH LIVER CIRRHOSIS

**Authors** Abd Elmoneim RS<sup>1</sup>, Abd Elmoety A<sup>1</sup>, Salem P<sup>1</sup>, Baddour N<sup>2</sup>, Metaweia M<sup>1</sup>

**Institute** 1 Alexandria University, Internal Medicine, Alexandria, Egypt; 2 Alexandria University, Pathology, Alexandria, Egypt

**DOI** 10.1055/s-0041-1724659

**Citation:** Abd Elmoneim RS, Abd Elmoety A, Salem P et al. eP163 NEW

### ENDOSCOPIC CLASSIFICATION OF GASTRIC ANTRAL VASCULAR ECTASIA BY NARROW SPECTRUM TECHNOLOGY IN PATIENTS WITH LIVER CIRRHOSIS.

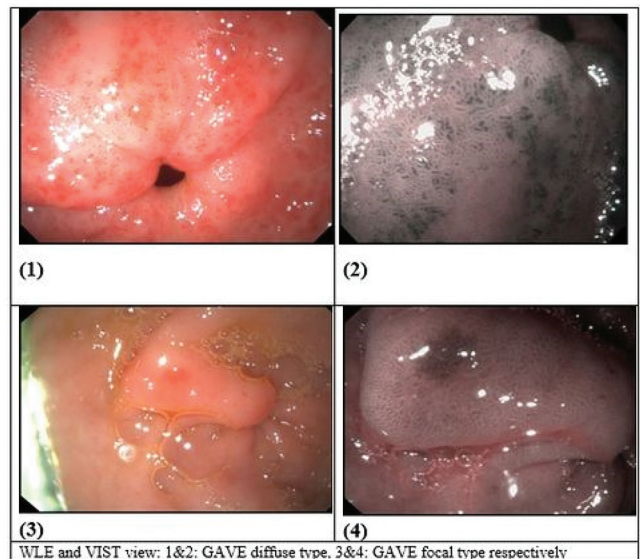
*Endoscopy* 2021; 53: S149.

**Aims:** Aim of our study was to assess the efficacy of narrow band technology in comparison to histopathology in diagnosis and classification of GAVE.

**Methods** A cross-sectional study included 50 patients with liver cirrhosis recruited from Alexandria Main University Hospital. Patients with connective tissue diseases, chronic kidney disease were excluded. All patients were examined by both conventional White Light Endoscopy (WLE) and Narrow Band Technology Video Intelligent Staining Technology (VIST) using Sonoscape endoscope HD500. GAVE was diagnosed as tortuous columns of ectatic vessels in the gastric antrum. Histopathological examination was used as the gold standard tool for diagnosis of GAVE.

**Results** Total of 50 patients were included, 28 patients (56%) were diagnosed as GAVE by pathology vs 22 (44%) as non-GAVE. VIST detected in 23/28 (78.6%) of cases of GAVE. In comparison to pathology, VIST had superior sensitivity than WLE in detection of GAVE, 82.1% vs 59.1%. While WLE had higher specificity 95.5% vs 7.1% by VIST. There was no statistical significance between VIST and pathology in diagnosis of GAVE, but statistical significance was found in favor to VIST compared to WLE, p<0.001. VIST has identified two types of GAVE, Focal (13/28) cases and Diffuse in (10/28), where five only were not diagnosed by VIST.

**Conclusions** Narrow Spectrum Technology as VIST could be used as an alternative tool to histopathological diagnosis of GAVE. GAVE can be focal group of ectatic vessels which adds a new class to GAVE classification that was misdiagnosed before.



**Fig.1**

### eP164 CLINICAL USEFULNESS OF NASOPHARYNGEAL AIRWAY (NPA) IN SNORING PATIENTS DURING GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION

**Authors** Seo J<sup>1</sup>, Jeon YT<sup>1</sup>, Bang EJ<sup>1</sup>, Ha YW<sup>1</sup>, Lee KW<sup>1</sup>, Kim SH<sup>1</sup>, Jeon HJ<sup>1</sup>, Lee JM<sup>1</sup>, Choi HS<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Lee HS<sup>1</sup>, Chun HJ<sup>1</sup>

**Institute** 1 Korea University College of Medicine, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Seoul, Korea, Republic of  
**DOI** 10.1055/s-0041-1724660

**Citation:** Seo J, Jeon YT, Bang EJ et al. eP164 CLINICAL USEFULNESS OF NASOPHARYNGEAL AIRWAY (NPA) IN SNORING PATIENTS DURING GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION. *Endoscopy* 2021; 53: S149.

**Aims** When sedative ESD is performed, snoring or sleep apnea sometimes occurs, which can lead to SpO2 decrease. Snoring increases the movement of the diaphragm. Result in increased movement of target lesion during procedure.

This makes Knife difficult to cut in the desired position. There is a study suggesting that the use of NPA improves the reduction of SpO<sub>2</sub> in sedative endoscopy. The purpose of this study is to evaluate the stability of target lesion movement, convenience and safety of the procedure when NPA are used in snoring patients during sedative gastric ESD.

**Methods** All patients who received ESD (with or without NPA apply) were sedated using propofol. In the intervention group a Nasopharyngeal airway was inserted once the patients reached the desired level of sedation. The primary outcome measure was dissection time and total procedure time of the procedure when NPA are used in snoring patients under ESD. Secondary outcome measures included SpO<sub>2</sub> (%) and target lesion movement (graded score 0~5 point,

0: no movement,

1: a little,

2: mild,

3: moderate,

4: severe,

5: very severe movement) before and after NPA apply.

**Results** 22 cases were performed ESD using NPA. 12 cases were performed ESD non-using NPA. There was no difference in procedure time between the two groups. Five cases reported reduced SpO<sub>2</sub> under 90% before ESD. There was an increase in oxygen saturation upper 95% after the NPA was applied. When comparing before and after using NPA apply, NPA group was less target lesion movement fluctuation. (before vs after NPA apply movement score: 4 vs 1).

**Table 1. Characteristics**

Characteristics	Mean ± SD
Age	65.4 ± 12.0
Sex (M : F)	14 : 8
BMI	25.3 ± 3.8
Mallampati score	2 (36.3%) 3 (59.1%) 4 ( 4.6%)
Pre procedure sPO <sub>2</sub> (%)	95.8 ± 4.2(%)

**Table 2. Comparing before and after using NPA apply**

	Pre-NPA	NPA apply	P-value
Dissection time(min)	16.25	19.42	0.864 <sup>*</sup>
total procedure time	36.66	38.46	0.319 <sup>*</sup>
Resection size(cm)	36.5	43.33	0.045 <sup>*</sup>

\* P value calculated by using the Wilcoxon

**Table 3. Five Pre-procedure desaturation event cases**

	Non-NPA saturation(%)	NPA apply saturation(%)	Mallampati score	Dissection time(min)	Resection size	Location	Pathology
case1	82(%)	97(%)	3	24	40mm	Lowbody/Lesser	High grade dysplasia
case2	79(%)	96(%)	4	23	20mm	Midbody/Lesser	Neuroendocrine
case3	84(%)	98(%)	3	20	30mm	Lowbody/Anterior	High grade dysplasia
case4	89(%)	98(%)	3	13	35mm	Antrum/Lesser	Low grade dysplasia
case5	87(%)	99(%)	3	19	40mm	Angle	adenocarcinoma/MD

## Conclusions

ESD with NPA apply is lead to avoidance of fatal respiratory complications during ESD under propofol-induced sedation.ESD with NPA apply is lead to a successful ESD snoring patients with severe target lesion movement.

## eP165 GASTRIC POLYPS: CLINICAL, ENDOSCOPIC AND PATHOLOGICAL FEATURES

**Authors** Bradai S<sup>1</sup>, Khsiba A<sup>1</sup>, Medhioub M<sup>1</sup>, Mahmoudi M<sup>1</sup>, Ben mohamed A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724661

**Citation:** Bradai S, Khsiba A, Medhioub M et al. eP165 GASTRIC POLYPS: CLINICAL, ENDOSCOPIC AND PATHOLOGICAL FEATURES. Endoscopy 2021; 53: S150.

**Aims** Gastric polyps are fairly frequent but they are asymptomatic lesions discovered incidentally on endoscopic examinations performed for various reasons. The objective of this study is to describe their anatomoclinical and endoscopic features.

**Methods** This is a descriptive retrospective study including patients who underwent endoscopic resection of gastric polyps between 2008 and 2019.

**Results** Our serie included 69 patients (39 women and 30 men). The average age was 64 (range 19-82). Upper endoscopy was motivated by epigastralgia in 51% (n=35), exploration of anemia in 32% (n=22) and upper gastrointestinal bleeding in 10% (n=7). Ninety gastric polyps were collected. The polyp was unique in 55 patients, bifocal in 9 patients and multiple in 5 cases. The average size of polyps was 8.4 mm (3 to 40 mm). They were sessile in 78% (n=70). The antrum was the most common site of polyps was in 55%, the fundus was involved in 36% and they were bifocal in 9% of cases. Ten polyps were covered by ulcerated mucosa (10%). Pathological examination revealed 74 cases of hyperplastic polyp (82%), six cases of inflammatory fibroid polyp (7%), three cases of neuroendocrine tumors (3%), two cases of adenomatous polyp (2%), two cases of hamartomatous polyp, a case of fundic gland polyp, a case of xanthoma and a case of kaposi sarcoma. Histologically, associated gastritis was found in 87% of cases (n=60). Ten patients had fundal atrophy (14,5%). The presence of Helicobacter Pylori was noted in 72% of cases (n=49). There were lesions of intestinal metaplasia in 25 patients (36%) and endocrine hyperplasia in 10 patients (14,5%). Of all the resected polyps, only three had low-grade dysplastic lesions (3%).

**Conclusions** Gastric polyps are less frequent than colonic polyps with a high proportion of hyperplastic polyps (82% in our serie).

## eP166 COWDEN SYNDROME: CASE REPORT

**Authors** Sofianidis G<sup>1</sup>, Moschos I<sup>2</sup>, Tikos G<sup>1</sup>, Paikos A<sup>1</sup>, Evagelopoulou K<sup>1</sup>, Paikos D<sup>1</sup>

**Institute** 1 G Genimatas Hospital, Gastroenterology, Thessaloniki, Greece; 2 International Hellenic University, Thessaloniki, Greece

**DOI** 10.1055/s-0041-1724662

**Citation:** Sofianidis G, Moschos I, Tikos G et al. eP166 COWDEN SYNDROME: CASE REPORT. Endoscopy 2021; 53: S150.

**Aims** Cowden syndrome (CS) is a rare disease, inherited in an autosomal dominant pattern with an estimated incidence 1 in 200,000 to 250,000 people. It is associated with germline mutations in the phosphatase and tensin homologue (PTEN) gene. The pathognomonic features of CS are mucocutaneous lesions (trichilemmomas, acral ceratosis and papillomatous lesions). Patients with CS have a high lifetime risk of breast, thyroid, uterine, and other cancers. Gastrointestinal polyposis is a common manifestation and can occur throughout the entire tract.

**Methods** A 30-year-old, non-smoker male presented with epigastric pain and dyspeptic disorders. At clinical examination, macrocephaly was observed, whereas laboratory results and sonography of liver/bile ducts were all normal.



Gastroscopy revealed esophageal acanthosis and multiple gastric/duodenal polyps. Under the suspicion of a possible hereditary polyposis syndrome, colonoscopy and capsule endoscopy were also performed. In capsule endoscopy, the known gastric and duodenal polyps were noted, whereas such polyps were also revealed up to the proximal jejunum (Fig.1).

**Results** In colonoscopy, we had the same findings with multiple polyps (0,2-0,8cm) throughout the entire length of colon and biopsies revealed hamartomatous polyps.

Genetic analysis of the phosphatase and tensin homologue (PTEN) gene revealed a heterozygous transition of G to C at nucleotide 165 in exon 3 (c165-1G>C). The rest genetic analysis was normal. Given the lifetime risk of cancers and especially of breast, thyroid and uterine is high, our patient carried out screening tests (sonography of thyroid, uterine and mammogram) with normal findings.

**Conclusions** Cowden syndrome is likely to be underdiagnosed. In cases with multi-organ tumors, diagnostic criteria for CS should be sought in order to increase the diagnostic rates. This is critically important due to syndrome's cancer predisposition. Cancer surveillance for carcinoma detection in the early and curative stages remains the critical aspect of management.

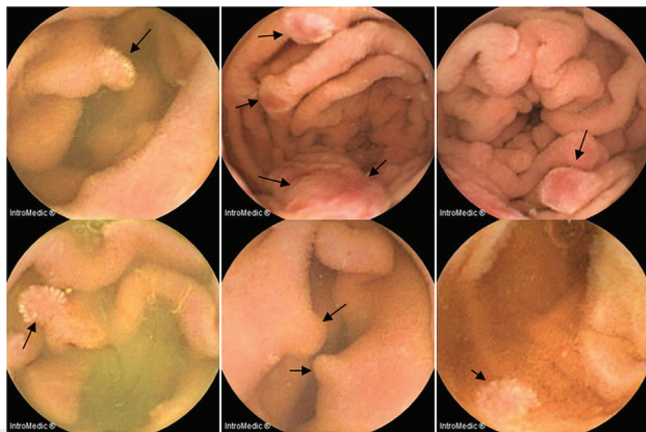


Fig.1

## eP167 POST-PYLORIC ENTERAL FEEDING TUBE PLACEMENT: ELETROMAGNETIC OR ENDOSCOPIC GUIDED? A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

**Authors** Catache Mancini F<sup>1</sup>, Pereira Funari M<sup>1</sup>, de Moura DTH<sup>1</sup>, Marques Bernardo W<sup>1</sup>, Massaro Takamatsu Sagae V<sup>1</sup>, Ide E<sup>1</sup>, Makoto Sakai C<sup>1</sup>, Lopes Ponte Neto F<sup>1</sup>, Joaquin Ortiz Mendieta P<sup>1</sup>, Guimarães Hourmeaux de Moura E<sup>1</sup>

**Institute** 1 Hospital das Clínicas da Faculdade de Medicina da USP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil

DOI 10.1055/s-0041-1724663

**Citation:** Catache Mancini F, Pereira Funari M, de Moura DTH et al. eP167 POST-PYLORIC ENTERAL FEEDING TUBE PLACEMENT: ELETROMAGNETIC OR ENDOSCOPIC GUIDED? A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. *Endoscopy* 2021; 53: S151.

**Aims** To compare endoscopic-guided placement and eletromagnetic-guided placement of enteral feeding tubes in post-pyloric position based on randomized controlled trials (RCTs).

**Methods** The study was conducted in accordance with the PRISMA guidelines. Electronic searches were performed using MEDLINE, EMBASE, Cochrane CENTRAL, and Lilacs/Bireme databases from their dates of inception to October 2020.

**Results** A total of 536 patients from 4 RCTs were analyzed. There was statistical difference regarding time between physician's order and initiation of tube feeding favoring EMGP (MD: -134.37 [-162.13, -106.61],  $p < 0.00001$ ,  $I^2 =$

35%); and cost (MD: -126.63 [-134.05, -119.20],  $p < 0.00001$ ,  $I^2 = 0\%$ ); and no statistical difference regarding post-pyloric position (87% vs 88%; RD: -0.01 [-0.07, 0.05],  $p = 0.68$ ,  $I^2 = 0\%$ ), tube-related complications (33% vs 25%; RD: 0.07 [-0.01, 0.15],  $p = 0.07$ ,  $I^2 = 0\%$ ), patient-related complications (5% vs 6%; RD: -0.01 [-0.05, 0.02],  $p = 0.47$ ,  $I^2 = 0\%$ ), procedure time (MD: 0.81 [-7.2, 8.82],  $p = 0.84$ ,  $I^2 = 99\%$ ), time in the right position (MD: -0.89 [-3.37, 1.58],  $p = 0.48$ ,  $I^2 = 93\%$ ).

**Conclusions** EMGP and EGP presented lower cost and reduced time for accessing nutritional intake after treatment definition, and same rate of success, procedure time, complication rates, and time in the right position. EMGP may be recommended as an option for the placement of post-pyloric enteral feeding tubes.

## eP168 COMPLICATED GASTRIC DUPLICATION CYST IN ADULT: A CASE REPORT

**Authors** Keeratibharat N<sup>1</sup>, Chansangrat J<sup>2</sup>

**Institute** 1 Institute of Medicine, Suranaree University of Technology, Surgery, Muang, Nakhon Ratchasima, Thailand; 2 Institute of Medicine, Suranaree University of Technology, Radiology, Muang, Nakhon Ratchasima, Thailand  
DOI 10.1055/s-0041-1724664

**Citation:** Keeratibharat N, Chansangrat J eP168 COMPLICATED GASTRIC DUPLICATION CYST IN ADULT: A CASE REPORT. *Endoscopy* 2021; 53: S151.

**Aims** Gastric duplication cyst is a very rare gastrointestinal congenital congenital anomaly and most of the cases are diagnosed in the neonatal period. It is rarely observed in adults. Gastric duplication cysts are usually asymptomatic and usually discovered incidentally during endoscopy or laparotomy or very rarely after getting complicated. Accurate diagnosis of these cysts before resection is difficult. Differential diagnoses are varied, including gastrointestinal stromal tumors (GISTs), neuroendocrine tumors, pancreatic pseudocysts, and neurogenic tumors. Malignant transformation of a gastric duplication cyst is very rare. We present a case of complicated noncommunicating gastric duplication cysts in adults who presented with clinical of gastric outlet obstruction and successful endoscopic treatment.

**Methods** We present a case of complicated noncommunicating gastric duplication cysts in adults who presented with clinical of gastric outlet obstruction and successful endoscopic treatment.

**Results** A 55-year-old man presented with recurrent epigastric pain and fullness for four months. No significant findings were noted during physical examination and routine blood tests. A contrast-enhanced abdominal computed tomography scan demonstrated a cystic lesion without any significant enhancement at the first part of duodenum. The lesion was initially thought to be a duodenal duplication cyst. The patient underwent a gastroscope and it was noted a circumferential antrum bulging with smooth mucosa. An endoscopic ultrasound was showed anechoic, homogenous lesions with regular margins arising from the submucosal layer at antrum. Endoscopic gastrocystostomy was performed. The patient was discharged in good condition after 2 days.

**Conclusions** In conclusion, a gastric duplication cyst is a rare congenital anomaly that is difficult to diagnose definitively. It should be considered as a differential diagnosis of gastric cystic lesions. Simple surgical excision is considered the optimal therapy. When a complete excision of these cysts is not possible cystogastrostomy, or partial gastrectomy is done.

## eP169 NON-IGE-MEDIATED FOOD ALLERGY MAY BE THE CAUSE OF CHRONIC BLOODY DIARRHEA

**Authors** Shabana H<sup>1</sup>, Askar M<sup>2</sup>

**Institute** 1 Mansoura University, Specialized Medical Hospital, Internal Medicine, Gastroenterology & Hepatology Unit, Mansoura, Egypt; 2 Ministry of Health, Blood Bank, Mansoura, Egypt  
DOI 10.1055/s-0041-1724665

**Citation:** Shabana H, Askar M eP169 NON-IGE-MEDIATED FOOD ALLERGY MAY BE THE CAUSE OF CHRONIC BLOODY DIARRHEA. *Endoscopy* 2021; 53: S151.



**Aims** To diagnose the cause of chronic bloody diarrhea associated with weight loss in a 17-year-old female.

**Methods** A 17-year-old female complaining of bloody diarrhea for 2 years. The condition was associated with significant loss of weight, epigastric, and periumbilical pain. There was associated skin allergy with itching and scratch marks. Six months ago, she had hematemesis, epistaxis, and menorrhagia.

**Results:** Laboratory investigations showed Hb;10.9 g/dl,MCV;82.9 fL, MCH;24.6 pg;MCHC;29.7 g/dl,PLT:198000/ul, WBCs;5500, Neutrophils; 54%, lymphocytes;42%, Eosinophils;1.4%, INR;1.4, APTT;31seconds,IgE;110lu/ml(N up to 210 lu/ml, Anti-endomysial Ab IgA, pANCA, ASCA,ASO were negative, fecal calprotectin was 26µg/mg (N up to 50 µg/mg), TSH:3 mIU/L,ESR;36 1st hour,67 2nd hour, Stool analysis showed pus cells 15-20/HPF,RBCs 20/HPF. Stool culture and sensitivity was negative.

**Abdominal Ultrasonography&MRI enterography** showed normal examination.

**Upper &lower GIT endoscopy with multiple biopsies** showed intact esophageal mucosa, mild superficial gastritis, mild non-specific duodenitis, mild ileal enteritis, right colon showed mild focal colitis with some eosinophils (5-10/HPF), left colon showed mild focal colitis. The patient's symptoms improved on elemental diet & topical steroid.

**Conclusions** Non-IgE-mediated food allergy may be the cause of chronic bloody diarrhea associated with loss of weight.

## eP170v RAPUNZEL SYNDROME

**Authors** Ghoneem E<sup>1,2</sup>, Mehrez Gad A<sup>3,4</sup>, Shiha G<sup>1,2</sup>, Elbasiuny A<sup>2</sup>

**Institute** 1 Faculty of Medicine, Mansoura University, Gastroenterology and Hepatology, Mansoura, Egypt; 2 Egyptian Liver Research Institute and Hospital (ELRIAH), Gastroenterology and Hepatology, Mansoura, Egypt; 3 El Mahalla Liver Teaching Hospital, Gastro-Intestinal and Liver Surgery, El Mahalla, Egypt; 4 Egyptian Liver Research Institute and Hospital (ELRIAH), Gastro-Intestinal and Liver Surgery, Mansoura, Egypt

DOI 10.1055/s-0041-1724668

**Citation:** Ghoneem E, Mehrez Gad A, Shiha G et al. eP170V RAPUNZEL SYNDROME. *Endoscopy* 2021; 53: S152.

Rapunzel Syndrome occur in up to 1/3 of tracheobezoar cases. It characterized by presence of the hair ball in the stomach with tail like extension to the intestine. The most common presentations are abdominal pain, nausea and vomiting, obstruction, and peritonitis. Rarely, weight loss, anorexia, hematemesis, and intussusceptions can occurred. We present a case of 28 years old female presented with refractory reflux symptoms and dyspepsia. EGD showed tracheobezoar with its tail extend deep to the duodenum. Laparoscopic gastrotomy of the anterior surface of the stomach and extraction of bezoar through fenestil incision with stomach closure using staplers.

## eP171 EFFECTIVENESS OF GASTRIC ELECTRICAL STIMULATION IS RELATED WITH REGIONAL EXPRESSION OF INTERSTITIAL CELLS OF CAJAL IN PORCINE STOMACH

**Authors** Kim SH<sup>1</sup>, Kim HB<sup>2</sup>, Chun HJ<sup>1</sup>, Choi HS<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Joo MK<sup>1</sup>, Lee BJ<sup>1</sup>, Park JJ<sup>1</sup>

**Institute** 1 Korea University College of Medicine, Seoul, Korea, Republic of; 2 Seoul National University, Seoul, Korea, Republic of

DOI 10.1055/s-0041-1724667

**Citation:** Kim SH, Kim HB, Chun HJ et al. eP171 EFFECTIVENESS OF GASTRIC ELECTRICAL STIMULATION IS RELATED WITH REGIONAL EXPRESSION OF INTERSTITIAL CELLS OF CAJAL IN PORCINE STOMACH. *Endoscopy* 2021; 53: S152.

**Aims** Stomach is composed with several types of interstitial cells of Cajal (ICC). Among ICCs, myenteric ICC (ICC-MY) serve as a pacemaker which creates the bioelectrical slow wave potential that leads to contraction of the smooth muscle. Moreover, the ICC-MY responses to an external electrical stimulation. We

performed to investigate a proper electrical parameter to cause resonance of contraction of muscle.

**Methods** We conducted a square wave-electrical stimulation with variable duty cycle of 1000, 1500 and 2000 us, fixing frequency of 100 Hz, potential of 5 V, and delay of 100 ms for rat. We assessed immunohistochemistry of c-kit which are necessary for the generation of slow waves. C-kit positive ICC for body and fundus part of the rat' stomach was analyzed by measuring changes in area with ImageJ.

**Results** The area of c-kit positive ICC-MY for the body and fundus part of stomach was linearly decreased with increasing in duty cycle, that is, stimulation strength. The decreasing rate was the same for the body and fundus. The decreasing means ICC-MY act as responder to external electric stimulation. This stimulation may be utilized to activate the stomach forcibly.

**Conclusions** Intensity and distribution of interstitial cells of cajal in gastrointestinal tract might affect the efficacy of gastric electrical stimulation.

## eP172 BAMBOO JOINT-LIKE APPEARANCE IN STOMACH – AN ENDOSCOPIC FINDING SPECIFIC FOR CROHN'S DISEASE

**Authors** Graca-Pakulska K<sup>1</sup>, Dąbkowski K<sup>1</sup>, Zawada I<sup>1</sup>, Deskur A<sup>1</sup>, Urasińska E<sup>2</sup>, Bielicki D<sup>1</sup>, Starzyńska T<sup>1</sup>

**Institute** 1 Pomeranian Medical University, Department of Gastroenterology, Szczecin, Poland; 2 Pomeranian Medical University, Department of Pathology, Szczecin, Poland

DOI 10.1055/s-0041-1724668

**Citation:** Graca-Pakulska K, Dąbkowski K, Zawada I et al. eP172 BAMBOO JOINT-LIKE APPEARANCE IN STOMACH – AN ENDOSCOPIC FINDING SPECIFIC FOR CROHN'S DISEASE. *Endoscopy* 2021; 53: S152.

**Aims** An endoscopic sign of a bamboo joint-like appearance (BJA) of the gastric body and cardia was described and its possible association with Crohn's disease (CD) was suggested. Our aim was to investigate the prevalence and characteristic of upper gastrointestinal involvement in patients with CD, with special focus on the presence of BJA lesions.

**Methods** 359 patients were included, 83 with CD (42 female, 41 male) and 276 gender and age matched non-IBD controls. The endoscopy was performed by experienced physician using a high definition endoscope with narrow band image. The biopsies were taken for histological assessment from normal mucosa and any abnormal lesions. H.pylori (Hp) status was assessed. The endoscopic results in CD patients were compared with clinical parameters as patient's sex, age, medications taken, the extent and the course of the disease (student's test).

**Results** The upper gastrointestinal tract was involved in 70 out of 83 (84.34%) patients with CD. Most commonly stomach (n= 64,77.11%), followed by duodenum (n= 31, 37.35%) and oesophagus (n= 11, 13.25%) were involved. 28 (33,73%) CD patients had BJA in proximal part of gastric body or/and fundus. BJA was present irrespectively of the patient's sex, age and medications taken. The positive association was found between BJA presence and extensive CD. BJA was absent in control group (p<0.001). Hp negative, focal chronic gastritis was present in CD patients. Only 3 CD patients were H. pylori positive (3.6%). In comparison, the most of patients in control group had Hp infection (58,33%).

**Conclusions** The upper gastrointestinal tract is often involved in Crohn's disease. The most commonly affected area is the stomach with a specific lesion for CD, the bamboo joint-like appearance. Patients exhibiting this endoscopic feature should undergo further examinations due to high probability of CD.

## eP173 INTER-OBSERVER AGREEMENT OF THE PARIS AND THE SIMPLIFIED CLASSIFICATIONS OF SUPERFICIAL COLONIC LESIONS: A WESTERN STUDY

**Authors** Cocomazzi F<sup>1</sup>, Gentile M<sup>1</sup>, Perri F<sup>1</sup>, Merla A<sup>1</sup>, Bossa F<sup>1</sup>, Piazzolla M<sup>2</sup>, Ippolito A<sup>1</sup>, Terracciano F<sup>1</sup>, Giuliani AP<sup>1</sup>, Cubisino R<sup>1</sup>, Marra A<sup>1</sup>, Carparelli S<sup>1</sup>, Mileti A<sup>2</sup>, Paolillo R<sup>2</sup>, Fontana A<sup>3</sup>, Copetti M<sup>3</sup>, Di Leo A<sup>2</sup>, Andriulli A<sup>1</sup>

**Institute** 1 Casa Sollievo della Sofferenza IRCCS, Gastroenterology and Endoscopy Unit, San Giovanni Rotondo, Italy; 2 University of Bari, Gastroenterology, Bari, Italy; 3 Casa Sollievo della Sofferenza IRCCS, Unit of Biostatistics, San Giovanni Rotondo, Italy

**DOI** 10.1055/s-0041-1724669

**Citation:** Cocomazzi F, Gentile M, Perri F et al. eP173 INTER-OBSERVER AGREEMENT OF THE PARIS AND THE SIMPLIFIED CLASSIFICATIONS OF SUPERFICIAL COLONIC LESIONS: A WESTERN STUDY. *Endoscopy* 2021; 53: S153.

**Aims** The Paris classification of superficial colonic lesions is widely adopted, but a simplified description which subgroups the shape into pedunculated, sessile/flat and depressed lesions has been proposed recently. To evaluate accuracy and inter-rater agreement among 13 Western endoscopists for the two classification systems.

**Methods** Seventy video clips of superficial colonic lesions were classified according to the two classifications, and their size estimated. The inter-observer agreement for each classification was assessed using both Cohen  $\kappa$  and AC1 statistics. Accuracy was taken as the concordance between the standard morphology definition and that made by participants. Sensitivity analyses investigated agreement between trainees (T) and staff members (SM), simple or mixed lesions, distinct lesion phenotypes, and for laterally spreading tumors (LSTs).

**Results** Overall, the inter-observer agreement for the Paris classification was substantial ( $\kappa=0.61$ ; AC1=0.66), with 79.3% accuracy. Between SM and T, the values were superimposable. For size estimation the agreement was 0.48 by the  $\kappa$ -value, and 0.50 by AC1. For single or mixed lesions  $\kappa$ -values were 0.60 and 0.43, respectively; corresponding AC1 values were 0.68 and 0.57. Evaluating separately the several different polyp subtypes, agreement differed significantly when analyzed by the  $\kappa$ -statistics (0.08-0.12) or the AC1 Statistics (0.59-0.71). Analyses of LSTs provided a  $\kappa$ -value of 0.50 and an AC1 score of 0.62, with 77.6% accuracy. The simplified classification outperformed the Paris classification:  $\kappa=0.68$ , AC1=0.82, accuracy=91.6%.

**Conclusions** Agreement is often measured with Cohen's  $\kappa$ , but we documented higher level of agreement when analyzed with AC1 statistic. The level of agreement was substantial for the Paris classification, and almost perfect for the simplified system.

## eP174 ACCURACY AND INTER-OBSERVER AGREEMENT OF THE NICE AND THE KUDO CLASSIFICATIONS OF SUPERFICIAL COLONIC LESIONS: A COMPARATIVE STUDY

**Authors** Cocomazzi F<sup>1</sup>, Gentile M<sup>1</sup>, Perri F<sup>1</sup>, Bossa F<sup>1</sup>, Merla A<sup>1</sup>, Ippolito A<sup>1</sup>, Cubisino R<sup>1</sup>, Carparelli S<sup>1</sup>, Marra A<sup>1</sup>, Mileti A<sup>2</sup>, Paolillo R<sup>2</sup>, Piazzolla M<sup>2</sup>, Copetti M<sup>3</sup>, Parente P<sup>4</sup>, Graziano P<sup>4</sup>, Di Leo A<sup>2</sup>, Andriulli A<sup>1</sup>

**Institute** 1 Casa Sollievo della Sofferenza IRCCS, Gastroenterology and Endoscopy Unit, San Giovanni Rotondo, Italy; 2 University of Bari, Gastroenterology, Bari, Italy; 3 Casa Sollievo della Sofferenza IRCCS, Unit of Biostatistics, San Giovanni Rotondo, Italy; 4 Casa Sollievo della Sofferenza IRCCS, Pathology Unit, San Giovanni Rotondo, Italy

**DOI** 10.1055/s-0041-1724670

**Citation:** Cocomazzi F, Gentile M, Perri F et al. eP174 ACCURACY AND INTER-OBSERVER AGREEMENT OF THE NICE AND THE KUDO CLASSIFICATIONS OF SUPERFICIAL COLONIC LESIONS: A COMPARATIVE STUDY. *Endoscopy* 2021; 53: S153.

**Aims** For superficial colonic lesions, the NICE and the Kudo classifications are used in the *in vivo* prediction of histology and as a guide to therapy. The NICE system derives information from unmagnified NBI endoscopic images. The Kudo one necessitates a magnification but, as this tool is not commonly available, it is applied also to characterize unmagnified pictures. To compare the diagnostic performances of the two classifications.

**Methods** We conducted a prospective comparison of the NICE versus the Kudo classification for the differential diagnosis of colonic polyps taking histology as the gold standard. The inter-observer agreement for both classifications among 11 colonoscopists was also evaluated. Short unmagnified NBI videoclips of 64 colonic polyps (hyperplastic, adenomatous and invasive cancer lesions) were sent twice to the participants. In the first round they classified the lesions according to the NICE classification; four months later, the same videos were assessed with the Kudo system. The diagnosis provided by the participants were grouped in non-neoplastic, non-invasive neoplasia, invasive neoplasia.

**Results** Overall, the diagnostic accuracy was 82% (95%CI: 79-85) with the NICE system, and 81% (95%CI: 78-84) with the Kudo one ( $p=0.78$ ). The accuracy of the NICE classification for non-neoplastic lesions was greater compared with the Kudo's ( $p=0.03$ ). Sensitivity sub-analyses revealed a higher ability of the NICE in distinguishing between neoplastic vs. non-neoplastic lesions ( $p=0.01$ ). By using both  $\kappa$  and AC1 statistics, the overall inter-rater agreement resulted comparable: 0.49 and 0.66 for the Kudo, and 0.56 and 0.67 for the NICE, respectively. The only difference in terms of agreement category was highlighted for non-neoplastic lesions employing the AC1 statistics (0.56 with Kudo vs. 0.74 with NICE).

**Conclusions** Although the NICE classification was significantly better than the Kudo's in some specific sub-analyses, the two systems (using non-magnified images) may be considered comparable.

## eP175 ENDOSCOPIC CHARACTERISATION OF COLORECTAL NEOPLASIA WITH THE DIFFERENT PUBLISHED CLASSIFICATIONS: A MULTICENTRE COMPARATIVE STUDY INVOLVING GASTROENTEROLOGISTS FROM TRAINEES TO EXPERTS

**Authors** Bonniaud P<sup>1</sup>, Rivory J<sup>1</sup>, Ponchon T<sup>1</sup>, Pioche M<sup>1</sup>

**Institute** 1 Hospices Civils de Lyon, Gastro et Endoscopie Pavillon L, Lyon, France

**DOI** 10.1055/s-0041-1724671

**Citation:** Bonniaud P, Rivory J, Ponchon T et al. eP175 ENDOSCOPIC CHARACTERISATION OF COLORECTAL NEOPLASIA WITH THE DIFFERENT PUBLISHED CLASSIFICATIONS: A MULTICENTRE COMPARATIVE STUDY INVOLVING GASTROENTEROLOGISTS FROM TRAINEES TO EXPERTS. *Endoscopy* 2021; 53: S153.

**Aims** Validate the Colorectal Neoplasia Classification to Choose the Treatment (CONECCT) classification that groups all published criteria (including covert signs of carcinoma) in a single table.

**Methods** For this multicentre comparative study an expert endoscopist created a picture library (n=206 lesions; from hyperplastic to deep invasive cancers) with at least White Light Imaging and chromoendoscopy images. Lesions were resected/biopsied to assess histology. Participants characterised lesions using the Paris, Laterally Spreading Tumours, Kudo, Sano, NBI International Colorectal Endoscopic Classification (NICE), Workgroup serrated polypS and Polyposis (WASP), and CONECCT classifications, and assessed the quality of pictures on a web-based platform. Krippendorff alpha and Cohen's Kappa were used to assess inter- and intra-observer agreement, respectively. Answers were cross-referenced with histology.

**Results** Eleven experts, 19 non-expert gastroenterologists, and 10 interns participated. The CONECCT classification had a higher inter-observer agreement (Krippendorff alpha=0.738) than for all the other classifications and increased with expertise and with quality of pictures. CONECCT classification had a higher intra-observer agreement than all other existing classifications except WASP

(only describing Sessile Serrated Adenoma Polyp). The sensitivity of CONECCT IIC (79.0%) to detect adenocarcinoma within the lesion was higher than that of Kudo Vi (31.2%). Specificity of CONECCT IIA (89.0%) to diagnose pure adenomas (without adenocarcinoma) was higher than the NICE2 category (71.0%;  $p=0.001$ ).

**Conclusions** The CONECCT classification currently offers the best inter and intra-observer agreement, including between experts and non-experts. The sensitivity to detect a superficial adenocarcinoma in CONECCT IIC lesions and to avoid it in lesions classified CONECCT IIA is higher than current published classifications.

## eP176 PATIENT ACCEPTABILITY OF OPTICAL DIAGNOSIS FOR DIMINUTIVE POLYPS WITH A RESECT AND DISCARD STRATEGY IN BOWEL CANCER SCREENING COLONOSCOPY

**Authors** Ahmad A<sup>1</sup>, Wilson A<sup>1</sup>, Thomas-Gibson S<sup>1</sup>, Suzuki N<sup>1</sup>, Humphries A<sup>1</sup>, Haycock A<sup>1</sup>, Monahan K<sup>1</sup>, Vance M<sup>1</sup>, Dhillon A<sup>1</sup>, Saunders B<sup>1</sup>

**Institute 1** Wolfson Unit for Endoscopy, Imperial College London, London, United Kingdom

**DOI** 10.1055/s-0041-1724672

**Citation:** Ahmad A, Wilson A, Thomas-Gibson S et al. eP176 PATIENT ACCEPTABILITY OF OPTICAL DIAGNOSIS FOR DIMINUTIVE POLYPS WITH A RESECT AND DISCARD STRATEGY IN BOWEL CANCER SCREENING COLONOSCOPY. *Endoscopy* 2021; 53: S154.

**Aims** Colonoscopy with polypectomy reduces the rate of subsequent colorectal cancer and associated mortality. Most polyps resected are diminutive and with a low cancer risk. Currently, these diminutive polyps are resected and examined histologically. Using advanced imaging technologies some studies show we can distinguish adenomas from non-adenomas optically. This could potentially avoid unnecessary polypectomies and associated histology costs in cases where there is high confidence in the diagnosis of the polyps allowing polyps to be resected and discarded. The aim of this study is to assess the acceptability of such a strategy for patients in real life clinical practice.

**Methods** Two hundred and fifty patients undergoing a bowel cancer screening colonoscopy procedure, where optical diagnosis was used as part of the DISCARD3 study, were invited to participate in a patient experience survey. This was carried out over February - October 2020 at a London bowel cancer screening centre (screening population 1.1 million) with 209 patients included (41 patients excluded: 33 did not complete, 8 did not consent). Patients were asked to rate the questions in the table below:

Questionnaire	Response options
<ol style="list-style-type: none"> <li>1. My colonoscopy was comfortable.</li> <li>2. I would be happy for any polyps found during my colonoscopy to be assessed by the person carrying out the procedure at the time (rather than to wait for laboratory results to get the diagnosis).</li> <li>3. If a future colonoscopy is advised I would prefer to be informed immediately after the initial procedure rather than wait to be told later by telephone or in the outpatient department.</li> <li>4. I feel confident that the person carrying out the procedure could accurately diagnose polyps without sending them to the laboratory.</li> <li>5. I felt highly satisfied with the procedure today.</li> <li>6. If you have had a previous colonoscopy, did you notice any difference in the procedure today compared with previously?</li> </ol>	<p>Questions 1-5: 5 point scale from strongly disagree to strongly agree. Question 6: Yes, No or N/A.</p>

**Results** Most patients found their procedure comfortable (85.2%; 178/209) and were satisfied with their procedure (97.6%; 204/209). Most agreed or strongly agreed that they would be happy for polyps to be assessed optically (78.9%; 165/209) and felt confident in the ability of the endoscopist to do this (90.9%; 190/209). 85.2% (178/209) would be happy to be informed of their colonoscopy surveillance interval immediately after the procedure.

**Conclusions** In this small but representative sample, optical diagnosis of diminutive polyps using a resect and discard strategy appears to be an acceptable approach for patients within a bowel cancer screening programme. To achieve similar levels of acceptability in standard clinical practice patients may require additional and enhanced information about the concept and application of a resect and discard strategy.

## eP177 VIRTUAL CHROMOENDOSCOPY FOR CHARACTERIZATION OF COLORECTAL POLYPS: INTEROBSERVER RELIABILITY BETWEEN JUNIOR AND SENIOR ENDOSCOPIST

**Authors** Ferchichi I<sup>1</sup>, Sabbah M<sup>1</sup>, Ben Farha F<sup>1</sup>, Bellil N<sup>1</sup>, Trad D<sup>1</sup>, Bibani N<sup>1</sup>, Ouakaa A<sup>1</sup>, Elloumi H<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute 1** Habib Thameur Hospital, Gastroenterology, Montfleury, Tunisia

**DOI** 10.1055/s-0041-1724673

**Citation:** Ferchichi I, Sabbah M, Ben Farhat F et al. eP177 VIRTUAL CHROMOENDOSCOPY FOR CHARACTERIZATION OF COLORECTAL POLYPS: INTEROBSERVER RELIABILITY BETWEEN JUNIOR AND SENIOR ENDOSCOPIST. *Endoscopy* 2021; 53: S154.

**Aims** Endoscopic assessment of colorectal polyps' histology based on virtual chromoendoscopy is basically allowed to "experts" only, due to a possible inter-observer variability. This study aims to assess virtual chromoendoscopy performance in colorectal polyps characterization and to evaluate the interobserver reliability between junior and senior endoscopist.

**Methods** A prospective study including patients who presented to our endoscopy unit from April 2018 through February 2020 for colonoscopy was conducted.

All polyps detected in white light, were examined in narrow-band imaging (NBI) or Flexible spectral imaging color enhancement (FICE) by an experienced endoscopist then resected for histological analysis. Endoscopic images were stored electronically and allocated anonymously to a junior endoscopist for evaluation. Only polyps with high quality taken photos were included.

Sensitivity, specificity and diagnostic accuracy were assessed by reference to histopathology. The evaluation of the interobserver reliability between junior and senior endoscopist was performed based on Cohen's kappa coefficient ( $k$ ) ( $k > 0.75$ : perfect agreement;  $k$  ranging from 0.4 to 0.75: moderate agreement;  $k < 0.4$ : poor agreement).

**Results** Sixty-four polyps were included in our study, 68.8% of which were assessed with FICE and 31.2% with NBI. According to the histological analysis, 39 lesions were neoplastic, versus 25 non-neoplastic lesions.

Sensitivity, specificity and diagnostic accuracy of virtual chromoendoscopy in "real-time" assessment of colorectal polyps were respectively 94.9%, 92%, and 94%. Conforming to the junior endoscopist's evaluation, sensitivity, specificity and diagnostic accuracy were respectively 82.1%, 84% and 82.8%. The interobserver agreement between the junior and the senior endoscopist was moderate ( $k = 0.582$ ).

**Conclusions** Our study demonstrated that virtual chromoendoscopy is an effective tool for optical diagnosis of colorectal lesions. However, the interobserver agreement was moderate between senior and junior endoscopist. These results suggest that endoscopists should be trained to reduce the interobserver variability so that optical diagnosis of colorectal polyps can be generalized.

## eP178 VIRTUAL CHROMOENDOSCOPY FOR REAL-TIME ASSESSMENT OF COLORECTAL POLYPS' HISTOLOGY: IS THERE ANY PREDICTOR OF DIAGNOSTIC PERFORMANCE?

**Authors** Ferchichi I<sup>1</sup>, Sabbah M<sup>1</sup>, Bellil N<sup>1</sup>, Trad D<sup>1</sup>, Bibani N<sup>1</sup>, Ouakaa A<sup>1</sup>, Elloumi H<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute 1** Habib Thameur Hospital, Gastroenterology, Montfleury, Tunisia

**DOI** 10.1055/s-0041-1724674

**Citation:** Ferchichi I, Sabbah M, Bellil N et al. eP178 VIRTUAL CHROMOENDOSCOPY FOR REAL-TIME ASSESSMENT OF COLORECTAL POLYPS' HISTOLOGY: IS THERE ANY PREDICTOR OF DIAGNOSTIC PERFORMANCE?. *Endoscopy* 2021; 53: S155.

**Aims** Virtual chromoendoscopy (VC) such as Narrow band imaging (NBI) or Flexible spectral imaging color enhancement (FICE) offer better resolution of the pit pattern and the vascular pattern of colorectal polyps, which allows real-time assessment of these lesions' histology. The aim of this study was to assess virtual chromoendoscopy's performance in predicting colorectal polyps' histology and to determine predictors of diagnostic accuracy.

**Methods** A prospective study from April 2018 to February 2020 including patients who underwent colonoscopy and had one or more polyps being characterized by VC was conducted (FICE or NBI). All included polyps were completely removed for histopathological analysis.

The evaluation of VC performance in distinguishing neoplastic lesions from non-neoplastic ones was made by analyzing the Receiver operating Characteristics (ROC) curve with measurement of the area under the curve (AUC) and by calculating sensitivity (Se), specificity (Sp), positive predictive value (PPV), negative predictive value (NPV) and diagnostic accuracy. Fisher Test was used for determination of predictors of diagnostic accuracy (qualitative variables).

**Results** Sixty-four polyps with a mean size of eight [2 – 30] were included in our study, 25 of which were non-neoplastic versus 39 neoplastic polyps. Se, Sp, PPV, NPV, AUC and diagnostic accuracy were respectively 94.9%, 92%, 94.9%, 92%, 0.934 and 94%. Comparing both technologies used (FICE versus NBI), there was no significant difference in terms of diagnostic accuracy ( $p=1.000$ ). In addition, neither the polyp size ( $p=0.619$ ), neither the polyp morphology ( $p=1.000$ ), nor the polyp location ( $p=1.000$ ) was associated with the diagnostic accuracy.

**Conclusions** Our study proved that FICE and NBI can provide an accurate and precise instantaneous assessment of colorectal polyps' histology with a comparable diagnostic performance and regardless of the polyp's characteristics.

## eP179 THE DETECT-AND-LEAVE STRATEGY FOR DIMINUTIVE POLYPS OF THE RECTO-SIGMOID: FEASIBILITY AND LIMITS

**Authors** Hassine A<sup>1</sup>, Hammami A<sup>1</sup>, Zinelabidine F<sup>1</sup>, Dahmani W<sup>1</sup>, Ben Ameer W<sup>1</sup>, Elleuch N<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksaa M<sup>1</sup>, Braham A<sup>1</sup>, Ajmi S<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute 1** University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sahloul, Tunisia

**DOI** 10.1055/s-0041-1724675

**Citation:** Hassine A, Hammami A, Zinelabidine F et al. eP179 THE DETECT-AND-LEAVE STRATEGY FOR DIMINUTIVE POLYPS OF THE RECTO-SIGMOID: FEASIBILITY AND LIMITS. *Endoscopy* 2021; 53: S155.

**Aims** The treatment of distal diminutive polyps less than 5 mm in size remains a global challenge for endoscopists. The aim of our study was to evaluate the feasibility of "detect-and-leave" strategy by investigating the prevalence of advanced histological signs in diminutive polyps of the recto-sigmoid.

**Methods** A retrospective study was conducted between 2016 and 2020, including patients who had colonoscopy with polypectomy. Two groups were defined: Group 1 for diminutive polyps located on the recto-sigmoid, and group 2 for diminutive polyps located on the other segments. Endoscopic and histopathological data were analyzed.

**Results** We included 223 patients with 282 polyps. The mean age was 62.28 years [33 – 86 years] with male to female ratio of 2.37. Depending on the size, polyps were classified: diminutive ( $\leq 5$  mm, 50.2%,  $n=112$ ), small and medium (6 – 9 mm, 34.5%,  $n=77$ ), large (10 – 19 mm, 9.9%,  $n=22$ ), giants ( $\geq 20$  mm, 5.4%,  $n=12$ ). 61.6% of the diminutive polyps ( $n=69$ ) were located on the rectosigmoid. In the first group, polyps were adenomatous in 53.6% of cases (all of them were tubulo-villous), hyperplastic (36.2% of cases) or carcinomatous (1.4% of cases). Dysplasia was found in 53.6% of cases including 5.4% of high grade. In the second group, polyps were adenomatous (83.7%, all of them tubule-villous) or hyperplastic (14%). No carcinomatous polyp was found in this group. Dysplasia was detected in 83.7% of cases including 2.77% of high grade. The diagnosis of adenomas was less frequent in the group of diminutive polyps of the recto-sigmoid with a statistically significant difference ( $p=0.001$ ).

**Conclusions** Our study has shown a significant rate of advanced histological signs within diminutive polyps of the recto-sigmoid. Thus, "detect-and-leave" strategy can only be applied in expert centers where advanced endoscopy techniques are available.

## eP180 IS ENDOSCOPY OVERESTIMATING COLORECTAL POLYP SIZE?

**Authors** Hammami A<sup>1</sup>, Hassine A<sup>1</sup>, Zinelabidine F<sup>1</sup>, Ben Ameer W<sup>1</sup>, Dahmani W<sup>1</sup>, Elleuch N<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksaa M<sup>1</sup>, Braham A<sup>1</sup>, Ajmi S<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute 1** University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sahloul, Tunisia

**DOI** 10.1055/s-0041-1724676

**Citation:** Hammami A, Hassine A, Zinelabidine F et al. eP180 IS ENDOSCOPY OVERESTIMATING COLORECTAL POLYP SIZE?. *Endoscopy* 2021; 53: S155.

**Aims** Polyp size  $\geq 1$  cm triggers more frequent colonoscopic surveillance, yet size is typically based on subjective endoscopic estimates. The aim of this study was to compare contemporary assessments of polyp size by endoscopic estimation and pathology measurement.

**Methods** We performed a retrospective study including 223 patients who underwent colonoscopy with polypectomy. We used a standardized data collection form to collect electronic health record data on polyp descriptors and measurements from colonoscopy and pathology reports. We excluded cases with  $>5$  polypectomies, missing reports, polyps removed in fragments, and unclear pairing of colonoscopy and pathology polyp size data. Paired t-tests were performed to assess the discordance in polyp size between colonoscopy and pathology reports.

**Results** 282 polyps were detected. Polyp size ranged from 0.1cm to 3.0cm (mean size= 0.718 cm) on colonoscopy reports, and from 0.2 cm to 3.2 cm on pathology reports (mean size= 0.743 cm) with a statistically significant difference ( $p<0.0001$ ).

On colonoscopy reports, 48 polyps (17.02%) had a descriptive label without a numeric value: diminutive (8), small (38), and large (2). Only 4.16% of diminutive, small, or tiny polyps on the colonoscopy report were  $\geq 1$ cm on the pathology report. 87.5% of diminutive and 84.21% of small polyps were  $\leq 0.5$ cm on pathology report.

Of all 46 polyps estimated as  $\geq 1$  cm on endoscopy, 17.3% were  $<1$  cm on pathology. Size discordance varied by  $>0.2$ cm for 29.1% of polyps. More of these polyps were  $\geq 1$ cm on colonoscopy ( $n=40$ , 17.9%) than on pathology report ( $n=35$ , 15.7%) with a statistically significant difference ( $p<0.0001$ ). Factors affecting endoscopic misclassification rates were: proximal sites ( $p=0.02$ ), and pedunculated aspect ( $p=0.001$ ).

**Conclusions** Substantial discordance exists between endoscopic and pathology-based assessments of polyp size, with more polyps sized as  $\geq 1$  cm by colonoscopic estimation compared to pathology.



## eP181 GUIDANCE FOR SETTING ALTERNATIVE COMPETENCE CRITERIA FOR OPTICAL DIAGNOSIS OF DIMINUTIVE COLORECTAL POLYPS: A SIMULATION APPROACH

**Authors** Houwen BBSL<sup>1</sup>, Greuter MJE<sup>2</sup>, Vleugels JLA<sup>1</sup>, Hazewinkel Y<sup>3</sup>, Dekker E<sup>1</sup>, Coupé VMH<sup>2</sup>

**Institute** 1 Amsterdam University Medical Centre, Location Academic Medical Centre, University of Amsterdam, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 2 Amsterdam University Medical Centres, Location VU Medical Centre, VU University of Amsterdam, Department of Epidemiology and Data Science, Amsterdam, Netherlands; 3 Radboud University Nijmegen Medical Centre, Radboud University of Nijmegen, Department of Gastroenterology and Hepatology, Nijmegen, Netherlands

DOI 10.1055/s-0041-1724677

**Citation:** Houwen BBSL, Greuter MJE, Vleugels JLA et al. eP181 GUIDANCE FOR SETTING ALTERNATIVE COMPETENCE CRITERIA FOR OPTICAL DIAGNOSIS OF DIMINUTIVE COLORECTAL POLYPS: A SIMULATION APPROACH. *Endoscopy* 2021; 53: S156.

**Aims** Current competence criteria [PIVI] for optical diagnosis of diminutive colorectal polyps are clinically relevant but difficult to measure and implement in daily practice. These criteria are defined as follows; (PIVI-1)  $\geq 90\%$  surveillance agreement and (PIVI-2)  $\geq 90\%$  negative predictive value (NPV) for neoplastic histology in the rectosigmoid with histology as reference. To provide guidance for setting alternative easy-to-implement competence criteria, we determined the proportion of diminutive polyps that should have a correct optical diagnosis to meet the currently used PIVI.

**Methods** In a simulation approach, optical diagnosis of diminutive polyps was performed with a fixed diagnostic performance level ('strategy') in patients who underwent colonoscopy in a faecal immunochemical test (FIT) and a primary colonoscopy screening setting. Strategies were defined by systematically varying the proportion of correct optical diagnoses for each polyp subtype (i.e. adenomas, hyperplastic polyps, sessile serrated lesions). For each strategy, we determined whether PIVI-1 (using ESGE guidelines) and PIVI-2 were met, using bootstrap-like methodology. Histology was reference standard.

**Results** In the FIT-screening setting, PIVI-2 was always met when  $\geq 94\%$  (95% confidence interval [CI]: 92-96%) of all diminutive polyps (i.e. regardless of subtype) were correctly diagnosed. For the primary colonoscopy screening setting, this percentage was  $\geq 89\%$  (95%CI: 84-92%). Remarkably, in both screening settings PIVI-1 was already met when  $\geq 40\%$  of each polyp subtype was diagnosed correctly. The required proportion of correctly diagnosed diminutive polyps to meet both PIVI could be lowered under the condition that  $\geq 92\%$  diminutive adenomas was correctly diagnosed in FIT-screening, and  $\geq 72\%$  of diminutive adenomas in colonoscopy screening.

**Conclusions** This study shows that the proportion of correctly diagnosed diminutive polyps can be an alternative, easy-to-implement competence criterion to perform optical diagnosis of diminutive polyps. In order to meet the PIVI in both FIT and colonoscopy-based screening settings, at least 94% of all diminutive polyps should be diagnosed correctly.

## eP182v A RARE AND UNUSUAL RECTAL TUMOR

**Authors** Ebigbo A<sup>1</sup>, Fleischmann C<sup>1</sup>, Messmann H<sup>1</sup>

**Institute** 1 Universitätsklinikum Augsburg, Augsburg, Germany

DOI 10.1055/s-0041-1724678

**Citation:** Ebigbo A, Fleischmann C, Messmann H eP182V A RARE AND UNUSUAL RECTAL TUMOR. *Endoscopy* 2021; 53: S156.

An asymptomatic 51-year old man presented for screening colonoscopy. An unusual rectal lesion was seen at about 5 cm from the anal verge. It had an elongated shape with a pocket-like centre and heaped-up borders. The mucosa inside the pocket had round pits as well as a villous architecture. Forceps biopsy

revealed gastric mucosa, and rectal gastric heterotopia was suspected. Because of its potential to develop malignancy, an endoscopic en-bloc resection was performed. Surprisingly, histopathology showed both gastric and pancreatic tissue, making this case an extremely rare and unusual report of a mixed gastric and pancreatic heterotopia in the rectum.

## eP183 CHARACTERIZATION OF INVASIVE SUPERFICIAL COLONIC CANCER USING HIGH RESOLUTION ENDOSCOPY WITH VIRTUAL CHROMOENDOSCOPY (BLI) WITH OR WITHOUT MAGNIFICATION BEFORE ENDOSCOPIC RESECTION

**Authors** Lherault G<sup>1</sup>, Hallit R<sup>1</sup>, Barret M<sup>1</sup>, Abouali E<sup>1</sup>, Belle A<sup>1</sup>, Goullet B<sup>1</sup>, Coriat R<sup>1</sup>, Rouquette A<sup>2</sup>, Terris B<sup>2</sup>, Chaussade S<sup>1</sup>

**Institute** 1 Cochin University Hospital-Université de Paris, Gastroenterology and Endoscopy Unit, Paris, France; 2 Cochin University Hospital-Université de Paris, Anapathology Département, Paris, France

DOI 10.1055/s-0041-1724679

**Citation:** Lherault G, Hallit R, Barret M et al. eP183 CHARACTERIZATION OF INVASIVE SUPERFICIAL COLONIC CANCER USING HIGH RESOLUTION ENDOSCOPY WITH VIRTUAL CHROMOENDOSCOPY (BLI) WITH OR WITHOUT MAGNIFICATION BEFORE ENDOSCOPIC RESECTION. *Endoscopy* 2021; 53: S156.

**Aims** Polyps characterization during colonoscopy has been developed with the use of high definition and electronic chromo-endoscopy. Detecting the presence of cancer before endoscopic resection is capital, in order to choose the most suitable management. This detection is difficult, with variable performances between western and japanese endoscopists (10% of concordance vs 60%). Not much studies have been done in Europe so far on this topic. The aims of this study were to determine the incidence of cancer according to the endoscopic description of the lesions, and to define which endoscopic classification is mostly associated with a neoplastic risk.

**Methods** We conducted a prospective, observational study, including patients who underwent endoscopic resections between 2018 and 2020 for colonic lesions > 20 mm. Colonoscopies were performed by a single expert endoscopist using FUJI brand high definition endoscopes with or without magnification. The size of the lesions, their location, SANO classification, Paris classification, the LST type, the histology predicted by the endoscopist and the definitive histology of the resection specimen were noted.

**Results** 142 (71 men, 71 women) patients were included. The mean size of the colonic lesions was 40 mm. 31.7% of the lesions were located in the cecum, 27.5% the right colon, 8.5% the transverse colon, 14.1% the sigmoid and 11.3% the rectum. The diagnosis of adenoma was correctly made by the endoscopist in 94% of cases. 15/18 SSAPs (83%) were correctly diagnosed by the endoscopist. 15.5% patients presented lesions of cancer on the histology (10 cancers in situ, 12 T1). Among the 10 cancers in situ, 2 were correctly diagnosed by the endoscopist. Among the 12 invasive cancers, 8 had been correctly diagnosed.

**Conclusions** The endoscopic diagnosis of invasive cancers by an expert correct in approximately 67% of cases. These results confirm the usefulness of the SANO classification. The use of zoom did not improve performance in diagnosing invasive cancers.

## eP184 ARTIFICIAL INTELLIGENCE IN THE CHARACTERIZATION OF COLORECTAL POLYPS: A PROSPECTIVE STUDY IN A CLINICAL SETTING USING CADEYE

**Authors** Correia C<sup>1</sup>, Gravito-Soares E<sup>1,2</sup>, Gravito-Soares M<sup>1,2</sup>, Amaro P<sup>1</sup>, Macedo C<sup>1</sup>, Ferreira M<sup>1</sup>, Sant'Anna M<sup>1</sup>, Estorninho J<sup>1</sup>, Bento Miranda M<sup>1</sup>, Barreto L<sup>1</sup>, Ferreira AM<sup>1</sup>, Portela F<sup>1,2</sup>, Pimentel R<sup>1</sup>, Caetano Oliveira R<sup>3</sup>, Madeira J<sup>3</sup>, Rui Silva M<sup>3</sup>, Cipriano MA<sup>3</sup>, Figueiredo P<sup>1,2</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology Department, Coimbra, Portugal; 2 Faculty of Medicine, University of Coimbra,

Coimbra, Portugal; 3 Centro Hospitalar e Universitário de Coimbra, Pathology Department, Coimbra, Portugal  
DOI 10.1055/s-0041-1724680

**Citation:** Correia C, Gravito-Soares E, Gravito-Soares M et al. eP184 ARTIFICIAL INTELLIGENCE IN THE CHARACTERIZATION OF COLORECTAL POLYPS: A PROSPECTIVE STUDY IN A CLINICAL SETTING USING CADEYE. *Endoscopy* 2021; 53: S156.

**Aims** Current guidelines recommend resection and histopathological analyses of all colorectal polyps. Real-time optical diagnosis can obviate non-neoplastic polyp resection (“diagnose-and-leave-behind”) and histopathological analyses of diminutive polyps (“predict-resect-and-discard”) reducing healthcare and cost burden. We aimed to evaluate the diagnostic accuracy of computer-aided diagnosis using CADEYE (Fujifilm, Germany) in real-time optical characterization of colorectal polyps compared to endoscopic diagnosis with histopathology as the gold-standard.

**Methods** Single-centre prospective study of diminutive/small colorectal polyps, between September-November/2020. Thirteen participating endoscopists were previously submitted to a brief online course of *Blue Laser Imaging* (BLI) chromoendoscopy. First, two independent endoscopists performed a blind optical characterization, with high-definition colonoscopy without amplification using BLI. Second, CADEYE on BLI mode was applied for optical characterization. Third, all polyps were resected and submitted to a blind histopathological evaluation by two independent gastrointestinal pathologists.

**Results** A total of 159 polyps (mean size 5.0±2.4mm;2-9mm) were included, being 115 (72.3%) adenomas and 44 (27.7%) non-adenomas by histopathology. Regarding neoplastic/hyperplastic polyp differentiation, CADEYE had a diagnostic accuracy of 81.1% versus 82.1% (p=0.132) compared to experienced endoscopists with sensitivity, specificity, positive and negative predictive values of 78.4%, 83.7%, 92.9% and 59.0% for CADEYE and 75.9%, 88.4%, 94.6% and 57.6% for experienced endoscopists. After excluding polyps with low-confidence characterization, diagnostic accuracy was 83.9% versus 87.3% (p=0.014) for CADEYE and experienced endoscopists, respectively. In the trainee setting (148 polyps), diagnostic accuracy was 77.6% (versus 80.4% for CADEYE; p=0.201); considering high-confidence characterization, the diagnostic accuracy was 84.0% (versus 83.3% for CADEYE; p=0.705).

**Conclusions** CADEYE is a user-friendly tool with high accuracy in optical characterization of colorectal polyps, that may not be superior to high-confidence characterization by the endoscopist. However, both endoscopic and CADEYE optical characterization are still under the minimum desirable target (90% PIVI). Ongoing optimization of artificial intelligence technology may allow future clinical implementation.

### eP185 POST-POLYPECTOMY FOLLOWUP RECOMMENDATIONS WITHOUT PATHOLOGY, IS IT POSSIBLE? PRELIMINARY RESULTS

**Authors** Abu Freha N<sup>1</sup>, Abu Tailakh M<sup>2</sup>, Abu-Freha O<sup>3</sup>, Estis-Deaton A<sup>4</sup>, Elkrinawi J<sup>1</sup>, Alamour O<sup>5</sup>, Etzion O<sup>1</sup>

**Institute** 1 Ben Gurion University of the Negev, The Institute of Gastroenterology and Hepatology, Soroka University Medical Center, Beer Sheva, Israel; 2 Ben-Gurion University of the Negev, Reanati School for Community Health Professions, Department of Nursing, Faculty of Health Sciences, Beer Sheva, Israel; 3 Soroka University Medical Center, Beer Sheva, Israel; 4 Soroka University Medical Center, Division of Internal Medicine, Beer Sheva, Israel; 5 Soroka University Medical Center, Department of Emergency Medicine, Beer Sheva, Israel  
DOI 10.1055/s-0041-1724681

**Citation:** Abu Freha N, Abu Tailakh M, Abu-Freha O et al. eP185 POST-POLYPECTOMY FOLLOWUP RECOMMENDATIONS WITHOUT PATHOLOGY, IS IT POSSIBLE? PRELIMINARY RESULTS. *Endoscopy* 2021; 53: S157.

**Aims** Appropriate post-polypectomy surveillance recommendations are an important performance measure for colonoscopy. We aimed to determine

the rate of recommendations change due to the pathology results of villous component or high-grade dysplasia in 1-4 polyps smaller than 10 mm.

**Methods** Retrospective study included all consecutive colonoscopies in a single center in 2019. Colonoscopies with any type of polyp were analyzed for size, number and histopathology finding. Polyps with size less than 10mm and histopathology results showed villous component or high-grade dysplasia was considered as polyps needed change of follow up recommendations.

**Results** We included 1,145 patients, 1135 colonoscopies were included in the polyp's analysis, 158 colonoscopies were excluded due to poor preparation. Mean age 59±14.1, 567 (49.5%) males. Polyps and adenoma were detected in 448 (39.5%) and 363 (32%) colonoscopies. 1-2 polyps were found in 317 (27.9%) colonoscopies and 3-4 polyps in 69 (6%) colonoscopies. In 114 (25.4%) colonoscopies the size of the polyp was ≥10mm. based on the pathology results, in 49 (10.9%) colonoscopies the polyp was non-adenoma and in 36 (8%) the polyp was hyperplastic. In 302 (67%) colonoscopies the pathology results showed tubular adenoma with low grade dysplasia. In 11 (2.5%) and 11 (1.4%) cases with small polyps' villous component and high-grade dysplasia was found in the pathology results.

**Conclusions** Pathology results change the recommendation for post polypectomy only in very small proportion of colonic polyps ≤10mm, only 1.4% with high grade dysplasia and 2.5% villous component.

### eP186 SELF-EXPANDABLE METALLIC STENT IN MALIGNANT GASTRODUODENAL OUTLET OBSTRUCTION: A VIABLE ALTERNATIVE?

**Authors** Pereira Correia F<sup>1</sup>, Alexandrino G<sup>1</sup>, Branco JC<sup>1</sup>, Oliveira AM<sup>1</sup>, Carvalho Lourenço L<sup>1</sup>, Martins A<sup>1</sup>

**Institute** 1 Hospital Prof. Dr. Fernando Fonseca, Gastroenterology, Amadora, Portugal

DOI 10.1055/s-0041-1724682

**Citation:** Pereira Correia F, Alexandrino G, Branco JC et al. eP186 SELF-EXPANDABLE METALLIC STENT IN MALIGNANT GASTRODUODENAL OUTLET OBSTRUCTION: A VIABLE ALTERNATIVE?. *Endoscopy* 2021; 53: S157.

**Aims** Malignant gastroduodenal outlet obstruction (GOO) is commonly seen with distal gastric cancer and pancreatic adenocarcinoma with extension to the duodenum or stomach (1). Gastroenterostomy has been the mainly treatment strategy for this condition, however, is associated with high mortality and many patients are excluded from surgery because of poor medical condition (2). Self-expanding metallic stents (SEMS) are an increasingly used alternative. We aimed to evaluate the effectiveness and safety of this technique in palliation of malignant GOO.

**Methods** We retrospectively assessed 43 patients with mean age 72 ± 15.6 years, in whom the SEMS was placed, between January 2012 and December 2019. All of them had unresectable cancer. SEMS were placed under fluoroscopic guidance. We assessed technical and clinical success, median survival and the need for re-intervention. Clinical success was evaluated through the food tolerance after stent placement, according to gastric outlet obstruction scoring system (GOOSS).

**Results** In our sample, 60,4% of patients had gastric cancer, 25,6% had pancreatic cancer and 14% other neoplasms. We achieved 100% technical success and 95,3% clinical success. After the procedure, 10 patients (23,3%) had a GOOSS 1 and 30 patients (70%) had at least GOOSS ≥ 2. Survival at 30 days was 53.5% and median survival after the procedure was 81 ± 13 days. There was a need to place a second stent in 11 patients (25,6%), with no need for surgical intervention.

**Conclusions** SMES seem to be an effective and safe alternative in GOO in patients undergoing palliative care.

## eP187 LEARNING CURVE FOR GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION – WHERE ARE WE?

**Authors** Silva Mendes S<sup>1,2</sup>, Ferreira A<sup>1</sup>, Costa R<sup>1</sup>, Leal T<sup>1</sup>, Caetano AC<sup>1,2</sup>, Gonçalves R<sup>1</sup>

**Institute** 1 Braga Hospital, Gastroenterology Department, Braga, Portugal; 2 University of Minho, School of Medicine, Life and Health Sciences Research Institute (ICVS), Braga, Portugal

DOI 10.1055/s-0041-1724683

**Citation:** Silva Mendes S, Ferreira A, Costa R et al. eP187 LEARNING CURVE FOR GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION – WHERE ARE WE?

Endoscopy 2021; 53: S158.

**Aims** Endoscopic submucosal dissection (ESD) is a technique for the resection of early malignant gastric lesions under implementation in Western countries. This study intends to characterize the learning curve for this technique to facilitate the development of training programs.

**Methods** Data were collected from all patients referred to ESD for resection of dysplastic or early malignant gastric lesions in a tertiary center, from May 2012 to August 2020. All procedures were performed by the same endoscopist and the expanded criteria were used to define endoscopic cure. Procedures were divided chronologically in 3 groups (n = 96 per group). The occurrence of complications and outcomes of resection were compared between groups with Qui-square and Kruskal-Wallis tests.

**Results** Two hundred and eighty eight ESDs were performed in 260 patients over 98 months. One hundred fifty-eight patients were male, with an average age of 68.79±9.89. It was observed a superior average age in group 3 (p=0.037), yet there were no differences between groups regarding sex, hypocoagulation/anti-aggregation, comorbidities, and histologic grading of the lesions. The most significant ESD complications were post-procedure bleeding (n = 18; 6.25%), and intra-procedure perforation (n = 2; 0.69%), with successful endoscopic treatment in all patients. Bleeding was significantly less frequent in group 3 (p=0.034), and there were no differences in perforation over time. The length of hospital stay after the procedure was significantly lower in group 3 compared with group 1 (p=0.002). There were no significant differences between groups in the proportion of cure (84.62%), and R0 resection (87.50%).

**Conclusions** In this cohort of gastric ESD it was observed a safe and adequate resection of lesions from an initial stage of implementation of the technique. It were necessary 190 procedures to achieve proficiency in the technique with reduction of post-procedure bleeding.

## eP188 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): HOW DO WESTERN ENDOSCOPISTS VALUE ANIMAL MODELS?

**Authors** Küttner-Magalhães R<sup>1,2</sup>, Pimentel-Nunes P<sup>3,4,5</sup>, Araújo-Martins M<sup>6</sup>, Libânio D<sup>3,4</sup>, Borges-Canha M<sup>5,7</sup>, Marcos-Pinto R<sup>1,2,4</sup>, Koch A<sup>8</sup>, Dinis-Ribeiro M<sup>3,4</sup>

**Institute** 1 Santo António Hospital, Porto University Hospital Center, Gastroenterology, Porto, Portugal; 2 Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal; 3 Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal; 4 Faculty of Medicine of Porto, University of Porto, Community Medicine, Health Information and Decision (MEDCIDS) and CINTESIS, Porto, Portugal; 5 Faculty of Medicine of Porto, University of Porto, Surgery and Physiology, Porto, Portugal; 6 Faculty of Medicine, University of Porto, Porto, Surgery and Physiology, Porto, Portugal; 7 São João University Hospital Center, Endocrinology, Diabetes and Metabolism, Porto, Portugal; 8 Erasmus MC, University Medical Center, Gastroenterology and Hepatology, Rotterdam, Netherlands

DOI 10.1055/s-0041-1724684

**Citation:** Küttner-Magalhães R, Pimentel-Nunes P, Araújo-Martins M et al. eP188 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): HOW DO WESTERN ENDOSCOPISTS VALUE ANIMAL MODELS?. Endoscopy 2021; 53: S158.

**Aims** Endoscopic Submucosal Dissection (ESD) was introduced in the West later than in East, which might have influenced the type of training on this technique. Only recently, suggestions for standardized training were described. Our aim was to assess how Western endoscopists performing ESD have been trained and how they value animal models for training.

**Methods** An online survey regarding training in ESD was sent to western endoscopists who published articles on advanced resection techniques.

**Results** From 279 endoscopists, 58 (21%) completed the questionnaire, of which 50 confirmed performance of ESD in clinical practice. Endoscopists had a median of 15 years of endoscopic experience (IQR 9,75-20,25). All of them were performing conventional EMR, before starting ESD. Prior to clinical ESD practice, 74% (n = 37) underwent training with *ex vivo* models (median of 2 courses (IQR 1-5)) and 84% (n = 42) with live animal models (median of 2 courses (IQR 1-4)). After starting clinical ESD, as trainers, 52% (n = 26) were involved with *ex vivo* models (median of 5 courses (IQR 2,75-10)) and 60% (n = 30) with live animal models (median of 3 courses (IQR 2-10)). Personal usefulness of *ex vivo* and live animal models was rated with a median of 9 (IQR 8-10) and 10 (IQR 8-10), out of 10, respectively. Courses with *ex vivo* and live animal models were considered a prerequisite before clinical practice by 84% (n = 42) and 78% (n = 39), respectively.

**Conclusions** Western endoscopists have extensive endoscopic experience before starting ESD. The majority had pre-clinical training with *ex vivo* and live animal models and more than half of the respondents are acting as trainers of other endoscopists with these models. Animal models are considered very useful and deemed a prerequisite before clinical practice by the majority of the endoscopists.

## eP189 LEARNING SMALL BOWEL CAPSULE ENDOSCOPY REQUIRES AT LEAST 50 PROCEDURES

**Authors** Nielsen AB<sup>1,2,3</sup>, Jensen MD<sup>4</sup>, Brodersen JB<sup>5</sup>, Kjeldsen J<sup>2</sup>, Laursen CB<sup>6</sup>, Konge L<sup>7</sup>, Laursen SB<sup>2</sup>

**Institute** 1 Odense University Hospital, SimC - Simulation Center, Odense, Denmark; 2 Odense University Hospital, Department of Medical Gastroenterology, Odense, Denmark; 3 University of Southern Denmark, Department of Clinical Research, Odense, Denmark; 4 Lillebaelt Hospital Vejle, Department of Internal Medicine, Section of Gastroenterology, Vejle, Denmark; 5 Hospital of Southwest Jutland, Department of Internal Medicine, Section of Gastroenterology, Esbjerg, Denmark; 6 Odense University Hospital, Department of Respiratory Medicine, Odense, Denmark; 7 Capital Region of Denmark, Copenhagen Academy for Medical Education and Simulation, Copenhagen, Denmark

DOI 10.1055/s-0041-1724685

**Citation:** Nielsen AB, Jensen MD, Brodersen JB et al. eP189 LEARNING SMALL BOWEL CAPSULE ENDOSCOPY REQUIRES AT LEAST 50 PROCEDURES.

Endoscopy 2021; 53: S158.

**Aims** Capsule endoscopy (SBCE) is used for examination of the small bowel mainly in patients with suspected Crohn's disease (CD) or bleeding. The number of procedures needed in order to acquire a sufficient level of skills to perform unassisted evaluation of SBCE is unknown.

The aims were to establish learning curves, discriminative abilities, and number of procedures needed for learning SBCE.

**Methods** An expert panel developed a one-day course including theoretical lessons (examination, anatomy, and pathology) and hands-on training. Participants received 50 SBCE cases (12 normal, 23 CD, 10 bleeding, 4 tumors, 1 stenosis) after completing the course. Participants solved one case weekly. Each case was followed by an interactive questionnaire about mucosal overview, landmarks, findings (erosions, ulcers, polyps, bleeding, none), and a final conclusion (normal, CD, bleeding, tumor, stenosis). After submitting the questionnaire participants received feedback including correct findings and diagnosis. Participants received a randomized sequence of cases. Data were presented using CUSUM (cumulative sum control chart) learning curves and sensitivity/specificity analyses.

**Results** We included 19 participants (15 registrars and 4 specialists in gastroenterology) from Danish hospitals. 536 SBCE cases were examined (median 21; range: 11-50). The diagnosis was correct in 73%±4 cases. The overall sensitivity for findings was 68%±5. Polyps were most difficult to find with a sensitivity of 22%±20 (Table 1). The specificity for normal cases was 50%±13. 37% of normal cases were mistaken with CD. CUSUM plots demonstrated learning progression for diagnosis and findings. None of the participants reached a learning plateau.

**Conclusions** ESGE's latest position statement recommends assessment of 30 supervised procedures before assessing SBCE without supervision. However, our data indicate that a significant higher number of cases (more than 50) are needed in order to achieve sufficient competences, especially in cases without pathologies. Learning SBCE may be more challenging than previously thought.

► Table 1

Findings	Total number	Overall sensitivity/specificity	Sensitivity/specificity in the last half of the solved cases
Erosions	280	78%±4	78%±10
Ulcers	115	66%±14	62%±19
Bleeding	115	76%±17	59%±14
None	125	50%±13	55%±16

## eP190 PRELIMINARY SURVEY OF WEARABLE DISPLAY GLASSES FOR MEDICAL STUDENTS IN ENDOSCOPY ROOM

**Authors** Lee KW<sup>1</sup>, Lee HS<sup>1</sup>, Lee JM<sup>1</sup>, Choi HS<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Jeon YT<sup>1</sup>, Chun HJ<sup>1</sup>

**Institute** 1 Korea University Anam Hospital, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Seoul, Korea, Republic of

**DOI** 10.1055/s-0041-1724686

**Citation:** Lee KW, Lee HS, Lee JM et al. eP190 PRELIMINARY SURVEY OF WEARABLE DISPLAY GLASSES FOR MEDICAL STUDENTS IN ENDOSCOPY ROOM. *Endoscopy* 2021; 53: S159.

**Aims** Several attempts have been made to incorporate smart glasses in the medical field. We decided to use wearable display glasses for endoscopy, particularly in the position of an observer, to compare the students' response between the conventional method and the new method.

**Methods** We surveyed 28 medical students about the use of the wearable display device. They wore wearable display glasses to observe endoscopic procedure and answered the prepared questionnaire. The collected answers to the surveys were analyzed for statistical correlation between each variable.

**Results** In the survey of medical students, awkwardness due to dizziness (dissatisfied and very dissatisfied: 21.5%) and eye fatigue (25%) were disadvantages, while concentration (satisfied and very satisfied: 57.2%) and securing patient rights (71.4%) were advantages. Students showed more positive reviews than negative reviews on new devices (32.1% vs. 21.5%).

**Conclusions** We investigated the advantages and disadvantages of viewing the endoscope image with a new wearable display glasses compared to the conventional method by the survey of user experiences. The results of this study revealed relatively positive responses from the medical students in the survey. If the new device compensates for some of the shortcomings, we estimate that the use in the endoscopy room will be feasible.

## eP191 DEVELOPMENT AND EVALUATION OF AN INTERVENTIONAL TRAINING MODEL FOR FLEXIBLE ENDOSCOPY IN ROUX-EN-Y ANATOMY

**Authors** Koch K<sup>1</sup>, Schweizer U<sup>1</sup>, Mothes B<sup>1</sup>, Wichmann D<sup>1</sup>, Grund KE<sup>1</sup>

**Institute** 1 University Hospital of Tübingen, Department of General, Visceral and Transplantation Surgery, Tuebingen, Germany

**DOI** 10.1055/s-0041-1724687

**Citation:** Koch K, Schweizer U, Mothes B et al. eP191 DEVELOPMENT AND EVALUATION OF AN INTERVENTIONAL TRAINING MODEL FOR FLEXIBLE ENDOSCOPY IN ROUX-EN-Y ANATOMY. *Endoscopy* 2021; 53: S159.

**Aims** Surgery in the upper gastrointestinal tract can result in significantly altered anatomy. A common variation of the resulting anatomy is the Roux-Y reconstruction. Altered anatomy leads to an increasing risk for technical failure during follow-up endoscopies. Especially interventions for choledocholithiasis after bariatric surgery are complex. A realistic and patient-analogue training model is not yet available, but could improve the quality of diagnostic and therapeutic endoscopy in patients with surgically altered anatomy.

**Methods** The altered anatomy was reconstructed entirely with digital 3D programs using patient-analog data. Materials from textile research as well as rigid and flexible 3D printing materials were used for tissue reconstruction. Furthermore, artificial tissues were used to reconstruct realistic and interventional organ structures of the upper gastrointestinal tract without the use of animal material. Technical evaluation of the model combined with a short questionnaire was done during an ERCP workshop with 10 participants.

**Results** A modular hands-on training phantom which shows a Roux-en-Y Reconstruction after partial gastric resection was planned and developed. Evaluation was done by interventional endoscopic specialists. On a scale of 1 (very realistic) to 5 (not realistic at all), the average score for the overall impression of the model was 1.9. In addition, the individual sections and areas of the model were assessed according to various criteria.

**Conclusions** We developed and tested a patient-analog model to train endoscopic interventions in patients with postoperatively altered anatomy successfully.

## eP192 EFFECTIVENESS OF EX-VIVO PORCINE SIMULATOR ON ENDOSCOPIC ULTRASOUND-GUIDED CYSTOGASTROSTOMY USING LUMEN-APPPOSING METAL STENT (LAMS) TRAINING

**Authors** Roshdy N<sup>1</sup>, Taleb A<sup>2</sup>, Ibrahim M<sup>1,3</sup>

**Institute** 1 ROEYA Gastroenterology and Endoscopy Center, Cairo, Egypt; 2 New Giza University, Cairo, Egypt; 3 Theodor Bilharz Research Institute, Gastroenterology and Hepatology, Cairo, Egypt

**DOI** 10.1055/s-0041-1724688

**Citation:** Roshdy N, Taleb A, Ibrahim M eP192 EFFECTIVENESS OF EX-VIVO PORCINE SIMULATOR ON ENDOSCOPIC ULTRASOUND-GUIDED CYSTOGASTROSTOMY USING LUMEN-APPPOSING METAL STENT (LAMS) TRAINING. *Endoscopy* 2021; 53: S159.

**Aims** Endoscopic ultrasound (EUS) guided cystogastrostomy is a well-established endoscopic technique. However, it is an advanced technique with a steep learning curve. This necessitates an ex-vivo simulator that would allow endoscopists to be adequately trained. This is a preliminary study done to assess the efficacy of a new simulator in providing training for the EUS-guided cystogastrostomy using lumen-apposing metal stents (LAMS) specifically, the Hot AXIOS™ system

**Methods** The simulator was created by ROEYA training center using native porcine tissue to create fluid collection. Colon sections that were sutured on one side were used to create a pouch that was sutured to the anterior gastric wall. The simulator was designed and tested in advance while the hydrogel was added on site about 5-15 minutes prior to training.



The task was to successfully deploy the Hot AXIOS to drain the created cyst. The simulator was evaluated prospectively in 5 training sessions involving 19 international experts. After using the simulator, the experts were sent a questionnaire to assess their experience. The primary end point was overall satisfaction with the training.

**Results** Five questions were dedicated to the trained experts. All trained experts had more than 500 EUS procedures of experience prior to the training session.

The simulator was found realistic in EUS cystogastrostomy training in 89.4% (n = 17), visualization of the target lesion was successful in 100% (n = 19), anatomical accuracy was achieved in 78.9% (n = 15) and the simulator was found difficult to use in 5.2% (n = 1). Finally, the simulator was found effective in the expert's clinical practice in 73.6% (n = 14).

**Conclusions** This simulator helped the doctors with this technique in all parameters assessed. This preliminary study suggests that the aforementioned simulator can be used in training of EUS-guided cystogastrostomy using LAMS.

### eP193 ERGONOMY IN ENDOSCOPIC PROCEDURES: PREVENTION OF MUSCULOSKELETAL INJURIES DURING ENDOSCOPIC PROCEDURES BY USING BELT-LIKE MANOUVRING DEVICE WITH JOYSTICK CAPABILITIES

Author [Duric T<sup>1</sup>](#)

Institute 1 Charles University/3.rd Medical Faculty, Preventive Medicine, Prague, Czech Republic

DOI [10.1055/s-0041-1724689](#)

**Citation:** Duric T eP193 ERGONOMY IN ENDOSCOPIC PROCEDURES: PREVENTION OF MUSCULOSKELETAL INJURIES DURING ENDOSCOPIC PROCEDURES BY USING BELT-LIKE MANOUVRING DEVICE WITH JOYSTICK CAPABILITIES. *Endoscopy* 2021; 53: S160.

**Aims** Gastrointestinal endoscopy forms a significant proportion of clinicians' workloads. However, little attention is given to the ergonomic aspects of endoscopy. Experimental studies showed that forces and loads placed on endoscopists' bodies during procedures place them at risk of occupational injury. The main goal of the study was to show the difference in muscle work and overload during endoscopic procedures by applying belt-manouvring device (Endojoystick) with joystick abilities. It is a novelty in the area of endoscopic ergonomics with the intent of risk reduction and prevention of musculoskeletal injuries related to endoscopy.

**Methods** By using surface electromyography (EMG) muscle potentials were measured in areas of specific muscles of the left hand (Deltoid, Biceps, Triceps, Flexors, Extensors). Potentials were measured with and without the application of belt-manouvring device. The subject exercised the same basic set of endoscopic manouvers and movements for 1 minute, with and without the application of the belt-manouvring device.

**Results** Measured potentials showed that by using belt-like manouvring device muscle load on the left upper limb and shoulder **significantly decreased**. Subjectively, scope stability was improved.

**Conclusions** Injury prevention is a very important part of the modern endoscopy. Until now, no ergonomic accessories were available. Our data suggest a reduced risk in endoscopy related musculoskeletal injuries and subjective scope stabilisation improvement. Further studies on greater population are in progress.

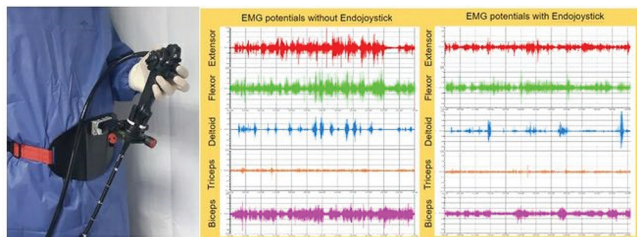


Fig.1

### eP194v MIGRATED ESOPHAGEAL METAL STENT – PROTECTION HOOD TO THE RESCUE!

Authors [Pereira Correia F<sup>1</sup>](#), [Alexandrino G<sup>1</sup>](#), [Bordalo Ferreira F<sup>1</sup>](#), [Carvalho R<sup>1</sup>](#), [Carvalho Lourenço L<sup>1</sup>](#), [Martins A<sup>1</sup>](#)

Institute 1 Hospital Prof. Dr. Fernando Fonseca, Gastroenterology, Amadora, Portugal

DOI [10.1055/s-0041-1724690](#)

**Citation:** Pereira Correia F, Alexandrino G, Bordalo Ferreira F et al. eP194v MIGRATED ESOPHAGEAL METAL STENT – PROTECTION HOOD TO THE RESCUE!. *Endoscopy* 2021; 53: S160.

The protection hood is an accessory widely used in the removal of foreign bodies from the gastrointestinal tract. We present the case of a patient with esophageal neoplasm in which an esophageal stent was placed. Due to tumor shrinkage with chemotherapy, there was migration of the stent to the stomach. We decided to use the protection hood given the esophageal friability with a high risk of bleeding and perforation. In this way, we successfully and safely removed the stent. This case shows the potential of the protection hood in a clinical situation in which it is not frequently used.

### eP195 AN UNCOMMON CAUSE OF WEIGHT LOSS

Author [Chu P<sup>1</sup>](#)

Institute 1 Princess Margaret Hospital, Hong Kong, Hong Kong, SAR of China

DOI [10.1055/s-0041-1724691](#)

**Citation:** Chu P<sup>1</sup> eP195 AN UNCOMMON CAUSE OF WEIGHT LOSS. *Endoscopy* 2021; 53: S160.

**Aims** Case report

**Methods** Case report

**Results** 59-year-old gentleman was referred to clinic for weight loss of 10kg over 3months. He had appendectomy and partial colectomy in mainland China 20years ago for intestinal obstruction, partial gastrectomy for perforated peptic ulcer 10years ago. Detailed operative record was not traceable. For years he has had on and off diarrhea, significant weight loss over the recent 3months. Blood tests showed hypokalemia, low B12, macrocytic anemia, hypoalbuminemia. Upper endoscopy showed Billroth II gastrectomy otherwise unremarkable. Barium meal and follow-through showed partial gastrectomy with normal transit time from stomach to colon. Colonoscopy showed poor bowel preparation with sticky stool obscuring mucosal surface; two small bowel-colon anastomoses at 50cm from anal verge. Unremarkable PET-CT and albumin scintiscan. He suffered an episode of severe hypoalbuminemia, hypokalemia, pulmonary edema complicated by septicemia, DIC necessitating intensive care.

A second colonoscopy showed very poor bowel preparation again. Gastric remnant was reached at 45cm, which was connected to a small bowel limb. Contrast meal and follow-through repeated; contrast first seen flowing down to gastric remnant then distal transverse and descending colon. On further infusion, contrast went down efferent limb of gastrojejunostomy into proximal small bowel, confirming the suspicion of entero-colonic fistula. Repeated upper endoscopy revealed a fistulation from gastric remnant at the posterior wall of anastomosis to the colon.

After improvement of patient's nutritional status, surgical repair was undertaken. Intra-operative found distal gastrectomy with antecolic gastrojejunostomy with part of the transverse colon included at the posterior wall of the gastrojejunostomy. The anastomosis was disassembled, gastrojejunostomy revised as roux-en-Y reconstruction.

**Conclusions** Gastrojejunocolic fistula is a rare finding in current practice, but a high index of suspicion should be maintained in patients with a history of gastric surgery presenting with any of the symptoms of chronic diarrhea, weight loss and classically but not necessarily fecal vomiting.

## eP196 IMPROVING ADHERENCE TO ENDOSCOPY GUIDELINES FOR TRIAGE AND SURVEILLANCE IN A SINGLE ENDOSCOPY UNIT

Authors [Cudmore J](#)<sup>1</sup>, [Stewart S](#)<sup>1</sup>, [Kerr H](#)<sup>1</sup>, [MacMathuna P](#)<sup>1</sup>, [Leyden J](#)<sup>1</sup>, [Lahiff C](#)<sup>1</sup>, [Kelleher B](#)<sup>1</sup>, [Muslow J](#)<sup>1</sup>, [Bennett G](#)<sup>1</sup>

Institute 1 Mater Misericordiae University Hospital, Department of Gastroenterology, Dublin, Ireland

DOI 10.1055/s-0041-1724692

Citation: Cudmore J, Stewart S, Kerr H et al. eP196 IMPROVING ADHERENCE TO ENDOSCOPY GUIDELINES FOR TRIAGE AND SURVEILLANCE IN A SINGLE ENDOSCOPY UNIT. *Endoscopy* 2021; 53: S161.

**Aims** Encouraging adherence to agreed triage guidelines is a critical facet of endoscopy waiting list management, particularly in the current climate of COVID-19. Unfortunately, few such guidelines exist and there is considerable variability in their application.

The aim of this study was to determine if the use of locally developed flowsheets, created using existing guidelines, could aid in standardisation of endoscopy triage and surveillance in a single endoscopy unit.

**Methods** Existing international (BSG) and national (NICE, NCSS and HIQA) guidelines were reviewed. Simple flowsheets were devised to address upper and lower GI endoscopy triage, polyp and Barretts surveillance, family history of colorectal cancer. A baseline quiz involving clinical scenarios was devised and endoscopy users were invited to participate. The quiz was then retaken after reviewing the relevant flowsheets.

**Results** 20 endoscopy users took part. The mean number of correct answers increased significantly after reviewing flowsheets (45±11% v 71±12%; p<0.0001). Similar improvements were noted across both the triage and surveillance sections (25±15% v 25±18%; p=0.8368), and between nursing and medical staff (24±18% v 27±15%; p=0.7075). Consultants had more correct answers than nurses at initial assessment (56±5% v 42±12%; p=0.054) but there was no significant difference after reviewing the flowsheets (71±10% v 66±14%; p=0.5566).

**Conclusions** We have shown a significant improvement in triage accuracy after reviewing appropriate guideline flowsheets among medical and nursing staff. While medical staff performed better at initial assessment, there was no significant difference between medical and nursing staff scores after reviewing the guidelines.

We conclude that all staff should refer to guidelines when triaging clinical requests. In addition it reassures us that nurses, with appropriate guidelines as reference, can be utilised to support or replace doctor-led triage.

## eP197 DEVELOPMENT OF THE TEAM-ENTS (TEAMWORK IN ENDOSCOPY ASSESSMENT MODULE FOR ENDOSCOPIC NON-TECHNICAL SKILLS) FRAMEWORK

Authors [Ravindran S](#)<sup>1</sup>, [Cavilla R](#)<sup>2</sup>, [Healey C](#)<sup>1</sup>, [Coleman M](#)<sup>1</sup>, [Ashrafian H](#)<sup>3</sup>, [Haycock A](#)<sup>4</sup>, [Archer S](#)<sup>5</sup>, [Darzi A](#)<sup>3</sup>, [Thomas-Gibson S](#)<sup>4</sup>

Institute 1 Joint Advisory Group on Gastrointestinal Endoscopy, London, United Kingdom; 2 NHS England and NHS Improvement, London, United Kingdom; 3 Imperial College London, London, United Kingdom; 4 St Mark's Hospital, Wolfson Unit for Endoscopy, London, United Kingdom; 5 University of Cambridge, Department of Public Health and Primary Care, Cambridge, United Kingdom

DOI 10.1055/s-0041-1724693

Citation: Ravindran S, Cavilla R, Healey C et al. eP197 DEVELOPMENT OF THE TEAM-ENTS (TEAMWORK IN ENDOSCOPY ASSESSMENT MODULE FOR ENDOSCOPIC NON-TECHNICAL SKILLS) FRAMEWORK. *Endoscopy* 2021; 53: S161.

**Aims** Teamworking is crucial to team performance and has been demonstrated to improve the quality and safety of care. Non-technical Skills (NTS) are integral to teamworking and NTS frameworks have been used to support training and assessment in healthcare. The aim of this study was to develop a novel team-based NTS framework in endoscopy – TEAM-ENTS (Teamwork in Endoscopy Assessment Module for Endoscopic Non-Technical Skills).

**Methods** A qualitative mixed-methods study was conducted to ascertain the core NTS relevant to endoscopy teams. This was undertaken in two phases: 1) a detailed literature review of team-based NTS frameworks in the literature and, 2) an interview study of endoscopists and endoscopy nurses utilising Cognitive Task Analysis (CTA). Transcribed interviews were analysed by two researchers using framework analysis involving both joint and independent coding. A codebook of relevant skills and behaviours was created which formed the basis for the TEAM-ENTS framework.

**Results** After screening of 1162 articles, 36 were reviewed encompassing 14 team-based NTS frameworks across the medical literature. In total, 13 semi-structured interviews were completed involving 7 endoscopists and 6 nurses. The mean number of years in role was 15.2 and mean lifetime procedure count was 9571. Following joint review, 88 codes were identified from transcribed interviews. These fell into 5 major categories: 1) Communication, 2) Planning, decision-making and problem-solving, 3) Leadership and coordination, 4) Situation awareness and 5) Teamwork, cooperation and support. A hierarchical framework was created of overarching categories, split into elements and characterised by behavioural descriptors informed by the literature review (see ►Table 1). The final TEAM-ENTS framework consists of 5 categories, 17 elements and 58 behavioural descriptors.

**Conclusions** The TEAM-ENTS framework contains the core NTS relevant to endoscopy teams. Further work is underway to refine the tool through an online Delphi study followed by an observational validation study.

►Table 1 - GI Consultants vs Nursing Staff

	Baseline Quiz	Second Quiz	Improvement
GI Consultants	56 %	71 %	15 %
Nursing Staff	42 %	66 %	24 %
P-Value	0.054	0.5566	0.4018

►Tab. 1

COMMUNICATI ON	1. Information exchange	1. Effective information exchange between team members 2. Maintaining open lines of communication between team members 3. Communicating with the patient (if able to do so)
	2. Maintaining open dialogue	
	3. Patient communication	

<p><b>PLANNING, DECISION-MAKING &amp; PROBLEM-SOLVING</b></p>	<ol style="list-style-type: none"> <li>1. Preparation</li> <li>2. Joint decision-making</li> <li>3. Reviewing outcomes</li> </ol>	<ol style="list-style-type: none"> <li>1. Preparing team members for events and actions. Ensuring everyone is ready</li> <li>2. Team members making decisions together</li> <li>3. Reviewing outcomes of decisions</li> </ol>
<p><b>LEADERSHIP &amp; COORDINATION</b></p>	<ol style="list-style-type: none"> <li>1. Control and responsibility</li> <li>2. Role delegation</li> <li>3. Team adaptation</li> <li>4. Team diagnosis</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintaining control and responsibility over a situation</li> <li>2. Team members aware of roles and skill mix</li> <li>3. Adapting the team to the task or task to the team</li> <li>4. Recognising issues or limitations within the team</li> </ol>
<p><b>SITUATION AWARENESS</b></p>	<ol style="list-style-type: none"> <li>1. Problem recognition and focus</li> <li>2. Shared understanding</li> <li>3. Anticipating events</li> </ol>	<ol style="list-style-type: none"> <li>1. Detection of issues, having a wider awareness of the environment and maintaining focus</li> <li>2. Ensuring the team have a shared understanding of events</li> <li>3. Identifying future problems and thinking ahead</li> </ol>
<p><b>TEAMWORK, COOPERATION &amp; SUPPORT</b></p>	<ol style="list-style-type: none"> <li>1. Teambuilding and trust</li> <li>2. Cohesion</li> <li>3. Support</li> <li>4. Assertion</li> </ol>	<ol style="list-style-type: none"> <li>1. Building the team to be a functioning unit, developing trust between team members</li> <li>2. Team members working together, valuing each other and conflict resolution</li> <li>3. Team members providing and seeking support</li> <li>4. Appropriate assertion of opinion to other team members</li> </ol>

## eP198 EVALUATION OF A MODIFIED ERLANGEN SIMULATOR FOR ERCP (EASIE-RTM) USING TWO DIFFERENT DUODENOSCOPES

Authors [Adamsen S<sup>1</sup>](#), [Højgaard Tølbøll T<sup>2</sup>](#), [Matthes K<sup>3</sup>](#)

Institute 1 Copenhagen University Hospital Bispebjerg, Digestive Disease Center, Copenhagen, Denmark; 2 Ambu A/S, Ballerup, Denmark; 3 EndoSim Europe GmbH, Büchenbach, Germany

DOI 10.1055/s-0041-1724694

Citation: Adamsen S, Højgaard Tølbøll T, Matthes K eP198 EVALUATION OF A MODIFIED ERLANGEN SIMULATOR FOR ERCP (EASIE-R) USING TWO DIFFERENT DUODENOSCOPES. Endoscopy 2021; 53: S161.

**Aims** Evaluation of an ERCP simulator with respect to face validity and ability to evaluate the performance of two different duodenoscopes.

**Methods** The EASIE-RTM is a modification of the Erlangen Active Simulator for Interventional Endoscopy (EASIE) (EndoSim, LLC, Bolton, MS, USA) with an artificial papilla (chicken heart) and a biliary tree (plastic tubes). Thirteen experienced endoscopists evaluated it using two duodenoscopes in a randomized experimental bench study. The papilla was cannulated with a sphincterotome and a guidewire. Time to reach specific anatomical landmarks and to complete deep cannulation was registered in seconds, with  $p < 0.05$  considered significant. Assessment of the model was conducted to determine face and construct validity. Duodenoscopes (with CO<sub>2</sub>, suction and water for rinsing) were the reusable Olympus TJF-Q180V (Olympus, Shinjuku, Tokyo, Japan), and a Ambu aScope™ Duodeno (Ambu A/S, Copenhagen, Denmark), a novel sterile, single-use duodenoscope which the endoscopists had not used before. Processors: EVIS EXERA III CV/CLV-190 (Olympus) and the aBox™ Duodeno (Ambu).

**Results** In all 26 ERCPs deep cannulation was accomplished (100%, 95%CI: 77-100%). Time to reach the landmarks did not differ statistically, while cannulation time was longer with the aScope Duodeno (200 vs. 123 seconds,  $p < 0.05$ ). Median cannulation time when the aScope was the first endoscope was 209 seconds, and 134 as the second endoscope (NS). Experienced endoscopists (>1.000 ERCPs) used 134 seconds for cannulation, compared to 217 for less experienced. This difference was not statistically significant ( $p > 0.05$ ), but there is a risk of a Type-II error. All participants found the model realistic with respect to appearance of the organs, navigating the endoscopes in the model, and cannulation of the papilla.

**Conclusions** This experimental study demonstrated face validity of the EASIE-RTM ERCP model. The simulator was assessed to be realistic and capable to discriminate between two different duodenoscopes with respect to time needed for cannulation.

► Tab. 1

TIME (sec., median) TO LANDMARKS	Olympus TJF-Q180V	Ambu aScope Duodeno	
Pylorus	28	32	NS
Papilla identified	62	109	NS
Cannulation position	73	125	NS
Deep cannulation achieved	123	200	P-Wilcoxon <0.01

## eP199 MORE YOUNG ADULTS DETECTED WITH 3+ ADENOMAS AFTER BOWEL PREPARATION WITH 1L POLYETHYLENE GLYCOL NER1006 VERSUS 2L POLYETHYLENE GLYCOL OR ORAL SULFATE SOLUTION

Authors Álvarez-González MA<sup>1</sup>, Clayton L<sup>2</sup>

Institute 1 Hospital del Mar, Digestive Diseases, Barcelona, Spain; 2 Norgine Ltd, Clinical Development, Harefield, United Kingdom

DOI 10.1055/s-0041-1724695

Citation: Álvarez-González MA, Clayton L eP199 MORE YOUNG ADULTS DETECTED WITH 3+ ADENOMAS AFTER BOWEL PREPARATION WITH 1L POLYETHYLENE GLYCOL NER1006 VERSUS 2L POLYETHYLENE GLYCOL OR ORAL SULFATE SOLUTION. Endoscopy 2021; 53: S163.

**Aims** The prevalence of colorectal adenomas is age-dependent, with patients aged ≥60 years mostly affected. Young adults aged ≤50 years have recently been identified as potentially at increased risk of developing colorectal adenomas and colorectal cancer. Clinical guidelines recommend shorter surveillance periods for patients detected with three or more adenomas<sup>1</sup>. We analysed whether 1L polyethylene (PEG)-based NER1006 can allow endoscopists to detect more adenomas in young adults than 2LPEG/OSS.

**Methods** Analysis of the combined overnight split-dosing arms (NER1006/NER1006 versus 2LPEG/OSS) of the phase 3 clinical trials MORA and NOCT<sup>2, 3</sup>. Included patients aged 18-49 years and had documented polyp and adenoma counts in the overall colon and right colon, assessed by the site endoscopists. Patients with three or more adenomas (ADR3+) in the overall and at least one adenoma in the right colon (rADR) were assessed per combined treatment. Similarly, the mean number of adenomas per patient for both the overall (MAP) and right colon (rMAP) were also analysed. Statistical comparisons used the 1-sided t-test.

**Results** A total of 216 patients (NER1006: 96 and 2LPEG/OSS: 120) were included. NER1006 showed greater detection rates of ADR3+ (4.2% [4/96] versus 0% [0/120]; P=0.012), and rADR (6.3% [6/96] versus 1.7% [2/120]; P=0.038) than 2LPEG/OSS (▶Table). NER1006 also enabled a greater MAP (0.35 (0.14, 0.57) versus 0.18 (0.11, 0.24); P=0.044) and rMAP (0.08 (0.01, 0.15) versus 0.02 (-0.01, 0.04); P=0.026) than 2LPEG/OSS.

▶Table: Adenoma detection in patients aged 18-49 years.

	NER1006	2LPEG/OSS	1-sided p-value
<b>ADR3+: Patients with at least three adenomas in the overall colon, % (n/N)</b>	4.2% (4/96)	0% (0/120)	0.012
<b>rADR: Patients with at least one adenoma in the right colon, % (n/N)</b>	6.3% (6/96)	1.7% (2/120)	0.038
<b>MAP: Number of adenomas per patient, mean (95% Confidence Interval)</b>	0.35 (0.14, 0.57)	0.18 (0.11, 0.24)	0.044
<b>rMAP: Number of right colon adenomas per patient, mean (95% Confidence Interval)</b>	0.08 (0.01, 0.15)	0.02 (-0.01, 0.04)	0.026

**Conclusions** Bowel preparation with NER1006 allowed detection of more patients with adenomas and also more adenomas per patient in young adults, compared to 2LPEG/OSS.

References: [1] Hassan C et al, Endoscopy. 2020 Aug;53(8):687–700.

[2] Bisschops R et al, Endoscopy. 2019 Jan;51(1):60–72.

[3] DeMicco MP et al, Gastrointest Endosc. 2018 Mar;87(3):677–687.e3.

## eP200 MORE ADULT MALE PATIENTS DETECTED WITH 5+ ADENOMAS AFTER BOWEL PREPARATION WITH 1L POLYETHYLENE GLYCOL NER1006 VERSUS 2L POLYETHYLENE GLYCOL OR ORAL SULFATE SOLUTION

Authors Álvarez-González MA<sup>1</sup>, Halonen J<sup>2</sup>

Institute 1 Hospital del Mar, Digestive Diseases, Barcelona, Spain; 2 Norgine Ltd, Medical Affairs, Harefield, United Kingdom

DOI 10.1055/s-0041-1724696

Citation: Álvarez-González MA, Halonen J eP200 MORE ADULT MALE PATIENTS DETECTED WITH 5+ ADENOMAS AFTER BOWEL PREPARATION WITH 1L POLYETHYLENE GLYCOL NER1006 VERSUS 2L POLYETHYLENE GLYCOL OR ORAL SULFATE SOLUTION. Endoscopy 2021; 53: S163.

**Aims** Male gender is more susceptible to develop colorectal adenomas and colorectal cancer. Both European and US clinical guidelines recommend a 3-year post-polypectomy surveillance period for patients with five or more colorectal adenomas<sup>1, 2</sup>. We examined whether 1L polyethylene glycol (PEG)-based NER1006 can allow endoscopists to detect more adenomas in male patients versus 2LPEG/OSS.

**Methods** Analysis of the combined overnight split-dosing arms (NER1006/NER1006 versus 2LPEG/OSS) of the phase 3 clinical trials MORA and NOCT<sup>3, 4</sup>. Included patients were males with documented polyp and adenoma counts in the overall colon, assessed by the site endoscopists. Patients with at least three (ADR3+) and five adenomas (ADR5+) were assessed per combined treatment. Similarly, the mean overall number of polyps (MPP) and adenomas (MAP) per patient were also analysed. Statistical comparisons used the 1-sided t-test.

**Results** A total of 524 male patients (NER1006: 241 and 2LPEG/OSS: 283) were included. The proportion of male patients detected with at least three

▶Table 1 Polyp and adenoma detection in male patients.

	NER1006	2LPEG/OSS	1-sided p-value
<b>ADR5+: Patients with at least five adenomas, % (n/N)</b>	5.0% (12/241)	2.1% (6/283)	0.037
<b>ADR3+: Patients with at least three adenomas, % (n/N)</b>	13.7% (33/241)	8.1% (23/283)	0.020
<b>MPP: Number of polyps per patient, mean (95% Confidence Interval)</b>	1.75 (1.28, 2.21)	1.3 (1.08, 1.52)	0.036
<b>MAP: Number of adenomas per patient, mean (95% Confidence Interval)</b>	1.14 (0.77, 1.51)	0.76 (0.60, 0.92)	0.024



adenomas was greater with NER1006 than with 2LPEG/OSS (13.7% [33/241] versus 8.1% [23/283];  $P=0.020$ ) (Table). With NER1006, a significant proportion of male patients were identified with at least five adenomas (5.0% [12/241] versus 2.1% (6/283);  $P=0.037$ ) than 2LPEG/OSS. NER1006 also enabled detection of more polyps per male patient (1.75 (1.28, 2.21) versus 1.3 (1.08, 1.52);  $P=0.036$ ) and more adenomas per male patient (1.14 (0.77, 1.51) versus 0.76 (0.60, 0.92);  $P=0.024$ ) than 2LPEG/OSS.

**Conclusions** In adult male patients, bowel preparation with NER1006 enabled detection of more patients with either at least three or five adenomas, compared to 2LPEG/OSS. NER1006 also helped in detecting more polyps or adenomas per patient.

**References** [1] Hassan C et al, *Endoscopy*. 2020 Aug;53(8):687–700.  
[2] Gupta S et al, *Gastroenterology*. 2020 Mar;158(4):1131–1153.e5.  
[3] Bisschops R et al, *Endoscopy*. 2019 Jan;51(1):60–72.  
[4] DeMicco MP et al, *Gastrointest Endosc*. 2018 Mar;87(3):677–687.e3.

## eP201 MORE OVERWEIGHT/OBESE MALE PATIENTS DETECTED WITH 5+ ADENOMAS AFTER BOWEL PREPARATION WITH 1L POLYETHYLENE GLYCOL NER1006 VERSUS 2L POLYETHYLENE GLYCOL ORAL SULFATE SOLUTION

**Authors** Álvarez-González MA<sup>1</sup>, Amlani B<sup>2</sup>

**Institute** 1 Hospital del Mar, Digestive Diseases, Barcelona, Spain; 2 Norgine Ltd, Medical Affairs, Harefield, United Kingdom

**DOI** 10.1055/s-0041-1724697

**Citation:** Álvarez-González MA, Amlani B. eP201 MORE OVERWEIGHT/OBESE MALE PATIENTS DETECTED WITH 5+ ADENOMAS AFTER BOWEL PREPARATION WITH 1L POLYETHYLENE GLYCOL NER1006 VERSUS 2L POLYETHYLENE GLYCOL ORAL SULFATE SOLUTION. *Endoscopy* 2021; 53: S164.

**Aims** Male gender and high BMI increase the risk of colorectal cancer. Both European and US clinical guidelines recommend a 3-year post-polypectomy surveillance period for patients with  $\geq 5$  colorectal adenomas<sup>1, 2</sup>. We examined whether 1L polyethylene glycol (PEG)-based NER1006 can allow endoscopists to detect more adenomas in overweight/obese male patients versus 2LPEG/OSS.

**Methods** Analysis of the combined overnight split-dosing arms (NER1006/NER1006 versus 2LPEG/OSS) of the phase 3 clinical trials MORA and NOCT<sup>3, 4</sup>. Included patients were males with a BMI  $\geq 25$  kg/m<sup>2</sup> and had documented polyp and adenoma counts in the overall colon, assessed by the site endoscopists. Patients with at least three (ADR3+) and five adenomas (ADR5+) were assessed per combined treatment. The mean number of adenomas per patient for patients with at least one adenoma (MAP+), and the mean overall number of adenomas per patient (MAP) were analysed. Statistical comparisons used the 1-sided t-test.

**Results** 424 patients (NER1006: 199, 2LPEG/OSS: 225) were included. NER1006 enabled a greater proportion of patients to be diagnosed with at least three adenomas than 2LPEG/OSS (15.1% [30/199] versus 8.4% [19/225];  $P=0.02$ ) (Table). With NER1006, a significant proportion of patients were identified with at least five adenomas (5.5% [11/199] versus 1.8% [4/225];  $P=0.02$ ) than 2LPEG/OSS. Among lesion-positive patients, NER1006 showed greater MAP+ (2.54 (2.08, 3.00) versus 1.89 (1.57, 2.21);  $P=0.01$ ) than 2LPEG/OSS. NER1006 achieved a significantly greater MAP (1.11 (0.85, 1.38) versus 0.81 (0.63, 1.00);  $P=0.03$ ) than 2LPEG/OSS.

**Conclusions** Bowel preparation with NER1006 enabled detection of more overweight/obese male patients with either at least five or three adenomas, and more adenomas per patient, compared to 2LPEG/OSS.

**References** [1] Hassan C et al, *Endoscopy*. 2020 Aug; 53(8):687–700.  
[2] Gupta S et al, *Gastroenterology*. 2020 Mar; 158(4):1131–1153.e5.  
[3] Bisschops R et al, *Endoscopy*. 2019 Jan; 51(1):60–72.  
[4] DeMicco MP et al, *Gastrointest Endosc*. 2018 Mar; 87(3):677–687.e3.

►Table Adenoma detection in overweight/obese male patients.

	NER1006	2LPEG/OSS	1-sided p-value
<b>ADR5+:</b> Patients with at least five adenomas, % (n/N)	5.5% (11/199)	1.8% (4/225)	0.02
<b>ADR3+:</b> Patients with at least three adenomas, % (n/N)	15.1% (30/199)	8.4% (19/225)	0.02
<b>MAP: Number of adenomas per patient, mean (95% Confidence Interval)</b>	1.11 (0.85, 1.38)	0.81 (0.63, 1.00)	0.03
<b>MAP+: Number of adenomas per patient in lesion-positive patients, mean (95% Confidence Interval)</b>	2.54 (2.08, 3.00)	1.89 (1.57, 2.21)	0.01

## eP202 POLYP DETECTION RATE AND ASSOCIATED FACTORS

**Authors** Ben Mohamed A<sup>1</sup>, Laabidi S<sup>1</sup>, Medhioub M<sup>1</sup>, Khsiba A<sup>1</sup>, Mahmoudi M<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz M<sup>1</sup>

**Institute** 1 Faculty of Medicine of Tunis/Mohamed Taher Maamouri Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724698

**Citation:** Ben Mohamed A, Laabidi S, Medhioub M et al. eP202 POLYP DETECTION RATE AND ASSOCIATED FACTORS. *Endoscopy* 2021; 53: S164.

**Aims** To determine the polyp detection rate as well as the associated factors.

**Methods** We conducted a retrospective study, including consecutively all colonoscopies performed in the gastroenterology department. We have specified parameters relating to patients, colonoscopy and pathological results of resected polyps. Factors related to polyp detection rate (PDR) were evaluated by uni and multivariate analysis.

**Results** Eight hundred and six colonoscopies were performed (420 (52.1%) males; median age; 57.1 $\pm$ 16 (17-92)). Suboptimal preparation (defined by a Boston score <7) was observed in 50.86% of patients (n= 409). Eight hundred and six total colonoscopies detected 591 polyps in 252 patients. Polypectomy was performed in 218 patients. Anatomopathological examination showed: low-grade dysplastic adenoma in 56.2% of cases, high-grade dysplastic adenoma in 13.17% of cases, serrated polyps in 13.7% of cases and hyperplastic polyps in 17.44% of cases. Mean number of polyps was 2.33  $\pm$  2.65 and PDR was 31.24%. One hundred and twenty-seven colonoscopies detected more than one polyp. Large polyp detection rate ( $\geq 10$  mm) was 9.67% with detection of 78 polyps (13.19% of polyps) in 53 patients. The neoplasia detection rate was 4.34% (35 neoplasias). On univariate analysis, high PDR was

significantly associated with patient-dependent factors: age  $\geq 45$  years ( $p < 0.001$ ), male gender ( $p = 0.002$ ), family history of polyp or cancer ( $p = 0.003$ ) and Boston score  $\geq 7$  ( $p = 0.0035$ ). In multivariate analysis, the only factors associated with elevated PDR were age  $\geq 45$  years and a family history of polyp or colorectal neoplasia.

**Conclusions** In our series, we diagnosed polyps in more than a third of patients, regardless of their age and indications. On multivariate analysis, elevated PDR was significantly associated with a family history of polyp or cancer and patient age.

## eP203 COLON POLYPS ENDOSCOPIC DETECTION VERSUS MICROSCOPIC CONFIRMATION

**Authors** Ud-din B<sup>1</sup>, Wazir I<sup>1</sup>, Krishnamoorthy R<sup>1</sup>

**Institute** 1 Royal Derby Hospital NHS UK, Gastroenterology, Derby, United Kingdom

**DOI** 10.1055/s-0041-1724699

**Citation:** Ud-din B, Wazir I, Krishnamoorthy R eP203 COLON POLYPS ENDOSCOPIC DETECTION VERSUS MICROSCOPIC CONFIRMATION. *Endoscopy* 2021; 53: S165.

**Aims** Colon polyps mucosal protrusions occurring in the colon lumen most commonly sporadic or as part of other syndromes. Bowel polyps are very common, affecting around 1 in 4 people aged 50 or over. Serrated polyps have been recognized in the last decade as important premalignant lesions accounting for between 15% and 30% of colorectal cancers.

We did an Audit about hyperplastic Polyps in bowel cancer screen patients, its site, and terminology used to describe the polyps on endoscopy report as per BSG Guidelines for example Hyperplastic polyps (HP), Sessile serrated lesion (SSL), and SSL with Dysplasia, confirming is against histopathology report. We tried to find how accurately the polyps can be detected on endoscopy and the terminology used as per guidelines.

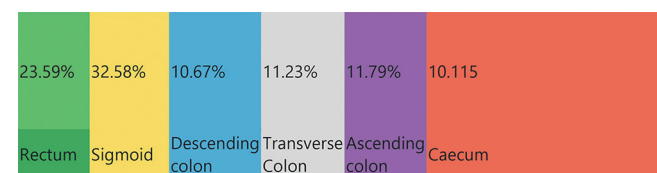
**Methods** Its retrospective audit, all patients who had bowel cancer screening colonoscopy from Jan 2018 till Dec 2018. Data was collected from the endoscopy reports and then compared with the histology reports, hospital electronic reporting system was used.

### Results

Total number of colonoscopies = 827

Total number of patients with polyps = 505 (61.06%)

Colonic Polyps Site. ▶ **Table**



**Fig.1**

Total number of patient (Jan 2018 till Dec 2018) 827

Total number of patients identified to have polyps 505 (all lesions)

Percentage of patients with polyps (all lesions) 61.06 HP/SSL identified during endoscopy 22

Histology Report confirms HP/SSL in 131

Percentage endoscopist correctly identifies HP/SSL 16.7

Percentage of patients having HP/SSL 25.9

**Conclusions** Hyperplastic polyps are more common on the left side of the colon (rectum and sigmoid). There are still more than 30% HP/SSL on the right side of the colon with clinical significance. We need to update the endoscopy reporting system to facilitate endoscopists to correctly identify these lesions, the terminology needs to be used as per the British Society of Gastroenterology guidelines. There is further work needed to do the data and clinical significance of HP/SSL lesions.

## eP204 REPEATED FORWARD-VIEW EXAMINATION IMPROVES DETECTION OF MISSED POLYPS IN THE RIGHT-SIDED COLON

**Authors** Ben Farhat F<sup>1</sup>, Bouchabou B<sup>1</sup>, Ennaifer R<sup>1</sup>, El kefi M<sup>1</sup>, Bougassas W<sup>1</sup>, Ben Nejma H<sup>1</sup>

**Institute** 1 Mongi Slim Hospital, Gastroenterology, Tunis, Tunisia

**DOI** 10.1055/s-0041-1724700

**Citation:** Ben Farhat F, Bouchabou B, Ennaifer R et al. eP204 REPEATED FORWARD-VIEW EXAMINATION IMPROVES DETECTION OF MISSED POLYPS IN THE RIGHT-SIDED COLON. *Endoscopy* 2021; 53: S165.

**Aims** Right colon polyps can be missed especially when they are located on the backs of haustral folds. The aim of this study was to analyze the efficacy of an additional observation using white light imaging (WLI) for detecting polyps.

**Methods** We enrolled patients undergoing colonoscopy from June to October 2020 in our endoscopy unit. All colonoscopies were performed by the same endoscopist. Patients were divided into 2 groups. In all patients, the cecum and ascending colon were observed with white light imaging (WLI) first. In Groupe 2, the colonoscope was inserted again, and the cecum and ascending colon were observed for an additional one minute. Polyps detection rate (PDR) was examined in both groups.

**Results** One hundred and twelve patients were included in our study. The mean age was 56.2 years [18,83]. The sex ratio was 1.43. The most frequent indications for colonoscopy were transit disorders such as constipation and diarrhea in 17,8%, digestive bleeding in 13,4% and iron deficiency anemia in 10,7% of cases. The mean Boston score was 6/9. Groupe 1 included 52 patients and groupe 2 included 59 patients. The average withdrawal time was 12 minutes. In the first group, PDR was 17,3%. In the second group, PDR was 44%. ( $p = 0,002$ ). No severe adverse events occurred during the repeated forward-view withdrawal.

**Conclusions** According to our results, the repeated forward-view examination in the right colon significantly improves polyps detection rate with no additional side effects.

## eP205 PROMISING BIOMARKERS SERRATED ADENOMAS OF THE COLON

**Authors** Vereshchak V<sup>1</sup>, Karasev I<sup>1</sup>, Davydkina T<sup>1</sup>, Malikhova O<sup>1</sup>

**Institute** 1 Federal State Budgetary Educational Institution Additional Professional Educational Education Russian Medical Academy Continuing Professional Education of The Ministry of Health of The Russian Federation, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724701

**Citation:** Vereshchak V<sup>1</sup>, Karasev I<sup>1</sup>, Davydkina T et al. eP205 PROMISING BIOMARKERS SERRATED ADENOMAS OF THE COLON. *Endoscopy* 2021; 53: S165.

**Aims** The exact understanding of the pathogenesis of dentate tumors is not reliably determined, it is obvious that the development of neoplasms is influenced by molecular genetic factors, the microbial composition of the colon, chronic inflammation, chemical and biological carcinogens.

**Methods** The main mass of the colon microbiota is located near the wall, forming microcolonies protected from external influences by an exo-polysaccharide-mucin biofilm. Wall microbiota sampling was performed in 25 patients, then the material was sent for sequencing 16s rRNA of the intestinal microbiota.

**Results** Carcinogenesis of dentate epithelial formations of the colon is a complex process, the leading pathogenetic signs of which are activation of the MAPK kinase pathway (in the vast majority of cases, due to somatic BRAF mutations) and epigenetic dysregulation due to hypermethylation of the promoter regions of a number of genes and the formation of the CIMP phenotype. These events are detected at the early stages of the neoplastic process and are actively involved in the evolution of hyperplastic polyps, SSA to TSA. The culmination of this path is an irreversible transformation into a malignant epithelial

tumor adenocarcinoma of the colon. In recent years, evidence has been obtained for the significance of intestinal microbiome disorders in carcinogenesis. Patients with dentate formations had significantly increased levels of Fusobacteria, Actinobacteria, and Bacteroidetes. In addition, when comparing the number of Firmicutes bacteria, the authors found a significant reduction in the content of Clostridium and Coprococcus in the group of individuals with colorectal cancer compared with the control group. The results of the study suggest that an imbalance of the microbial community is considered a risk condition for the formation of colorectal cancer.

**Conclusions** Serrated adenomas are a heterogeneous group of epithelial tumors. Risk factors for malignant transformation include a number of genetic mutations, chronic colitis, and dysbiotic conditions.

## eP206 IS SYSTEMATIC HISTOPATHOLOGICAL ASSESSMENT FOR SMALL COLORECTAL POLYPS ALWAYS JUSTIFIED?

**Authors** Zinelabidine F<sup>1</sup>, Hammami A<sup>2</sup>, Hassine A<sup>2</sup>, Ben Ameur W<sup>2</sup>, Dahmani W<sup>2</sup>, Elleuch N<sup>2</sup>, Ben Slama A<sup>2</sup>, Ksiaa M<sup>2</sup>, Braham A<sup>2</sup>, Ajmi S<sup>2</sup>, Jaziri H<sup>2</sup>, Jmaa A<sup>2</sup>

**Institute** 1 University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sahloul-Sousse, Tunisia; 2 University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0041-1724702

**Citation:** Zinelabidine F, Hammami A, Hassine A et al. eP206 IS SYSTEMATIC HISTOPATHOLOGICAL ASSESSMENT FOR SMALL COLORECTAL POLYPS ALWAYS JUSTIFIED?. Endoscopy 2021; 53: S166.

**Aims** Small polyps represent the majority of colorectal polyps detected in colonoscopy and they are considered to have low potential for malignant transformation. Given the low risk of advanced adenomas in this group, the « DETECT and LEAVE » strategy is usually discussed for diminutive polyps ( $\leq 5$  mm) because of its high cost. The aim of this study is to determine the histopathological nature of resected diminutive colorectal polyps ( $\leq 5$  mm) and to evaluate the necessity of a systematic histopathological assessment.

**Methods** Patients who underwent polypectomy for small colorectal polyps during a 4 year period from 2016 to 2020 were included in this retrospective study. Two groups were defined: the first group for small polyps [6 – 10 mm] and the second for diminutive polyps ( $\leq 5$  mm). Endoscopic and histopathological data were analyzed.

**Results** 282 colorectal polypectomies were performed for 223 patients with an average age of 62.28 years [33-86] and male to female ratio of 2.37. A single polyp was detected in 174 patients (78%). The average size of polyps was 4.75mm [1 – 10mm]. Diminutive polyps were found in 50.2% of cases (n = 112). Polyps were mainly detected in the sigmoid colon (38.1%, n = 85). They were sessile in 79.4% (n = 177), pedunculated in 11.2% (n = 25) and flat in 9.4% of cases (n = 21). In the first group, 55 polyps (72.4%) were adenomatous polyps referring to histopathological evaluation. In the second group; 74 polyps (65.5%) were adenomatous and 31 (27.4%) were hyperplastic. The diagnosis of adenomas was less frequent in the group of diminutive polyps without a statistically significant difference (p=0.64).

**Conclusions** There is no meaningful statistical difference in risk of adenomas between diminutive and small polyps. The «DETECT and DISCARD » strategy must be reserved for expert endoscopists using high definition endoscopy allowing real-time polyp diagnosis.

## eP207 DETECTION OF COLONIC POLYPS IN INDIA – A LARGE RETROSPECTIVE COHORT STUDY (DOCPI-R)

**Authors** Jagtap N<sup>1</sup>, Inavolu P<sup>1</sup>, Singh A<sup>1</sup>, Godbole S<sup>1</sup>, Ambardekar P<sup>1</sup>, Lakhtakia S<sup>1</sup>, Ramchandani M<sup>1</sup>, Nabi Z<sup>1</sup>, Talukdar R<sup>1</sup>, Sekaran A<sup>2</sup>, Tandan M<sup>1</sup>, Kalapala R<sup>1</sup>, Gupta R<sup>1</sup>, Reddy PM<sup>1</sup>, Memon SF<sup>1</sup>, Rao GV<sup>3</sup>, Reddy DN<sup>1</sup>

**Institute** 1 Asian Institute of Gastroenterology, Medical Gastroenterology, Hyderabad, India; 2 Asian Institute of Gastroenterology, Pathology, Hyderabad, India; 3 Asian Institute of Gastroenterology, Surgical Gastroenterology, Hyderabad, India

DOI 10.1055/s-0041-1724703

**Citation:** Jagtap N, Inavolu P, Singh A et al. eP207 DETECTION OF COLONIC POLYPS IN INDIA – A LARGE RETROSPECTIVE COHORT STUDY (DOCPI-R). Endoscopy 2021; 53: S166.

**Aims** Colorectal cancer (CRC) is an emerging public health problem in Asia and India. However, there is scarcity of data on CRC and adenoma. We aimed to study prevalence and characteristics of colonic polyps in large retrospective cohort.

**Methods** For this retrospective single center study, all patients with age >18 years undergoing colonoscopy from January 2018 to December 2019 were included. Age, gender and polyp characteristics were collected from endoscopy and histology database. Patients with incomplete histology reports and anal canal polyps were excluded. Based on histology, polyps were divided into adenocarcinoma, adenoma with advanced pathology (AAP; size >10mm, villous morphology or high grade dysplasia), other adenomas and non-adenomas.

**Results** Overall colon polyp prevalence was 10.18% (3551/34893). The mean age (SD) was 51.51 (14.84) with 75.4% males. Of which, 128 (3.6%) were adenocarcinoma. 1514 (42.64%) were adenomas; 344 (9.7%) were AAP and 1170 (32.9%) were other adenomas. Remaining 1909 (53.8%) were non-adenomas. Colonic adenoma prevalence after excluding adenocarcinoma was 4.35% (1514/34893). Adenocarcinoma (68.8% vs 31.2%), AAP (70.6% vs 29.4%), other adenomas (75.4% vs 24.6%) and non-adenomas (76.7% vs 23.3%) were significantly higher in male compared to female (p <0.05). Adenomas and adenocarcinoma were more common in left colon and rectum than right colon (p <0.05). The mean age (SD) were significantly lower in non-adenomas than adenocarcinoma, AAP and other adenomas (p 0.0001; 49.25(14.84) vs 55.97 (12.47), 54.78 (16.40), 53.76 (13.71)).

**Conclusions** The prevalence of colonic adenoma in India is 4.35%. Male gender and increased age associated with increased risk of colonic adenoma and adenocarcinoma which is more common in left colon and rectum. Prospective multicenter studies are required for evaluation of other risk factors of CRC and colonic adenomas.

## eP208 POLYP AND ADENOMA DETECTION RATE IN THE REAL LIFE, PRELIMINARY RESULTS

**Authors** Abu Freha N<sup>1</sup>, Abu Tailakh M<sup>2</sup>, Abu-Freha O<sup>3</sup>, Estis-Deaton A<sup>4</sup>, Elkrinawi J<sup>1</sup>, Alamour O<sup>5</sup>, Etzion O<sup>1</sup>

**Institute** 1 Ben Gurion University of the Negev, The Institute of Gastroenterology and Hepatology, Soroka University Medical Center, Beer Sheva, Israel; 2 Ben Gurion University of the Negev, Recanati School for Community Health Professions, Department of Nursing, Faculty of Health Sciences, Beer Sheva, Israel; 3 Soroka University Medical Center, Beer Sheva, Israel; 4 Soroka University Medical Center, Division of Internal Medicine, Beer Sheva, Israel; 5 Soroka University Medical Center, Department of Emergency Medicine, Beer Sheva, Israel

DOI 10.1055/s-0041-1724704

**Citation:** Abu Freha N, Abu Tailakh M, Abu-Freha O et al. eP208 POLYP AND ADENOMA DETECTION RATE IN THE REAL LIFE, PRELIMINARY RESULTS. Endoscopy 2021; 53: S166.

**AAims** Fecal blood testing is the modality for colorectal cancer screening adopted in Israel, only part of colonoscopies are done for screening. Our purpose was to determine the polyp detection rate (PDR) and adenoma detection rate (ADR) in the real-life practice.

**Methods** Retrospective study included all consecutive colonoscopies in a single center in southern Israel in 2019. Colonoscopy and pathology reports were reviewed for demographic, clinical and endoscopic finding in all included colonoscopies.

**Results** We included 1,145 patients, underwent 1293 colonoscopies. Mean age 59±14.1, 567 (49.5%) male, 113 (11.6%) Bedouin patients. The most common indication for colonoscopy were: positive fecal occult blood test 205 (17.9%), post polypectomy surveillance 159 (13.9%), family history of colorectal cancer 139 (12.1%) abdominal pain 132 (11.5%), anemia 87 (7.6%) and rectal bleeding 80 (7%). The main findings in the colonoscopies included in our preliminary results are: normal colonoscopy 451 (34.8%), polyp of colon 448 (34.6%), colorectal cancer 22 (1.7%), diverticulosis 106 (8.2%), hemorrhoid 266 (20.6%) and poor preparation 158 (12.2%). Polyps were found in 448 (39.5%) of the 1135 colonoscopies (after exclusion of colonoscopies with poor preparation) and in 363 (32%) colonoscopies adenoma were detected. 114 (25.4%) of the polyps were ≥10 mm and 302 (67.4%) were tubular adenoma with low grade dysplasia. The advanced adenoma rate was 130 (11.4%) of the included colonoscopies.

**Conclusions** Polyp detection rate of 39.5% and adenoma detection rate of 32% were found in the real-life setting

### eP209 EFFECT OF THE APPLICATION OF DIFFERENT HIGH-DEFINITION (HD) COLONOSCOPY SYSTEMS COMBINED WITH VIRTUAL CHROMOENDOSCOPY ON THE ADENOMA DETECTION RATE – A NON-INFERIORITY PILOT STUDY

**Authors** Lovasz BD<sup>1</sup>, Finta A<sup>2</sup>, Szalai M<sup>2</sup>, Oczella L<sup>2</sup>, Madacsy L<sup>2</sup>  
**Institute** 1 Semmelweis University, Department of Applied Health Sciences, Budapest, Hungary; 2 Endo-Kapszula, Endoscopy Unit, Szekesfehervar, Hungary  
 DOI 10.1055/s-0041-1724705

**Citation:** Lovasz BD, Finta A, Szalai M et al. eP209 EFFECT OF THE APPLICATION OF DIFFERENT HIGH-DEFINITION (HD) COLONOSCOPY SYSTEMS COMBINED WITH VIRTUAL CHROMOENDOSCOPY ON THE ADENOMA DETECTION RATE – A NON-INFERIORITY PILOT STUDY. *Endoscopy* 2021; 53: S167.

**Aims** We aimed to evaluate adenoma detection rate (ADR) in consecutive patients investigated with the HD colonoscopy system of AOHUA and to compare the results to our previous colonoscopy series performed with HD FUJIFILM colonoscopy system.

**Methods** We analyzed consecutive colonoscopy results with AOHUA-AQ200 system (polyp detection was supported with Hemoglobin Enhancement and polyp delineation with Compound Band Imaging) between March 2020 and October 2020 and FUJIFILM-7000 Eluxeo endoscopy system (polyp detection was supported with Linked Colour Imaging and polyp delineation with Blue Light Imaging) between October 2016 and June 2018, performed by the same three expert endoscopists in our Endoscopy Unit. Results in ADR was compared by the Chi-square test, and the predictors of ADR were estimated using logistic regression test with sex, age as independent variables.

**Results** Total 265 colonoscopies (132 male (49.8%); mean age: 52.6 years, SD: 14 years) were performed using AOHUA, and 1620 colonoscopies were performed with FUJIFILM (842 male (52%); mean age: 51.7 years, SD: 13.6 years) during the study period. Using AOHUA, overall ADR was 26.4% (70/265), above 40 year-olds was 30.8% (68/221) and 33.3% (53/159) above 50 year-olds. Overall ADR with FUJI system was 30.7% (497/1620). ADR above 40 year-olds was 35.6% (465/1306) and 40.8% (370/906) above 50 year-olds. Comparing the results with different colonoscope technologies but the same operators, we demonstrated no significant difference between ADR (OR 0.86; 95%CI 0.66-1.17; p=0.39). Sex and age were independent predictors of ADR. In the adjusted model, male sex and age also increased the odds of ADR but did not alter the difference (OR 0.84, p = 0.24).

**Conclusions** Our results with the HD colonoscopy system by AOHUA combined with virtual chromoendoscopy proved to be non-inferior in ADR comparing to HD FUJIFILM system. Further prospective randomized studies are required to confirm our results.

### eP210 FULL THICKNESS RESECTION OF COLORECTAL LESIONS. PROMISING RESULTS FROM AN OBSERVATIONAL STUDY IN A SPANISH TERTIARY CENTER

**Authors** Martínez Barco A<sup>1</sup>, Santiago García J<sup>1</sup>, De Frutos Rosa D<sup>1</sup>, González Lois C<sup>2</sup>, Herreros de Tejada A<sup>1</sup>  
**Institute** 1 Puerta de Hierro University Hospital, Autonomous University of Madrid, Gastroenterology, Madrid, Spain; 2 Puerta de Hierro University Hospital, Autonomous University of Madrid, Pathology, Madrid, Spain  
 DOI 10.1055/s-0041-1724706

**Citation:** Martínez Barco A, Santiago García J, De Frutos Rosa D et al. eP210 FULL THICKNESS RESECTION OF COLORECTAL LESIONS. PROMISING RESULTS FROM AN OBSERVATIONAL STUDY IN A SPANISH TERTIARY CENTER. *Endoscopy* 2021; 53: S167.

**Aims** Endoscopic full thickness resection (EFTR) with Full thickness resection device (FTRD) allows endoscopic removal of difficult-to-resect colorectal lesions with a simultaneous closure of the wall, minimizing the risk of perforation and allowing “en bloc” resection. In this prospective observational study we aim to analyse the efficacy and safety of EFTR with FTRD in a large tertiary Spanish center.

**Methods** Prospective observational study from 2016 to 2019 including 21 patients with a mean age of 62.9 years. Indications for EFTR were severe fibrosis, difficult location, suspected T1 carcinoma and subepithelial tumor; all of them less than 35mm. Primary endpoints were technical success, R0 resection and adverse events.

**Results** Technical success was achieved in 95% and R0 resection in 80.9% of the cases. We also included a large lesion successfully removed using a hybrid-EFTR. No major intraprocedural adverse events were registered. Only 3 patients (14.3%) had to undergo programmed surgery, including 1 case of technical failure and 2 cases of pT1 adenocarcinoma with high risk features. Regarding delayed adverse events, 2 cases (9.5%) of acute appendicitis were observed 48 hours after appendiceal EFTR and required urgent appendectomy. Endoscopic follow-up with a mean of 14.7 months was performed showing no macro or microscopic recurrence after successful EFTR.

**Conclusions** EFTR is an effective and safe alternative to surgery for difficult to resect colorectal lesions. In the subgroup analysis, fibrosis was not associated with lower R0 rate or higher risk of adverse events. Appendiceal EFTR might associate with an increased risk of AA, and the role of prophylactic antibiotics requires further research.

► Tab. 1

Technical success n, N %	20/21 (95.2%)
R0 resection n, N (%)	17/21 (80.9%)
Minor intraprocedural adverse events	2/21 (9.5%)
Delayed adverse events	2/21 (9.5%)
Follow-up, months, mean (SD)	14.7 (9.3)



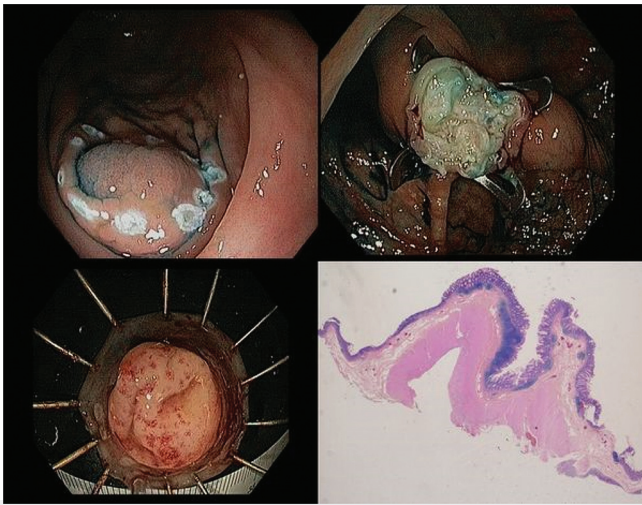


Fig.1

## eP211 EFFECTIVENESS, SAFETY AND CLINICAL OUTCOMES OF ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR LARGE COLORECTAL POLYPS PERFORMED AT A DISTRICT GENERAL HOSPITAL

Authors [Shiha MG<sup>1</sup>](#), [Thomas T<sup>1</sup>](#)

Institute [1 Northampton General Hospital, Department of Gastroenterology, Northampton, United Kingdom](#)

DOI [10.1055/s-0041-1724707](#)

Citation: Shiha MG, Thomas T. eP211 EFFECTIVENESS, SAFETY AND CLINICAL OUTCOMES OF ENDOSCOPIC MUCOSAL RESECTION (EMR) FOR LARGE COLORECTAL POLYPS PERFORMED AT A DISTRICT GENERAL HOSPITAL. *Endoscopy* 2021; 53: S168.

**Aims** Endoscopic mucosal resection (EMR) is an effective and safe alternative to surgery in resecting large colorectal polyps. However, the procedure is technically challenging and often requires referral to specialist centres. We aimed to assess the effectiveness, safety and clinical outcomes of colorectal EMR procedures performed at a United Kingdom-based district general hospital.

**Methods** We prospectively collected data of all EMR procedures performed at Northampton general hospital between February 2011 and August 2019. Demographics, procedural data and histology reports were reviewed. All patients with lesions smaller than 20 mm were excluded.

**Results** We included 85 patients who underwent 87 colorectal EMR during the study period (50% females; median age 76, range 64 - 81 years). The median lesion size was 30 mm (range 20 - 40 mm) and 55/85 (65%) had Paris IIa morphology. Most lesions were located in the right colon (50.5%). Overall, 72/85 (85%) of patients were followed up, of whom 90% (n= 65) had complete clearance. Endoscopic clearance was achieved in 4/7 patients with recurrence. Only one patient with adenocarcinoma at index EMR was found to have residual tumour after surgical excision. Post-EMR histopathology showed tubulovillous adenoma (60%), sessile serrated adenoma (13%), Adenocarcinoma (8%), low grade dysplasia (7%), tubular adenoma (6%), hyperplastic polyp (3.5%) and high-grade dysplasia (2.5%). There was no procedure-related perforation or mortality. 5/85 (6%) of patients had major bleeding requiring overnight hospital admission. However, none of them required blood transfusion or surgery. Adverse events, including minor ones, were more likely to occur in the rectum compared to the right and left colon (p=0.02). In multivariate analysis, post-EMR recurrence was not related to the site and size of lesions nor the age and gender of patients.

**Conclusions** Colorectal EMR can be effectively and safely performed by trained endoscopists at district general hospitals with minimal complications and high clearance rates.

## eP212V PERISTALTIC CONTRACTIONS HELP SNARING DURING UNDERWATER EMR OF COLONIC NON-GRANULAR PSEUDODEPRESSED LST

Authors [Uchima H<sup>1,2</sup>](#), [Colán-Hernández J<sup>1</sup>](#), [Marín I<sup>1</sup>](#), [Temño R<sup>2</sup>](#), [Mata A<sup>2</sup>](#), [López R<sup>3</sup>](#), [Fumagalli C<sup>3</sup>](#), [Hernández A<sup>3</sup>](#), [Rosinach M<sup>2</sup>](#), [Ble M<sup>2</sup>](#), [Caballero N<sup>1</sup>](#), [Cañete F<sup>1</sup>](#), [Iborra I<sup>1</sup>](#), [Turro R<sup>2</sup>](#), [Michelena J<sup>2</sup>](#), [Turro J<sup>2</sup>](#), [Espinós J<sup>2</sup>](#), [Moreno V<sup>1</sup>](#), [Binmoeller K<sup>4</sup>](#)

Institute [1 Hospital Universitari Germans Trias i Pujol, Endoscopy Unit, Gastroenterology Department, Badalona, Spain;](#) [2 Centro Médico Teknon, Endoscopy, Barcelona, Spain;](#) [3 Hospital Universitari Germans Trias i Pujol, Pathology Department, Badalona, Spain;](#) [4 California Pacific Medical Center, Interventional Endoscopy Services, San Francisco, United States](#)

DOI [10.1055/s-0041-1724708](#)

Citation: Uchima H, Colán-Hernández J, Marín I et al. eP212V PERISTALTIC CONTRACTIONS HELP SNARING DURING UNDERWATER EMR OF COLONIC NON-GRANULAR PSEUDODEPRESSED LST. *Endoscopy* 2021; 53: S168.

En bloc resection of LST-NG pseudodepressed type is mandatory due to a high-risk of submucosal invasion. Sometimes it might be difficult to snare these lesions. During Underwater EMR (UEMR) the colonic lesion “floats” in a lumen filled with fluid and muscularis propria retains a circular configuration and does not follow involutions of the mucosa and submucosa even during peristaltic contractions.

We present 2 cases of 0-IIa+IIc LST-NG resected by UEMR during peristaltic contraction, allowing en bloc resection due to infolding of the lesions.

UEMR during peristaltic contraction may be helpful for en bloc resection of 2cm non-granular LST.

## eP213 IS THERE PLACE FOR AN EXCLUSIVE ENDOSCOPIC RESECTION OF HIGH-RISK MALIGNANT COLORECTAL POLYPS?

Authors [João M<sup>1</sup>](#), [Alves S<sup>1</sup>](#), [Saraiva S<sup>1</sup>](#), [Areia M<sup>1</sup>](#), [Taveira F<sup>1</sup>](#), [Elvas L<sup>1</sup>](#), [Brito D<sup>1</sup>](#), [Cadime AT<sup>1</sup>](#)

Institute [1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal](#)

DOI [10.1055/s-0041-1724709](#)

Citation: João M, Alves S, Saraiva S et al. eP213 IS THERE PLACE FOR AN EXCLUSIVE ENDOSCOPIC RESECTION OF HIGH-RISK MALIGNANT COLORECTAL POLYPS?. *Endoscopy* 2021; 53: S168.

**Aims** Endoscopically resected malignant colorectal polyps (pT1) have a significant risk of residual cancer in the bowel wall and nodal metastasis that depends on non-uniform histological features. We aimed to evaluate the frequency of unfavourable features in pT1 endoscopically resected and their correlation with residual cancer in the bowel wall and/or lymph nodes involvement.

**Methods** Single centre prospective cohort study including high-risk pT1 endoscopically resected between 2013 and 2019. pT1 polyps were classified as high-risk if they had any of the following: poor differentiation; piecemeal resection; Haggitt 4 for pedunculated polyps and Kikuchi 2/3 for non-pedunculated polyps; lymphovascular invasion; tumour budding grades 2/3 or resection margins not assessed or <1mm. High-risk pT1 were submitted to adjuvant surgery, unless contraindication or patient refusal.

**Results** Included 93 patients, 67% (n=62) males with a median age of 66 (58-74) years old. The median size of lesions was 15 (11-24) mm, 50% (n=46) were located at the sigmoid. Piecemeal resection was performed in 23% (n=21), tumour budding grades 2/3 was present in 40% (n=37), resection margins non-assessed or <1mm in 42% (n=39), lymphovascular invasion in 10% (n=9), poor differentiation in 6% (n=6), Haggitt 4 in 3.2% (n=3) and Kikuchi 2/3 in 20.4% (n=19). Additional surgery was performed in 53 patients; of those, 72% (38/53) had no bowel wall residual cancer or nodal involvement. Lesions with residual cancer in the bowel wall and/or lymph nodes involvement had more unfavourable features (3 vs. 2, p<0.01). In multivariate analysis, only lymphovascular invasion (OR: 16; 95%CI: 1.5-176) and Haggitt 4 (OR: 1.01; 9%CI: 1.0-1.02) were associated with residual cancer and/or lymph nodes involvement.

**Conclusions** In our cohort, in high-risk pT1 with just two unfavourable features but not including lymphovascular invasion or Haggitt 4, additional surgery could be dispensable. Further research is needed to enable better treatment decisions.

## eP214V CHALLENGES IN THE ENDOSCOPIC MANAGEMENT OF A DELAYED COLONIC PERFORATION AFTER POLYPECTOMY

**Authors** Macedo C<sup>1</sup>, Gravito-Soares E<sup>1,2</sup>, Gravito-Soares M<sup>1,2</sup>, Amaro P<sup>1</sup>, Narra Figueiredo P<sup>1,2</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal; 2 University of Coimbra, Faculty of Medicine, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724710

**Citation:** Macedo C, Gravito-Soares E, Gravito-Soares M et al. eP214V CHALLENGES IN THE ENDOSCOPIC MANAGEMENT OF A DELAYED COLONIC PERFORATION AFTER POLYPECTOMY. *Endoscopy* 2021; 53: S169.

A 63-year-old woman underwent screening colonoscopy with diathermic snare polypectomy of a 25mm sigmoid's pedunculated polyp featuring deep mural injury without perforation. 10hours later, she presented with abdominal pain and fever. Abdominal-CT showed contained colonic perforation without free pneumoperitoneum or peritoneal effusion. After multidisciplinary discussion, endoscopic closure using OTSC (Ovesco,Germany) was performed 14hours after presentation. 2weeks later abdominal pain recurred due to a 7cm peri-sigmoid collection related to partial OTSC dehiscence. After lavage, complete closure was performed using a modified tulip-bundle technique joining the previously placed OTSC with additional TTS-endoclips tighten by an endoloop. Uneventful recovery was finally achieved.

## eP215 COLORECTAL POST-POLYPECTOMY SYNDROME – 15-YEAR EXPERIENCE OF A TERTIARY REFERRAL CENTER

**Authors** Costa M<sup>1</sup>, Perdigoto D<sup>1</sup>, Barreto L<sup>1</sup>, Cunha I<sup>1</sup>, Gravito-Soares E<sup>1</sup>, Amaro P<sup>1</sup>, Figueiredo P<sup>1,2</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal; 2 Faculdade de Medicina da Universidade de Coimbra, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724711

**Citation:** Costa M, Perdigoto D, Barreto L et al. eP215 COLORECTAL POST-POLYPECTOMY SYNDROME – 15-YEAR EXPERIENCE OF A TERTIARY REFERRAL CENTER. *Endoscopy* 2021; 53: S169.

**Aims** Post-polypectomy syndrome (PPS) is an uncommon complication of colonoscopic polypectomy using eletrocoagulation. It is defined as persistent abdominal pain post-intervention without free intestinal perforation. Little is known about risk factors. The aim of this study was to characterize the syndrome in a Portuguese tertiary referral center.

**Methods** Retrospective study that included all the patients admitted to our Gastroenterology ward due to PPS from 08/2006 to 10/2020.

**Results** We identified 35 patients, 21 (60%) men, median age of 65 years. The patients were hospitalized for a median of 5 days (IQR 4) and 20 (57.1%) developed abdominal pain within 6 hours after the procedure. At admission, 17 (48.6%) had fever. The mean leukocyte count was 13.51±4.36 x10<sup>9</sup>/L and median C-reactive protein (CRP) was 7 mg/dL (N<0.5mg/dL). All patients were discharged after clinical improvement, none needed surgery. The polypectomy was done in-hospital in 29 (82.9%). The median lesion size was 20 mm and 32 (91.4%) were >10 mm. Twenty-two (62.9%) had polypoid configuration (Paris 0-Ip and 0-Is). Fifteen (42.9%) were identified in the left colon. Submucosal injection was performed in 18(51.4%) Paris 0-Is/II lesions and 3(8.6%) 0-Ip lesions. Considering the histopathology, 16 (45.7%) lesions were adenomas with low grade dysplasia and 12 (34.3%) high grade dysplasia/carcinoma. We found no correlation between longer hospitalization and age, lesion size, time from procedure to onset of pain, leukocyte count or CRP.

**Conclusions** Given the hot snare colorectal resections in our department and consequent cases of PPS from 2016 to 2019, the annual incidence of PPS varied from 0.09% to 2.1%, respectively and increasing progressively. The present study is limited by its retrospective design and small population. This condition shows an excellent prognosis. Endoscopists should be aware of this potential complication in the evaluation of post-diathermic resection abdominal pain, which can mimic colorectal perforation.

## eP216V CONIC CAP-SUCTION UEMR FOR EN BLOC RESECTION OF NON-GRANULAR PSEUDODEPRESSED COLONIC LESION: A NOVEL TECHNIQUE WHEN CONVENTIONAL SNARING IS NOT POSSIBLE

**Authors** Uchima H<sup>1</sup>, Colán-Hernández J<sup>1</sup>, Marín I<sup>1</sup>, López R<sup>2</sup>, Fumagalli C<sup>2</sup>, Hernández A<sup>2</sup>, Caballero N<sup>1</sup>, Iborra I<sup>1</sup>, González L<sup>1</sup>, Moreno V<sup>1</sup>

**Institute** 1 Hospital Universitari Germans Trias i Pujol, Endoscopy Unit, Gastroenterology Department, Badalona, Spain; 2 Hospital Universitari Germans Trias i Pujol, Pathology Department, Badalona, Spain

**DOI** 10.1055/s-0041-1724712

**Citation:** Uchima H, Colán-Hernández J, Marín I et al. eP216V CONIC CAP-SUCTION UEMR FOR EN BLOC RESECTION OF NON-GRANULAR PSEUDODEPRESSED COLONIC LESION: A NOVEL TECHNIQUE WHEN CONVENTIONAL SNARING IS NOT POSSIBLE. *Endoscopy* 2021; 53: S169.

Colorectal lesions with a depressed component are difficult to snare and have a high risk of submucosal invasion.

Underwater EMR (Binmoeller, 2012) allows endoscopic resection without previous submucosal injection as the colonic lesion “floats” in a lumen filled with water.

We present a case of a 16mm non-granular 0-Ila+IIc lesion located in the sigmoid colon. UEMR was tried but it was not possible to snare the lesion.

Thereafter, with the lumen filled with water, a conic cap was used to gently aspirate the 0-IIc component, facilitating the infolding of the lesion and it was easily snared and resected by UEMR.

## eP217 ENDOSCOPIC COMPLETE RESECTION OF A PROTRUDING GIANT SIGMOID LIPOMA: A CASE REPORT

**Authors** Elbayoumy MS<sup>1</sup>, Alsibai TMA<sup>2</sup>, Aboukamar WA<sup>3</sup>, Jaddoh AM<sup>1</sup>, Alruzug IM<sup>1</sup>

**Institute** 1 King Saud Medical City, Gastroenterology, Riyadh, Saudi Arabia; 2 Alfaisal University, Faculty of Medicine, Riyadh, Saudi Arabia; 3 Faculty of Medicine/Mansoura University, Medical Parasitology, Mansoura, Egypt

**DOI** 10.1055/s-0041-1724713

**Citation:** Elbayoumy MS, Alsibai TMA, Aboukamar WA et al. eP217 ENDOSCOPIC COMPLETE RESECTION OF A PROTRUDING GIANT SIGMOID LIPOMA: A CASE REPORT. *Endoscopy* 2021; 53: S169.

**Aims** To prove the efficacy and safety of colonoscopic resection and retrieval of giant colonic lipoma using an endoloop and snare cautery.

**Methods** We present a 36-year-old male with symptoms of abdominal pain, constipation, straining and rectal bleeding for two years, in addition to protruding rectal mass during defecation. On colonoscopy, the patient was found to have a giant submucosal mass in distal sigmoid colon almost at 20 cm from anal verge. The endoloop was tightened at the base of the mass before resection using a snare cautery, the resected mass measured approximately 8 x 5.5 cm.

**Results** The mass was completely resected from its pedicle with no complications, and histopathological examination confirmed diagnosis of lipoma. The patient was discharged home safely few hours after the procedure. Regarding follow up, two weeks later and over one year after the procedure, he reported a recovery of his symptoms, and CT abdomen showed no obvious colonic lesions.

**Conclusions** Colonoscopic resection using endoloop followed by a hot snare was considered safe definitive treatment in giant colonic lipoma.

## eP218V HYBRID ENDOSCOPIC MUCOSAL RESECTION COMBINING CONVENTIONAL MUCOSECTOMY AND FULL-THICKNESS RESECTION USING THE FTRD SYSTEM: TWO PRACTICAL APPLICATIONS OF DIFFICULT COLORECTAL LESIONS

**Authors** Macedo C<sup>1</sup>, Gravito-Soares E<sup>1,2</sup>, Gravito-Soares M<sup>1,2</sup>, Correia C<sup>1</sup>, Estorninho J<sup>1</sup>, Amaro P<sup>1</sup>, Narra Figueiredo P<sup>1,2</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal; 2 University of Coimbra, Faculty of Medicine, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724714

**Citation:** Macedo C, Gravito-Soares E, Gravito-Soares M et al. eP218V HYBRID ENDOSCOPIC MUCOSAL RESECTION COMBINING CONVENTIONAL MUCOSECTOMY AND FULL-THICKNESS RESECTION USING THE FTRD SYSTEM: TWO PRACTICAL APPLICATIONS OF DIFFICULT COLORECTAL LESIONS. *Endoscopy* 2021; 53: S170.

**Case 1** An 80-year-old man with multiple comorbidities underwent colonoscopy identifying a 30mm mixed granular-nodular LST in a region of multiple diverticula in sigmoid colon. Almost complete fragmented mucosectomy was performed, except a small pericentimetric area that involved a diverticular orifice. **Case 2** A 68-year-old man, diabetic, obese with liver transplantation underwent colonoscopy identifying a 40mm mixed granular-nodular LST in hepatic flexure that was submitted to incomplete fragmented mucosectomy due central area without elevation. Both residual lesions were resected combining full-thickness resection using the FTRD system without complications. This successful minimally invasive technique allows avoiding surgical morbidity in high-risk patients.

## eP219 THE EFFICACY OF ENDOCUFF VISION IN ENDOSCOPIC MUCOSAL RESECTION TO THE FULL EXTENT OF THE COLON - A FEASIBILITY CASE SERIES

**Authors** Nicolaou P<sup>1</sup>, Fragaki M<sup>1</sup>, Velegraki M<sup>1</sup>, Mpitouli A<sup>1</sup>, Psistakis A<sup>1</sup>, Paspatis G<sup>1</sup>

**Institute** 1 Venizeleio General Hospital, Department of Gastroenterology, Heraklion, Greece

**DOI** 10.1055/s-0041-1724715

**Citation:** Nicolaou P, Fragaki M, Velegraki M et al. eP219 THE EFFICACY OF ENDOCUFF VISION IN ENDOSCOPIC MUCOSAL RESECTION TO THE FULL EXTENT OF THE COLON - A FEASIBILITY CASE SERIES. *Endoscopy* 2021; 53: S170.

**Aims** There are limited data indicating that ENDOCUFF VISION™ is safe and useful to facilitate complex polypectomy in the sigmoid colon by retracting the colonic folds [1]. However, data concerning its safety and efficacy in cases of large sessile/flat polyps to the full extent of the colon and particularly in the right colon, are lacking.

**Methods** Ten patients (eleven polyps) were prospectively included in our study. At first, a conventional colonoscopy was performed. In cases where the achievement of stable access and visualization of the polyp was not adequate the colonoscope was withdrawn and an ENDOCUFF VISION™ was mounted on the tip of the colonoscope. Thereafter the mounted colonoscope was reinserted in the area of interested in the colon. The polypectomy was considered successful when the entire submucosal base and margins were clearly visible with no remaining polyp.

**Results** Ten patients (mean age 63.7 ± 12.03 years, 6 male/4 female) with 11 sessile/flat polyps were included into the study. Diverticulosis was seen in eight out of ten patients. Four of the polyps were located in the sigmoid colon, one in the rectum, three in the ascending colon, two in the hepatic flexure and one on

the ileocecal valve (mean size 27±1.33mm). Nine of the eleven polypectomies were considered successful (►Table 1). In two of them in the right colon the procedure was considered unsuccessful (remaining neoplastic tissue) and the patients underwent full thickness resection (FTRD). No difficulties were reported in the advancing of the mounted colonoscope with the ENDOCUFF VISION™ to the area of interest in the colon. No complications were recorded.

**Conclusions** Our data indicate that the ENDOCUFF VISION™ safely facilitates EMR to the full extent of the colon, in selected cases where stable access is not achieved.

►TABLE 1 POLYP CHARACTERISTICS

Polyp Location	Number of polyps	Polyp Size, Mm (mean ± SD)	Polyp Morphology (Paris Classification) (number of polyps)
Left colon	5	36±15.6	0-Is (1) 0-IIa+ Is (4)
Right colon	6	20±4.47	0-Isp(1)0-IIa (3) 0-IIa+ Is (2)

## eP220 PROPHYLACTIC HEMOCLIP PLACEMENT: IS IT REALLY NECESSARY?

**Authors** Kefi M<sup>1</sup>, Bouchabou B<sup>2</sup>, Laabidi S<sup>1</sup>, Ghribi M<sup>1</sup>, Ben Nejma H<sup>1</sup>, Bougassas W<sup>1</sup>, Ennaifer R<sup>1</sup>

**Institute** 1 Monji Slim Hospital, Hepatogastroenterology, Tunis, Tunisia; 2 Monji Slim Hospital, Hepatogastroenterology, tunis, Tunisia  
**DOI** 10.1055/s-0041-1724716

**Citation:** Kefi M, Bouchabou B, Laabidi S et al. eP220 PROPHYLACTIC HEMOCLIP PLACEMENT: IS IT REALLY NECESSARY? *Endoscopy* 2021; 53: S170.

**Aims** The aim of this study was to evaluate the effectiveness of prophylactic hemoclipping and identify the risk factors of delayed PPB.

**Methods** we conducted a retrospective study including patients with polyps 5 to 20 mm in size underwent cold snare polypectomy (CSP), cold snare endoscopic mucosal resection (CS-EMR) or endoscopic mucosal resection (EMR) from 2016 to 2020. The patients with prophylactic hemoclipping for delayed PPB prevention were included in the clipping group, and those without prophylactic hemoclipping were included in the non-clipping group. The incidence of delayed PPB was compared between the groups. This study excluded the per polypectomy bleeding.

**Results** A total of 54 patients were included aging from 22 to 80 year old, involving 76 polypectomies. Thirty five (46%) polyps were in the clipping group and 41 (53.9%) polyps were in the non-clipping group. Only one patient had presented a PPB. She was 71 years-old and was under oral anticoagulants. This patient polyp size was 7 mm and was sessile. There were no significant differences in the incidence of delayed PPB between two groups (p=0.23).

**Conclusions** Prophylactic use of modern hemoclip technology is generally recommended, particularly in patients at high risk that have undergone removal of large sessile polyps or if treated with anticoagulant drugs. In our study, polyps sized 5 to 20 mm, prophylactic hemoclip placement did not decrease the risk of delayed PPB. Determining the true cost-effectiveness of treatment, particularly for reducing risk for a relatively rare event, may require much more data than are currently available.

## eP221 EFFICACY AND SAFETY OF COLD SNARE POLYPECTOMY (CSP) OF INTERMEDIATE SIZED COLORECTAL POLYPS 10 - 15 MM - A PROSPECTIVE OBSERVATIONAL FEASIBILITY TRIAL (COLDSNAP-1)

**Authors** [Rechberger P<sup>1</sup>](#), [Ulrich JD<sup>1</sup>](#), [Abdelhafez M<sup>1</sup>](#), [von Figura G<sup>1</sup>](#), [Bachmann J<sup>2</sup>](#), [Poszler A<sup>1</sup>](#), [Wiessner J<sup>1</sup>](#), [Herner A<sup>1</sup>](#), [Lahmer T<sup>1</sup>](#), [Phillip V<sup>1</sup>](#), [Mayr U<sup>1</sup>](#), [Haller B<sup>3</sup>](#), [Jesinghaus M<sup>4</sup>](#), [Schmid RM<sup>1</sup>](#), [Schlag C<sup>1</sup>](#)

**Institute** 1 Klinikum rechts der Isar der Technischen Universität München, Klinik und Poliklinik für Innere Medizin II, München, Germany; 2 Klinikum rechts der Isar der Technischen Universität München, Klinik und Poliklinik für Chirurgie, München, Germany; 3 Klinikum rechts der Isar der Technischen Universität München, Institut für Medizinische Informatik, Statistik und Epidemiologie (IMedIS), München, Germany; 4 Technische Universität München, Institut für Allgemeine Pathologie und Pathologische Anatomie, München, Germany

**DOI** [10.1055/s-0041-1724717](#)

**Citation:** Rechberger P, Ulrich JD, Abdelhafez M et al. eP221 EFFICACY AND SAFETY OF COLD SNARE POLYPECTOMY (CSP) OF INTERMEDIATE SIZED COLORECTAL POLYPS 10 - 15 MM - A PROSPECTIVE OBSERVATIONAL FEASIBILITY TRIAL (COLDSNAP-1). *Endoscopy* 2021; 53: S171.

**Aims** Cold snare polypectomy (CSP) has been gaining interest in recent years and is already an integral part of guidelines for polyps <10mm in size. In contrast to hot snare polypectomy (HSP), CSP doesn't involve electrocautery and therefore shows less adverse events (AE) with comparable resection rates. However, little is known about histological resection rates of CSP for adenomas 10 - 15 mm. Therefore, this study evaluates the efficacy and safety of CSP for these adenomas.

**Methods** This ongoing prospective observational study investigates the feasibility and safety of CSP for adenomatous polyps and sessile serrated lesions (SSL) 10 - 15 mm. Suitable polyps are removed using a hybrid snare (SnareMaster Plus, Olympus). The primary outcome is the histological complete resection rate, determined by pathologically negative margins of the specimen and no residues adenomatous material obtained from four biopsies of the resection site. Secondary outcomes are en-bloc resection rate, failure of CSP with conversion to HSP and the incidence of adverse events.

**Results** A total of 40 polyps in 24 patients have been included. The mean polyp size was 12.1 mm, 75% (30/40) of these polyps were adenomas and 25% (10/40) were SSL. The histological complete resection rate by CSP was 83.3% (25/30). En-bloc resection could be achieved in 60% (18/30). Primary CSP failed with 10 (25%) polyps most likely due to large amount of tissue within the snare. These polyps were successfully removed after conversion to HSP with the same snare. Immediate bleeding occurred with 16 (53.3%) lesions, which were treated by hemoclips (2.13 clips on average). No other adverse events were observed.

**Conclusions** CSP seems to be efficient and safe in removing 10 - 15 mm colorectal polyps. A hybrid snare seems to be particularly advantageous for larger polyps as it allows immediate conversion to HSP if CSP might fail.

## eP222 EFFICACY AND SAFETY OF ENDOSCOPIC MUCOSAL RESECTION FOR DIFFICULT LESIONS: ARE RESULTS FROM LEADING GROUPS REPRODUCIBLE BY NON-LEADING GROUPS?

**Authors** [Muñoz Gonzalez R<sup>1</sup>](#), [Escobar Ortiz J<sup>2</sup>](#), [Fernandez Velado E<sup>1</sup>](#), [Prieto Aparicio J<sup>1</sup>](#), [Santander C<sup>1</sup>](#), [Miranda Garcia P<sup>1</sup>](#)

**Institute** 1 Hospital Universitario La Princesa, Gastroenterology Department, Madrid, Spain; 2 Universidad Autónoma Madrid, Madrid, Spain

**DOI** [10.1055/s-0041-1724718](#)

**Citation:** Muñoz Gonzalez R, Escobar Ortiz J, Fernandez Velado E et al. eP222 EFFICACY AND SAFETY OF ENDOSCOPIC MUCOSAL RESECTION FOR DIFFICULT LESIONS: ARE RESULTS FROM LEADING GROUPS REPRODUCIBLE BY NON-LEADING GROUPS? *Endoscopy* 2021; 53: S171.

**Aims** High Size Morphology Site Access (SMSA) score has been associated with more adverse events (AE), incomplete resection and recurrence by leading groups<sup>1</sup>. Our aim was to assess the efficacy and safety of EMR for lesions with high SMSA scores and compare our results with those reported by a leading group.

**Methods** Observational, retrospective study. We included lesions with SMSA score  $\geq 10$  points (level  $\geq 3$ ) referred to an expert endoscopist because they were judged technically complex resections. Lesions and resection characteristics and AE were collected. Follow-up was performed within 6 months. We compared our results with the results of the Sidney group for levels SMSA 3 and 4<sup>1</sup>.

**Results** We included 80 lesions. The median lesion size was 30 mm (range 20-70, IQR = 14). 91% were Lateral Spreading Tumors, more frequently no granular flat elevated type (30%). They were mostly located in the right colon (60%), 39% with difficult maneuverability. There were none incomplete resections. Overall, 85% were piecemeal resections. 12.5% of patients were receiving antithrombotic therapy and 25% anticoagulants. Histological analysis revealed adenomatous lesions in 79%, adenocarcinoma in 16% and sessile serrated lesion in 5%. Two patients had deep submucosal invasion. Post-EMR bleeding occurred in 7%. Perforation requiring surgery appeared in 2.5%, and post-polypectomy syndrome in <1%. During follow-up (N = 49), 22% of patients had recurrence, mostly treated endoscopically (91%). Our efficacy was similar to that described by the Sidney group: recurrence 22% vs. 9-23% for SMSA 3 and 4, respectively. However, our rates of AE were slightly higher: bleeding 7% vs. 4-7% for SMSA 3 and 4, respectively; perforation (2% vs. 0.4-0.6% for SMSA 3 and 4, respectively).

**Conclusions** EMR for difficult lesions was as effective as described by leading groups in a non-leading group. However, the rates of AE, especially perforation, were slightly higher. 1. Sidhu. *Endoscopy*. 2018Jul;50(7):684-692.

## eP223 UNDERWATER VERSUS CONVENTIONAL ENDOSCOPIC MUCOSAL RESECTION FOR TREATING COLORECTAL POLYPS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED STUDIES

**Authors** [Tziatzios G<sup>1</sup>](#), [Gkolfakis P<sup>2</sup>](#), [Triantafyllou K<sup>1</sup>](#), [Fuccio L<sup>3</sup>](#), [Facciorusso A<sup>4</sup>](#), [Papanikolaou IS<sup>1</sup>](#), [Antonelli G<sup>5</sup>](#), [Nagl S<sup>6</sup>](#), [Ebigbo A<sup>6</sup>](#), [Probst A<sup>6</sup>](#), [Hassan C<sup>5</sup>](#), [Pellise M<sup>7</sup>](#), [Messmann H<sup>6</sup>](#)

**Institute** 1 Propaedeutic, Medical School, National and Kapodistrian University of Athens, "Attikon" University General Hospital, Hepatogastroenterology Unit, Second Department of Internal Medicine, Athens, Greece; 2 Erasme University Hospital, Université Libre de Bruxelles, Department of Gastroenterology Hepatopancreatology and Digestive Oncology, Brussels, Belgium; 3 S. Orsola-Malpighi Hospital, Gastroenterology Unit, Department of Medical and Surgical Sciences, Bologna, Italy; 4 University of Foggia, Gastroenterology Unit, Department of Surgical and Medical Sciences, Foggia, Italy; 5 Nuovo Regina Margherita Hospital, Gastroenterology Unit, Rome, Italy; 6 University Hospital Augsburg, Department of Gastroenterology, Augsburg, Germany; 7 Hospital Clínic de Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBEREHD), Gastroenterology Department, Barcelona, Spain

**DOI** [10.1055/s-0041-1724719](#)

**Citation:** Tziatzios G, Gkolfakis P, Triantafyllou K et al. eP223 UNDERWATER VERSUS CONVENTIONAL ENDOSCOPIC MUCOSAL RESECTION FOR TREATING COLORECTAL POLYPS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED STUDIES. *Endoscopy* 2021; 53: S171.

**Aims** Previous meta-analysis including nonrandomized studies showed marginal benefit of underwater endoscopic mucosal resection (U-EMR) compared to conventional EMR (C-EMR) in terms of polypectomy outcomes. We evaluated the effectiveness and safety of U-EMR compared to C-EMR in the treatment of colorectal polyps by including only randomized controlled trials (RCTs).



**Methods** PubMed and Cochrane Library databases were searched for RCTs published until 10/2020, evaluating U-EMR vs. C-EMR in terms of *en bloc* resection, complete resection, post-endoscopic resection adenoma recurrence, adverse events rates and difference in resection time. Abstracts from Digestive Disease Week, United European Gastroenterology Week and ESGE Days meetings were also searched. The effect size on study outcomes is presented as the risk ratio (RR; 95 % confidence interval [CI]) or mean difference (MD; 95 %CI). Heterogeneity was quantified using the  $I^2$  test. We also assessed the strength of evidence using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach.

**Results** Six RCTs analyzing outcomes from 1501 colorectal polyps (U-EMR, 769; C-EMR, 732) were included. U-EMR was associated with significant increase rate of *en bloc* resection compared to C-EMR [RR (95 %CI): 1.20 (1.01-1.44);  $I^2=87\%$ , GRADE: Low], with subgroup analysis showing that U-EMR is particularly beneficial when treating polyps sized  $\geq 20$ mm compared to polyps  $< 20$ mm [RR (95 % CI): 1.64 (1.22-2.20);  $I^2=23\%$  versus 1.05 (0.96-1.16);  $I^2=69\%$ ]. In contrast, no statistically significant difference between U-EMR and C-EMR regarding complete resection [RR (95 %CI): 1.07 (0.92-1.25);  $I^2=89\%$ , GRADE: Low], post-resection recurrence [RR (95 %CI): 0.58 (0.34-1.00);  $I^2=0\%$ , GRADE: Low] and adverse events [RR (95 %CI): 0.97 (0.69-1.37);  $I^2=0\%$ , GRADE: Low] was evident.

**Conclusions** Meta-analysis of RCTs supports that underwater endoscopic mucosal resection leads to higher rate of *en bloc* resection compared to conventional EMR. This effect is driven by the significant difference of the two techniques when treating large ( $\geq 20$ mm) polyps.

## eP224 MULTIMODAL USE OF ADVANCED ENDOSCOPIC RESECTION TECHNIQUES FOR LOCAL RECURRENT COLORECTAL ADENOMAS: A SINGLE CENTER PROSPECTIVE STUDY

**Authors** Ghersi S<sup>1</sup>, Gazzola A<sup>1</sup>, Apolito P<sup>1</sup>, Landi S<sup>1</sup>, La Marca M<sup>1</sup>, Bassi M<sup>1</sup>, Dabizzi E<sup>1</sup>, Larocca A<sup>1</sup>, Cennamo V<sup>1</sup>

**Institute** 1 Maggiore Hospital, Ausl Bologna, Gastrointestinal and Interventional Endoscopy Unit, Bologna, Italy

**DOI** 10.1055/s-0041-1724720

**Citation:** Ghersi S, Gazzola A, Apolito P et al. eP224 MULTIMODAL USE OF ADVANCED ENDOSCOPIC RESECTION TECHNIQUES FOR LOCAL RECURRENT COLORECTAL ADENOMAS: A SINGLE CENTER PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S172.

**Aims** Local recurrence occurs in up to 20 % of piecemeal endoscopic mucosal resection (EMR) and re-treatment can be technically challenging. Advanced endoscopic techniques, such as endoscopic submucosal dissection (ESD) and endoscopic full thickness resection (EFTR), alone or combined, allow deep *en bloc* large lesion removal, thus potentially achieving oncological radicality. Our study aims to assess efficacy and safety of ESD, EFTR and hybrid techniques (ESD+EFTR; ESD+EMR) for the treatment of recurrent polyps.

**Methods** Fourteen patients with 14 lesions who received endoscopic treatment for local recurrence after endoscopic resection for colorectal epithelial neoplasms between April 2017 and April 2019 were enrolled. Patients with colon cancer predisposition syndromes, colorectal carcinoma, lesion with deep submucosal invasion ( $>1000$   $\mu$ m), inflammatory bowel disease, coagulopathy and confirmed pregnancy state were excluded. Treatment methods, treatment outcomes, and recurrence rate were evaluated for each recurrent lesion.

**Results** One patient was excluded from the analysis, because recurrence was not confirmed at pathology, and 13 patients were considered for efficacy analysis (M/F 6/7, median age 75yrs [IQR 69-81]). Recurrent adenomas had a mean size of 19.2mm [range 10-40], being mostly located in the rectum (85%). On histological examination ten lesions presented tubulovillous architecture, three of which with high grade dysplasia, and three were tubular adenomas with low grade dysplasia. R0 resection rate for ESD, EFTR and hybrid techniques was respectively 100 %, 100 % and 67 %. No major early/late complications were observed. In a mean follow-up of 9.2 months [IQR 6-12], recurrence was observed in

only one case three months after hybrid ESD+EMR; FTR re-treatment was performed with negative endoscopic follow-up at 12 months.

**Conclusions** In our experience multimodal use of advanced endoscopic techniques, single or combined, represent safe and effective treatment options for locally recurrent adenomas.

► Tab. 1

	ESD(n=4)	EFTR(n=6)	Hybrid techniques (EMR+ESD; EFTR+ESD) (n= 3)	Total procedures (n= 13)
En-bloc resection rate (%)	4 (100)	6 (100)	1 (33)	11 (85)
R0 resection rate (%)	4 (100)	6 (100)	2 (67)	12 (92)
Recurrence rate (%)	0	0	1 (33)	1 (8)
Major adverse event, n (%)	0	0	0	0

## eP225V SUCCESSFUL RADICAL ENDOSCOPIC RESECTION OF A RARE “OCTOPUS HEAD LIKE” SYMPTOMATIC GIANT LIPOMA OF THE SIGMOID COLON

**Authors** Di Mitri R<sup>1</sup>, Scimeca D<sup>1</sup>, Bonaccorso A<sup>1</sup>, Conte E<sup>1</sup>, Lo Mastro M<sup>1</sup>, Unti E<sup>2</sup>, Mocciano F<sup>1</sup>, Amata M<sup>1</sup>

**Institute** 1 ARNAS Civico - Di Cristina - Benfratelli Hospital, Gastroenterology and Endoscopy Unit, Palermo, Italy; 2 ARNAS Civico - Di Cristina - Benfratelli Hospital, Pathology Unit, Palermo, Italy

**DOI** 10.1055/s-0041-1724721

**Citation:** Di Mitri R, Scimeca D, Bonaccorso A et al. eP225V SUCCESSFUL RADICAL ENDOSCOPIC RESECTION OF A RARE “OCTOPUS HEAD LIKE” SYMPTOMATIC GIANT LIPOMA OF THE SIGMOID COLON. *Endoscopy* 2021; 53: S172.

A Nigerian 29-year-old-female was admitted for hematochezia and obstructive symptoms. CT-scan showed a sigmoid intussusception with huge hypodense mass of adipose density. Colonoscopy/EUS confirmed a semi-pedunculated ulcerated submucosal mass (third layer). The lesion was resected “*en-bloc*” with large diathermic snare, using high-voltage mixed Endocut to overcome the poor electrical conductivity of fat. A small solution in the cutting edge was closed positioning endoclips. Macroscopically, the piece appeared as a smooth lesion, 7x4cm, resembling the head of an octopus. Histology showed radical resection of giant lipoma with characteristic fatty cells S-100 protein positive in the submucosal layer. Clinical course was regular.

## eP226V UNDERWATER PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION (EMR) WITH HOT SNARE OF A GIANT SIGMOID POLYP

**Authors** Gonzalez-Gonzalez L<sup>1</sup>, Colan-Hernandez J<sup>1</sup>, Marín I<sup>1</sup>, Moreno V<sup>1</sup>, Caballero N<sup>1</sup>, Puig M<sup>1</sup>, Iborra I<sup>1</sup>, Troya J<sup>1</sup>, Uchima H<sup>1</sup>

**Institute** 1 Hospital Universitari Germans Trias i Pujol, Endoscopy Unit, Gastroenterology Department, Badalona, Spain

DOI 10.1055/s-0041-1724722

**Citation:** Gonzalez-Gonzalez L, Colan-Hernandez J, Marín I et al. eP226V UNDERWATER PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION (EMR) WITH HOT SNARE OF A GIANT SIGMOID POLYP. *Endoscopy* 2021; 53: S172.

We present an 84-year-old male where a CT scan was performed for constipation study. The CT-scan showed a giant lobulated sigmoid lesion and an appendicular adenocarcinoma. In the colonoscopy we saw a giant sigmoid polyp that obstructed the intestinal lumen and was located between two angulations, but there were no endoscopic signs of deep invasion. We performed a piecemeal underwater EMR with hot snare to avoid a subtotal colectomy. The anatomopathological study showed a tubulo-villous adenoma with high and low-grade dysplasia with foci of intramucosal adenocarcinoma (pTis). Given the patient's comorbidities it was decided to do only endoscopic follow-up

## eP227 RISK FACTORS FOR COLORECTAL POSTPOLYPECTOMY AND EMR BLEEDING: A PROSPECTIVE COHORT STUDY

**Authors** Harel G<sup>1</sup>, Genthner A<sup>2</sup>, Straulino F<sup>2</sup>, Kangalli S<sup>2</sup>, Reiffenstein J<sup>2</sup>, Tscherwinski N<sup>2</sup>, Eickhoff A<sup>2</sup>

**Institute** 1 Klinikum Hanau, Medical Department II, Hessen -Hanau, Germany; 2 Klinikum Hanau, Medical Department II, Hanau, Germany

DOI 10.1055/s-0041-1724723

**Citation:** Harel G, Genthner A, Straulino F et al. eP227 RISK FACTORS FOR COLORECTAL POSTPOLYPECTOMY AND EMR BLEEDING: A PROSPECTIVE COHORT STUDY. *Endoscopy* 2021; 53: S173.

**Aims** Endoscopic polypectomy is at the forefront of colorectal cancer (CRC) prevention. However, endoscopic polypectomy is not completely free of complications, with bleeding being one of the most common complications encountered. Addressing the issue of colonoscopic complications, and post-polypectomy bleeding (PPB) in particular is becoming more important. Despite the fact that the overall incidence of PPB is low, predisposing factors need to be elucidated to further decrease the frequency of this complication. Furthermore, the role of various techniques of PPB prophylaxis remains controversial.

**Methods** We performed a prospective endoscopic observational trial focusing in the rate of acute and delayed postinterventional bleeding after endoscopic resection of colorectal adenomatous lesions. Enrollment of patients was from 01.01.2015 until 30.06.2020. Patient-related, polyp/lesion-related and procedure-related factors were evaluated for PPB.

**Results** Overall, 480pts. (222 female/258 male) were included and analyzed. Median age was 70 +/-11.6 years. Location of lesions are as follows: right hemocolon 46%, transverse 16%, left hemocolon 27%, rectum 11%. Mean size of the lesion was 19 +/-12.8mm. Anticoagulation therapy was taken by 15% of cases. Endoscopic resection technique was en-bloc snare polypectomy 58%, piece meal EMR 29%, ESD 12% and FTRD 1%. Bleeding occurred in 55/480 (12%) of cases, severe bleeding in 2%. Hemostatic therapy comprises injection 50/55, Clipping 45/55, Hot-biopsy 15/55, APC 18/55 and combination of therapy. Anticoagulation/antiplatelet therapy, right-sided location and piece-meal EMR were strong risk factors for PPB (OR 2.58). Transfusion was required in 16/55 of pts.

**Conclusions** Lesion size, right-hemocolon location and anticoagulation therapy were identified as strong risk factors for PPB. Technical related-factors like type of HF-current, type of snare as well as type and volume of submucosal cushioning may also interfere and influence PPB but this has to be studied in detail in further studies.

## eP228 POSTPOLYPECTOMY SYNDROME - AN UNDERRATED COMPLICATION AFTER ENDOSCOPIC POLYPECTOMY? WHICH RISK FACTORS LEAD TO A POSTPOLYPECTOMY SYNDROME?

**Authors** Leventi E<sup>1</sup>, Genthner A<sup>1</sup>, Straulino F<sup>1</sup>, Kangalli S<sup>1</sup>, Reiffenstein I<sup>1</sup>, Tscherwinski N<sup>1</sup>, Eickhoff A<sup>1</sup>

**Institute** 1 Klinikum Hanau, Medical Department II, Hanau, Germany

DOI 10.1055/s-0041-1724724

**Citation:** Leventi E, Genthner A, Straulino F et al. eP228 POSTPOLYPECTOMY SYNDROME - AN UNDERRATED COMPLICATION AFTER ENDOSCOPIC POLYPECTOMY? WHICH RISK FACTORS LEAD TO A POSTPOLYPECTOMY SYNDROME? *Endoscopy* 2021; 53: S173.

**Aims** The postpolypectomy syndrome is a serious complication after endoscopic polypectomy. We want to analyze the prevalence of a postpolypectomy syndrome and the risk factors associated with the development of postpolypectomy syndromes.

**Methods** We performed a statistical analysis from 01.01.2018 until 01.01.2020 with the help of the OPS- and ICD-codes as well as with the doctors' letters and documented the frequency and the possible risk factors like the size of the resected adenomas, the localization in the colon, the resection-type, gender and associated diseases.

**Results** Starting from 2018 until 2020 we have performed 2,337 screening colonoscopies. In 630 cases (27%) a polypectomy has been performed. 26 patients (1.1% of all colonoscopies and 4.1% of all polypectomies) developed a postpolypectomy syndrome and in 2 cases (0.08% of all colonoscopies and 0.3% of all polypectomies) a major perforation was documented. We reviewed the risk factors for the development of a postpolypectomy syndrome. Risk factors were female gender, size >2.5cm, growth pattern (sessile, flat), localization in the right hemocolon (especially in the cecum) and piece-meal resection. **Conclusions** A postpolypectomy syndrome is associated with a patient's discomfort, a longer hospital stay and with increased costs. Therefore, a prevention of a postpolypectomy syndrome carries great weight. A special caution should be exercised in female patients with large, flat and sessile polyps in the right hemocolon. If other factors like the injected solution or the needle size acts a part in the development of a PPS have to be proven in further studies.

## eP229 CLINICOPATHOLOGICAL FEATURES OF LATERALLY SPREADING TUMORS TREATED WITH ENDOSCOPIC MUCOSAL RESECTION

**Authors** Jankovic K<sup>1</sup>, Jovanovic I<sup>1,2</sup>

**Institute** 1 Clinic for Gastroenterology and Hepatology, Clinical Centre of Serbia, Belgrade, Serbia; 2 School of Medicine, University of Belgrade, Belgrade, Serbia

DOI 10.1055/s-0041-1724725

**Citation:** Jankovic K, Jovanovic I. eP229 CLINICOPATHOLOGICAL FEATURES OF LATERALLY SPREADING TUMORS TREATED WITH ENDOSCOPIC MUCOSAL RESECTION. *Endoscopy* 2021; 53: S173.

**Aims** Laterally spreading tumor (LST) is defined as superficial lesion at least 10 mm in diameter with lateral rather than vertical growth. They are usually underdiagnosed since they are flat making them unapparent and therefore these lesions harbor high risk for developing cancer. The study was aimed to describe the clinical and histopathological characteristics of laterally spreading tumor in our population. We also sought to measure residual lesion rates and efficacy and safety outcomes of endoscopic mucosal resection (EMR). In addition, the prevalence of synchronous colorectal lesions found in our study group was investigated.

**Methods** The study was designed as a retrospective analysis of a prospectively collected database of colonic LSTs endoscopically resected by an expert in our Clinic from October 2015-September 2020.

**Results** A total of 53 eligible patients were included for further analysis. The mean age of the enrolled was 67±10.55 years, 32 were man. A total of 53 LSTs were observed during endoscopy with a median size of 36.34 mm (range 10-70 mm), and 66% were granular type ("G" type). The most common histological finding was tubulovillous adenoma with low-grade dysplasia and adenocarcinoma was observed in 5.66% lesions. LSTs were most common in the rectum. Overall, 35% (19/53) of patients showed at least one synchronous lesion which were mostly observed in the sigmoid colon with an average size of 12 mm (range 5-15 mm) and tubular adenomas were the most frequent. Most bleeding was observed during the procedure or within the first 48 h. No perforation was observed. R0 resection rate was accomplished in 18% of cases.

**Conclusions** Laterally spreading tumors were most common in the rectum, and more often associated with invasive disease. EMR is safe but does not provide sufficient R0 resection rate.

## eP230V CLINICAL CASE: ESD IN RECTUM WITH THE TUNNEL FORMATION IN SUBMUCOSAL LAYER

Author [Vanyan A<sup>1</sup>](#)

Institute 1 North-West District Scientific Clinical Center named after L. G. Sokolov, Endoscopy, Saint-Petersburg, Russian Federation

DOI [10.1055/s-0041-1724726](#)

**Citation:** Vanyan A. et al. eP230V CLINICAL CASE: ESD IN RECTUM WITH THE TUNNEL FORMATION IN SUBMUCOSAL LAYER. *Endoscopy* 2021; 53: S174.

In 66-year-old patient in rectum detected lesion 3,0x2,0 cm, 0-Is+0-IIc (Paris classification), 2b (JNET classification). The lesion was removed by ESD with the tunnel formation. Postoperative diagnosis: adenocarcinoma pT1 (sm1-250 $\mu$ ), G1, ly0 v0, R0. Postoperative period without complications.

The location of the lesion parallel to the axis of the endoscope makes it convenient to form a tunnel during ESD in the rectum. Forming a tunnel in the submucosal layer allows you to simultaneously maintain the fixation of the lesion and the tension of the layer, which gives better visualization during the operation.

## eP231V ENDOSCOPIC RESECTION OF LESIONS INVADING COLONIC DIVERTICULAS IS FEASIBLE USING CLIP AND RUBBER BAND TRACTION

Authors [Pioche M<sup>1</sup>](#), [Wallenhorst T<sup>2</sup>](#), [Jacques J<sup>3</sup>](#), [Rivory J<sup>1</sup>](#)

Institute 1 Hospices Civils de Lyon, Gastro et Endoscopie Pavillon L, Lyon, France; 2 CHU Pontchaillou Rennes, Rennes, France; 3 CHU Limoges, Limoges, France

DOI [10.1055/s-0041-1724727](#)

**Citation:** Pioche M, Wallenhorst T, Jacques J et al. eP231V ENDOSCOPIC RESECTION OF LESIONS INVADING COLONIC DIVERTICULAS IS FEASIBLE USING CLIP AND RUBBER BAND TRACTION. *Endoscopy* 2021; 53: S174.

We present the case of a non granular LST involving a sigmoid diverticula deeply. Thanks to the clip and rubber band traction it was possible to remove all the diverticulum mucosa with a R0 en bloc resection of the lesion without adverse events.

## eP232 PREDICTIVE FACTORS FOR FEVER AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION IN COLORECTAL LESIONS

Authors [Frias Gomes C<sup>1</sup>](#), [Revés J<sup>1</sup>](#), [Morão B<sup>1</sup>](#), [Nascimento C<sup>1</sup>](#), [Cravo M<sup>1</sup>](#), [Ferreira A<sup>1</sup>](#)

Institute 1 Hospital Beatriz Ângelo, Loures, Portugal

DOI [10.1055/s-0041-1724728](#)

**Citation:** Frias Gomes C, Revés J, Morão B et al. eP232 PREDICTIVE FACTORS FOR FEVER AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION IN COLORECTAL LESIONS. *Endoscopy* 2021; 53: S174.

**Aims** Endoscopic submucosal dissection (ESD) is recommended for removal of colonic and rectal lesions with high suspicion of limited submucosal invasion. Fever is one of the most frequent side effects after this procedure. However, predictive factors for fever after-ESD, as well as the potential benefit of antibiotic prophylaxis remain unknown. Our goal was to identify risk factors for fever after-ESD. **Methods** Retrospective cohort study including consecutive patients who underwent ESD for colorectal lesions, between 2018 and 2020. The primary outcome was fever, defined as a temperature higher than 38°C. Predictive factors for fever were explored, including antibiotic prophylaxis.

**Results** Overall, we included 41 patients corresponding to 41 different colorectal lesions (median size 35 mm, IQR [22.5-50]). Most lesions were located in the rectum (78%). Orotracheal intubation was performed in 58.5% of cases and the median duration time was 85 minutes (IQR [45-150]). Fever occurred in 19.5% (n = 8) and 1 patient had positive blood culture. Antibiotics were initiated in 15%

of all cases. Lesion size (55 vs 35 mm, p=0.04) and procedure time (180 vs 75 min, p=0.02) were associated to fever after-ESD. Age (72 vs 64 years, p=0.51), lesion location (21.8% vs 11.1%) and need for orotracheal intubation (29% vs 6%, p=0.11) did not influence the development of fever after-ESD. Patients with fever had a higher hospitalization time (OR 2.2, 95% CI [1.17-4.19], p=0.02).

**Conclusions** In colorectal ESD, bigger lesion size and longer procedure time were associated to fever. Patients with fever after-ESD had higher hospitalization time.

## eP233 UNDERWATER ENDOSCOPIC SUBMUCOSAL DISSECTION AND HYBRID ENDOSCOPIC SUBMUCOSAL DISSECTION AS RESCUE TECHNIQUE IN DIFFICULT NAIVE COLORECTAL CASES

Authors [Cecinato P<sup>1</sup>](#), [Campanale M<sup>1</sup>](#), [Lucarini M<sup>1</sup>](#), [Azzolini F<sup>2</sup>](#), [Bassi F<sup>1</sup>](#), [Sassatelli R<sup>1</sup>](#)

Institute 1 Azienda USL-IRCCS di Reggio Emilia, Gastroenterology and Endoscopy Unit, Reggio Emilia, Italy; 2 Vita Salute San Raffaele University, Division of Gastroenterology & G.I. Endoscopy, Milano, Italy

DOI [10.1055/s-0041-1724729](#)

**Citation:** Cecinato P, Campanale M, Lucarini M et al. eP233 UNDERWATER ENDOSCOPIC SUBMUCOSAL DISSECTION AND HYBRID ENDOSCOPIC SUBMUCOSAL DISSECTION AS RESCUE TECHNIQUE IN DIFFICULT NAIVE COLORECTAL CASES. *Endoscopy* 2021; 53: S174.

**Aims** Endoscopic submucosal dissection (ESD) provides a high en bloc resection rate, accurate histological evaluation, and a low rate of local recurrence as compared with EMR in colorectal lesions resection. However, colorectal ESD is still not widely used because of technical difficulty, risk of complications, time required to carry out the procedure. The favourable position in the approach to neoplasia and a clear distinction of submucosal and muscular layer are crucial points of technical difficulty. ESD with snaring, hybrid ESD (HESD), and underwater ESD (UESD) are two alternative techniques to overcome these problems. Immersion can provides good traction during dissection and magnification by the refractive index of water. We retrospectively evaluated the safety and efficacy of these techniques as alternative to standard ESD in difficult situations.

**Methods** Between January 2014 and July 2020, HESD was carried out on 35 and UESD on 18 colorectal neoplasms. All cases were carried out as a rescue treatment in difficult naive colorectal ESD cases. We retrospectively investigated procedure time, rates of en bloc resection, complete resection, complications, and time of procedures.

**Results** In both groups lesions were located above all in the right colon (UESD 8/18 vs HESD 21/35), instead mean lesion's area was higher in UESD group

► Tab. 1

	Underwater ESD (18)	Hybrid ESD (35)	p value
<b>Adverse events (%)</b>			
Perforation	1 (5.5)	4 (11.4)	ns
Bleeding	0 (0)	3 (8.6)	ns
Fever	4 (22.2)	3 (8.6)	ns
<b>En bloc resection (%)</b>	18 (100)	21 (60)	0.002
<b>Average Time/Area (min/cm<sup>2</sup>)</b>	10.2	19.0	0.002

(12.7cm<sup>2</sup> vs 4.8cm<sup>2</sup>). In the UESD group, procedure time (time/resected area) was shorter compared with the ESD group (10.2 min/cm<sup>2</sup> vs 19.0 min/cm<sup>2</sup>; p 0.002), the en bloc resection rate was higher (100% vs 60%; p 0.002), the complete resection rate was higher (100% vs 82.8%; p 0.08), overall adverse events rate was similar (27.8% vs 22.9%; p 0.54) and always solved without surgery.

**Conclusions** UESD as a rescue treatment in difficult colorectal ESD cases allows higher en bloc resection rate of bigger lesions in less time. Prospective studies are necessary to validate these results.

## eP234 ENDOSCOPIC SUBMUCOSAL DISSECTION IN NAIVE COLORECTAL NEOPLASM PERFORMED WITH A WATER JET SYSTEM-ASSISTED KNIFE: HIGHER EN BLOC RESECTION RATE THAN CONVENTIONAL TECHNIQUE

**Authors** Cecinato P<sup>1</sup>, Campanale M<sup>1</sup>, Lucarini M<sup>1</sup>, Azzolini F<sup>2</sup>, Tioli C<sup>1</sup>, Sassatelli R<sup>1</sup>

**Institute** 1 Azienda USL-IRCCS di Reggio Emilia, Gastroenterology and Endoscopy Unit, Reggio Emilia, Italy; 2 Vita Salute San Raffaele University, Division of Gastroenterology & G.I. Endoscopy, Milano, Italy  
DOI 10.1055/s-0041-1724730

**Citation:** Cecinato P, Campanale M, Lucarini M et al. eP234 ENDOSCOPIC SUBMUCOSAL DISSECTION IN NAIVE COLORECTAL NEOPLASM PERFORMED WITH A WATER JET SYSTEM-ASSISTED KNIFE: HIGHER EN BLOC RESECTION RATE THAN CONVENTIONAL TECHNIQUE. Endoscopy 2021; 53: S175.

**Aims** Endoscopic submucosal dissection (ESD) is a minimally invasive approach that facilitates en bloc resection of colorectal lesions. This technique provides a high en bloc resection rate, accurate histological evaluation, and a low rate of local recurrence as compared with conventional EMR. However, colorectal ESD is still not widely used because of technical difficulty, risk of complications, and time required to carry out the procedure. To overcome the last limitation several techniques have been proposed. One of these is the use of a water jet system-assisted knife that allows to inject and cut with the same device. In this study, we retrospectively evaluated the safety and efficacy of this technique and compared it with conventional ESD technique (CESD).

**Methods** Between January 2014 and July 2020, ESD was carried out on 162 naive colorectal neoplasms, in 120 cases a water jet system-assisted knife (WESD) was used. We retrospectively investigated the rates of en bloc resection, complete resection, perforation, bleeding, and time of procedures.

**Results** In both groups a high amount of lesions was located in the colon (WESD 57/120 vs CESD 29/42), instead mean neoplasm area was higher in WESD (9.0cm<sup>2</sup> vs 4.8cm<sup>2</sup>). Procedure time (time/area of lesion) was similar in both groups (WESD 15.5 min/cm<sup>2</sup> vs CESD 15.5 min/cm<sup>2</sup>), the en bloc resection was higher in WESD (94.2% vs 83.3%; p 0.03), the complete resection rate

was similar (90.8% vs 90.5%; p 0.94), overall adverse events rate tended to be lower in WESD (12.5% vs 21.4%; p 0.16).

**Conclusions** WESD in colorectal neoplasms allows higher en bloc resection rate in the same time than CESD with low rate of adverse events.

## eP235V DISSECTION USING THE POCKET-CREATION METHOD – ENDOSCOPIC SUBMUCOSAL DISSECTION OF POLYPOID LESION OF THE SYGMOID

**Authors** Moura DB<sup>1</sup>, Nunes N<sup>1</sup>, Chálim Rebelo C<sup>1</sup>, Flor de Lima M<sup>1</sup>, Santos MP<sup>1</sup>, Costa Santos V<sup>1</sup>, Rego AC<sup>1</sup>, Pereira JR<sup>1</sup>, Paz N<sup>1</sup>, Duarte MA<sup>1</sup>  
**Institute** 1 Hospital do Divino Espírito Santo de Ponta Delgada, Gastroenterology Department, Ponta Delgada, Portugal  
DOI 10.1055/s-0041-1724731

**Citation:** Moura DB, Nunes N, Chálim Rebelo C et al. eP235V DISSECTION USING THE POCKET-CREATION METHOD – ENDOSCOPIC SUBMUCOSAL DISSECTION OF POLYPOID LESION OF THE SYGMOID. Endoscopy 2021; 53: S175.

Endoscopic submucosal dissection (ESD) is an effective technique for the complete resection of polypoid lesions. Male patient, 73 years old, colonoscopy revealed a sessile polyp of 40 mm in the sigmoid, JNET 2B. The patient was proposed for ESD. A solution of indigo carmine and adrenalin was injected into the submucosa, followed by a mucosal incision. Submucosal dissection was performed by pocket-creation method, with en bloc resection. Pathology evaluation revealed the lesion was an adenomatous polyp with low grade dysplasia and negative margins. This case demonstrates the advantage of the pocket-creation method, allowing the complete resection of a large lesion.

## eP236V DOUBLE DISSECTION AT THE CECUM - ENDOSCOPIC SUBMUCOSAL DISSECTION

**Authors** Moura DB<sup>1</sup>, Nunes N<sup>1</sup>, Flor de Lima M<sup>1</sup>, Chálim Rebelo C<sup>1</sup>, Santos MP<sup>1</sup>, Costa Santos V<sup>1</sup>, Rego AC<sup>1</sup>, Pereira JR<sup>1</sup>, Paz N<sup>1</sup>, Duarte MA<sup>1</sup>  
**Institute** 1 Hospital do Divino Espírito Santo de Ponta Delgada, Gastroenterology Department, Ponta Delgada, Portugal  
DOI 10.1055/s-0041-1724732

**Citation:** Moura DB, Nunes N, Flor de Lima M et al. eP236V DOUBLE DISSECTION AT THE CECUM - ENDOSCOPIC SUBMUCOSAL DISSECTION. Endoscopy 2021; 53: S175.

Endoscopic submucosal dissection (ESD) results in high en-bloc resection rate. Male, 80 years old, two sessile polyps of 20 mm and 40 mm in the cecum (JNET 2A). A solution of carmine and adrenalin was injected, followed by mucosal incision. In the first, conventional submucosal dissection, the scar was closed with clips. In the second, submucosal dissection was performed by traction method. Histology revealed that the first was hyperplastic. The second was adenomatous, high grade dysplasia, negative margins. This case demonstrates ESD at the cecum. ESD has the potential to become the common therapy for large superficial colorectal sessile tumors.

## eP237V HYBRID COLORECTAL ENDOSCOPIC MUCOSAL RESECTION (EMR) TO TREAT DIFFICULT, FIBROTIC RESIDUAL ADENOMAS

**Authors** Pereira Guedes T<sup>1</sup>, Küttner-Magalhães R<sup>1,2</sup>, Marques-de-Sá I<sup>3</sup>, Maia L<sup>1</sup>, Pedrote I<sup>1,2</sup>  
**Institute** 1 Santo António Hospital, Porto University Hospital Center, Gastroenterology, Porto, Portugal; 2 Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal; 3 Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal  
DOI 10.1055/s-0041-1724733

**Citation:** Pereira Guedes T, Küttner-Magalhães R, Marques-de-Sá I et al. eP237V HYBRID COLORECTAL ENDOSCOPIC MUCOSAL RESECTION (EMR) TO TREAT DIFFICULT, FIBROTIC RESIDUAL ADENOMAS. Endoscopy 2021; 53: S175.

► Tab. 1

	Water jet system-assisted knife ESD (120)	Conventional ESD (42)	p value
En bloc resection (%)	113 (94.2)	38 (90.5)	0.03
Adverse events (%)	15 (12.5)	9 (21.4)	0.16
Perforation	7 (5.8)	6 (14.3)	0.08
Bleeding	2 (1.7)	2 (4.8)	0.27
Fever	11 (9.2)	1 (2.4)	0.15



Endoscopic management of residual adenomas can be technically difficult. Among different options, hybrid Endoscopic Mucosal Resection (EMR) offers a compromise between standard EMR and Endoscopic Submucosal Dissection (ESD). We present 2 cases of hybrid colorectal EMR to address fibrotic residual adenomas. Circumferential incision of the lesion was made with the tip of the snare followed by partial submucosal dissection with knife and finally piece-meal EMR. We highlight the relevance of complying with scheduled follow-ups/surveillance and the importance of careful good quality post EMR scar inspection. We demonstrate the feasibility of hybrid EMR in the management of difficult, fibrotic residual lesions.

### eP238V SUCCESSFUL RECTAL ESD FOR A LARGE FLAT RECTAL ADENOMA WITH THE APPLICATION OF SCISSOR-TYPE SB KNIFE AND DUAL ENDOSCOPIC TECHNIQUE FOR TRIANGULATION-A VIDEO CASE REPORT

**Authors** Madacsy L<sup>1</sup>, Finta A<sup>1</sup>, Lovasz BD<sup>2</sup>, Oczella L<sup>1</sup>, Szalai M<sup>1</sup>

**Institute** 1 Endo-Kapszula, Endoscopy Unit, Szekesfehervar, Hungary; 2 Semmelweis University, Department of Applied Health Sciences, Budapest, Hungary

**DOI** 10.1055/s-0041-1724734

**Citation:** Madacsy L, Finta A, Lovasz BD et al. eP238V SUCCESSFUL RECTAL ESD FOR A LARGE FLAT RECTAL ADENOMA WITH THE APPLICATION OF SCISSOR-TYPE SB KNIFE AND DUAL ENDOSCOPIC TECHNIQUE FOR TRIANGULATION-A VIDEO CASE REPORT. *Endoscopy* 2021; 53: S176.

Endoscopic submucosal dissection (ESD) for superficial gastrointestinal neoplasms has become a gold standard procedure. Scissor-type ESD knife enables the performance of all ESD techniques, including mucosal incision, submucosal dissection, and hemostasis. We demonstrate a video case of a young female patient suffering from a flat type sessile serrated rectal adenoma with LGD (IIa-LST-NG) complicated with significant submucosal scarring. After circumferential marking with Q-type-clear-cut-knife (Finemedix) and sequential submucosal injection of 50 ml Eleview we performed an R0, one-piece ESD of the 35x45 mm-large lesion with scissor-type SB-Jr-knife (Sumitomo). We completed the resection with a second endoscope assisted triangulation within 155 min.

### eP239 SHORT- AND LONG-TERM OUTCOMES OF WESTERN-BASED ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL LESIONS

**Authors** Maselli R<sup>1</sup>, Spadaccini M<sup>1</sup>, Belletrutti Pj<sup>2,2</sup>, Galtieri PA<sup>1</sup>, Attardo S<sup>3</sup>, Pellegatta G<sup>1</sup>, Ferrara EC<sup>1</sup>, Fugazza A<sup>1</sup>, Carrara S<sup>1</sup>, Iannone A<sup>4</sup>, Hassan C<sup>5</sup>, Repici A<sup>1</sup>

**Institute** 1 Humanitas Research Hospital, Rozzano, Italy; 2 Calgary University, Calgary, Canada; 3 Ospedale Maggiore della Carità, Novara, Italy; 4 Bari University, Bari, Italy; 5 Nuovo Regina Margherita, Roma, Italy

**DOI** 10.1055/s-0041-1724735

**Citation:** Maselli R, Spadaccini M, Belletrutti Pj et al. eP239 SHORT- AND LONG-TERM OUTCOMES OF WESTERN-BASED ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL LESIONS. *Endoscopy* 2021; 53: S176.

**Aims** The role of ESD for CR lesions in Western communities is unclear and its adoption is still limited. This may be attributed to the disappointing technical outcomes in preliminary studies, along with the lack of long-term data coming from Western centers. The aim of this study is to assess the long-term outcomes of a large cohort of patients treated with colorectal ESD in a tertiary Western center.

**Methods** Between February 2011 and November 2019, a retrospective analysis of a prospectively maintained database was conducted on patients treated by colorectal ESD. The primary outcome was the recurrence rate. Secondary outcomes were en-bloc, and R0 resection rates, and adverse events. The curative resection rate was assessed for submucosal invasive lesions. Statistical analysis included descriptive statistics, Chi square and Kaplan-Meier tests.

**Results** Over the study period, 327 consecutive patients (median age:69 (IQR:60-76)years old; 201-61.5%-males)were included in the analysis. The90.8%of lesions were resected in an en-bloc fashion. The rate of R0 resection was 83.1% (217/261) and 44.0%(29/66) for standard and hybrid techniques, respectively. Submucosal invasion and piece-meal resection independently predicted R0 resections. A total of 18(5.5%) intra-procedural AEs (11 perforations and 7 bleedings) and 12(3.7%) post-procedural AEs (2 perforations and 10 bleedings) occurred. The two patients readmitted for a post procedural perforation were referred for surgery and were excluded from the follow-up analysis. Seventy-five out of 327 lesions (23.0%) resulted in CR neoplasia with submucosal invasion. Fifty-seven of them showed high-risk features of nodal involvement (non-curative ESD) and were excluded from the follow-up analysis, which finally involved 268 patients. Eighteen adenoma recurrences per 1,000 person-years (15 cases, 5.6%) were detected in a median follow-up time of 36 months. No carcinoma recurrences were observed. R1 resection and intra-procedural adverse events independently predicted recurrences.

**Conclusions** Colorectal-ESD, especially with standard approach, is a safe and effective option for colorectal neoplasia in a Western setting, with short and long-terms outcomes comparable to published Eastern series. Achieving en-bloc, R0 resections, avoiding intra-procedural adverse events might minimize the risk of adenoma recurrence.

### eP240 AUTOMATIC EMBEDDING TECHNIQUE FOR HISTOPATHOLOGICAL EXAMINATION INCREASES R0 RESECTION RATES FOR ENDOSCOPIC SUBMUCOSAL DISSECTION: A MAJOR IMPACT IN DECREASING LOCAL RISK STATUS FOR ANORECTAL CASES

**Authors** Verset L<sup>1</sup>, Bucalau A-M<sup>2</sup>, Figueiredo Ferreira M<sup>2</sup>, Devière J<sup>2</sup>, Huberty V<sup>2</sup>, Demetter P<sup>1</sup>, Lemmers A<sup>2</sup>

**Institute** 1 Bordet Institute, Université Libre de Bruxelles (ULB), Pathology Department, Brussels, Belgium; 2 CUB Erasme Hospital, Université Libre de Bruxelles (ULB), Gastroenterology, Hepato-Pancreatology and Digestive Oncology, Brussels, Belgium

**DOI** 10.1055/s-0041-1724736

**Citation:** Verset L, Bucalau A-M, Figueiredo Ferreira M et al. eP240 AUTOMATIC EMBEDDING TECHNIQUE FOR HISTOPATHOLOGICAL EXAMINATION INCREASES R0 RESECTION RATES FOR ENDOSCOPIC SUBMUCOSAL DISSECTION: A MAJOR IMPACT IN DECREASING LOCAL RISK STATUS FOR ANORECTAL CASES. *Endoscopy* 2021; 53: S176.

**Aims** Endoscopic submucosal dissection (ESD) allows « en-bloc » resection of superficial gastrointestinal neoplasia. Standardized macroscopic and microscopic approaches are required to adequately assess the curative status. Nevertheless, margin assessment is sometimes challenging especially if samples are not correctly orientated within paraffin blocks. The aim of the study was to compare margin status of ESD specimens embedded using one of two methods: a manual embedding technique (MET) or an automatic embedding technique (AET).

**Methods** Data from consecutive ESDs performed between June 2015 and November 2020 in a single center (Erasme University Hospital) were collected. For MET, orientation of slices was realized by a technician within the paraffin while for AET, the pathologist orientated slices using a gel (Tissue-Tek Paraform Biopsy Gel-Sakura) and the blocks were embedded using an automate (Tissue-Tek AutoTEC a120-Sakura). Microscopy of all ESD specimens was revised by two pathologists. ESDs were realized for dysplastic lesions or cancer arising from esophagus (32% MET-30% AET), stomach (21% MET- 20% AET), duodenum (1% AET), colon (9% MET-6% AET) and anorectal location (38% MET-43% AET).

**Results** 189 ESDs were collected: 100 with MET and 89 with AET. We observed positive margins in 29% and 6.7% for MET group and AET group, respectively (p=0.00031). In MET group, positive margins were lateral in 23 cases (79.3%) and deep in 6 cases (20.7%) while in AET group, positive margins were lateral

in 3 cases (50%) and deep in 3 cases (50%) (p=NS). AET displayed lower positive margins rate in anorectal lesions (8%) than MET (37%) (p=0.005). AET decreased local recurrence risk (0% compared to 31% for MET) in anorectal lesions (p<0.001).

**Conclusions** AET results in improved margin status of ESD specimens, especially with regard to lateral margins in anorectal cases, resulting in decreased local risk status, and potentially more appropriate surveillance interval.

## eP241 PROPHYLACTIC ENDOSCOPIC CLOSURE AFTER WIDESPREAD ESD/EMR (COLON POLYPS $\geq$ 20MM) IN THE COLORECTUM USING THE OVER-THE-SCOPE-CLIP (OTSC) SYSTEM. A RETROSPECTIVE STUDY

**Authors** Blasberg T<sup>1</sup>, Leifeld L<sup>2</sup>, Jung C<sup>3</sup>, Hochberger J<sup>4</sup>, Wedi E<sup>1</sup>

**Institute** 1 Sana Klinikum Offenbach, Gastroenterology, Gastrointestinal Oncology and Interventional Endoscopy, Offenbach, Germany; 2 St. Bernwards Krankenhaus, Gastroenterology and Internal Medicine, Hildesheim, Germany; 3 Forli-Cesena Hospitals, AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forli-Cesena, Italy; 4 VIVANTES-Gesundheitsnetzwerk - Klinikum Friedrichshain, Gastroenterology, Gastrointestinal Oncology and Interventional Endoscopy, Berlin, Germany  
DOI 10.1055/s-0041-1724737

**Citation:** Blasberg T, Leifeld L, Jung C et al. eP241 PROPHYLACTIC ENDOSCOPIC CLOSURE AFTER WIDESPREAD ESD/EMR (COLON POLYPS  $\geq$ 20MM) IN THE COLORECTUM USING THE OVER-THE-SCOPE-CLIP (OTSC) SYSTEM. A RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S177.

**Aims** This study aims to evaluate the efficacy and safety of prophylactic tissue approximation and wound reduction using the OTSC-System after complex endoscopic submucosal dissection (ESD) or endoscopic mucosal resection (EMR) of large ( $\geq$ 20mm) colonic and rectal superficial lesions.

**Methods** Between February 2009 and March 2016 a total of 59 patients with large ( $\geq$ 20mm) colonic and rectal superficial lesions were enrolled in this study. All lesions were either removed by ESD or EMR. The post-ESD or post-EMR mucosal defect was closed using the OTSC-System. For this interventional 2-center study, data were collected prospectively and analysis was performed retrospectively.

**Results** In total 59 patients (mean age 64.5  $\pm$  10.7 years; female 32% (19/59); male 40% (40/59)), underwent ESD (64.4%, 38/59) or EMR (35.6%, 21/59) in the colorectum. The mean lesion diameter was 63mm  $\pm$  29.5 (range 22-130mm). Complete R0 resection rate of ESD and EMR was 86.8% and 85.7%, respectively. The mean number of OTSC clips placed on the mucosal defect was two (range 1 – 5). In 6 patients (10.2%, 6/59) OTSC clips were used due to intraoperative minor adverse events as intraoperative bleeding occurred in 6.8% (ESD 2.6% vs. EMR 14.3%) and intraoperative perforation in 3.4% (ESD 2.6% vs. EMR 4.8%) of the cases. Among the remaining 53 patients (89.9%, 53/59) who received prophylactic clipping, delayed postoperative bleeding (DPPB) occurred in 1.9% (ESD 0% vs. EMR 5.9%) and delayed perforation in 0% of the cases.

**Conclusions** Prophylactic tissue approximation and wound reduction of large post-ESD/EMR defects using the OTSC-system may be an effective strategy in reducing the risk of DPPB and delayed perforation.

## eP242 EFFICACY AND SAFETY OF SELF EXPANDING METAL STENTS (SEMS) IN COLONIC MALIGNANT PROXIMAL STENOSIS

**Authors** Orlando D<sup>1</sup>, Assisi D<sup>1</sup>, Venti E<sup>1</sup>, Vanella G<sup>1</sup>, Lapenta R<sup>1</sup>

**Institute** 1 Regina Elena National Cancer Institute, Rome, Italy  
DOI 10.1055/s-0041-1724738

**Citation:** Orlando D, Assisi D, Venti E Garcés-Duran R, Galdin-Ferreira M, Delgado-Guillena P et al. eP242 EFFICACY AND SAFETY OF SELF EXPANDING METAL STENTS (SEMS) IN COLONIC MALIGNANT PROXIMAL STENOSIS. *Endoscopy* 2021; 53: S177.

**Aims** Self-expanding metal stents have been used in the management of colorectal obstruction as an alternative to emergency surgery. Aim of this study is to evaluate efficacy and safety of placement of colonic stent in proximal colon.

**Methods** A retrospective analysis of all patients referred to our Institute who underwent placement of SEMS for colonic stenosis proximal to the mid transverse due to metastatic and/or extensive locally invasive disease was performed.

**Results** A total of 31 patients (15 male and 16 female, mean age 62.9) were included. Primitive neoplasia was colon adenocarcinoma in 30 patients, one patient presented colon obstruction secondary to peritoneal carcinosis in gastric adenocarcinoma. Successful insertion with adequate placement of the stent across the stricture was achieved in all patients. 30/31 patients (technical success at 24 hours 96.7%) had complete deployment of the prosthesis. Clinical success considered at 48-72 hours as absence of bowel distension and return to regular bowel habits occurred in all patients (100%). Due to prosthesis occlusion one patient underwent stent in stent placement at 10 months from the first procedure. One patient underwent tertiary stent in stent placement, the second and the third stent were positioned at one and three months from the first stenting procedure respectively, with a documented survival of seventeen months after the last procedure. Fifteen patients (48.3%) performed up of 6 cycle of chemotherapy (> half treatment) and 7 of these (46.6%) were alive at 12 months from the prosthesis placement and were able to perform the chemotherapy's established schedule.

**Conclusions** SEMS placement is a safe and effective procedure for the palliative treatment of colonic obstruction also in the right colon. The proximal localization of the lesion does not influence the high rate of technical and clinical success. Placement of SEMS also permits to begin chemotherapy and/or radiotherapy as soon as possible.

## eP243 LONG TERM COMPLETE RESPONSE IN METASTATIC POORLY-DIFFERENTIATED NEUROENDOCRINE RECTAL CARCINOMA WITH MULTIMODAL APPROACH: A CASE REPORT

**Authors** de Nucci G<sup>1</sup>, della Torre S<sup>2</sup>, Mandelli ED<sup>1</sup>, Bollina R<sup>2</sup>, Manes G<sup>1</sup>

**Institute** 1 ASST Rhodense, Gastroenterology and Endoscopy Unit, Garbagnate Milanese (MI), Italy; 2 ASST Rhodense, Oncology Unit, Rho, Italy  
DOI 10.1055/s-0041-1724739

**Citation:** de Nucci G, della Torre S, Mandelli ED et al. eP243 LONG TERM COMPLETE RESPONSE IN METASTATIC POORLY-DIFFERENTIATED NEUROENDOCRINE RECTAL CARCINOMA WITH MULTIMODAL APPROACH: A CASE REPORT. *Endoscopy* 2021; 53: S177.

**Aims** Neuroendocrine gastrointestinal tumors (NETs) are rare and they have different natural behavior. Surgery is the gold standard treatment in local disease while radiotherapy has been demonstrated inefficacy. Poorly differentiated neuroendocrine carcinomas (NECs) represent only 5–10% among digestive NETS. Due to aggressive growth and rapid metastatic diffusion, early diagnosis and multidisciplinary approach are mandatory. The role of surgery and radiotherapy in this setting is still debated, chemotherapy approach instead remains the treatment of choice.

**Methods** Here we present the case of a 42 years old male with an ulcerated rectal lesion, diagnosed as a NEC G3 (ki67 index >90%) treated initially with 3 cycles of first-line chemotherapy (cisplatin and etoposide) but with an early local progression disease at 3 months control. After a multidisciplinary evaluation, the patient underwent to open anterior low rectal resection, sphincter-sparing. In September 2015 however the first post-surgery total-body CT scan showed an early pelvic relapse of disease without any other localization of disease in 18F-FDG PET/CT.

**Results** So systemic chemotherapy with FOLFIRI was made a Partial Response (RP). A pelvic radiotherapy (50 Gy) followed. On March 2016, CT scan and 18F-FDG PET/CT imaging showed CR of pelvic lesion, pathological abdominal inter-aortocaval lymph-nodes emerged instead. Because of early progression from systemic treatment in abdominal malignant nodes, we directed the patient to

45Gy radiotherapy on metastatic sites, obtaining a CR. He has now days after 5 years no symptoms of relapse e had no late toxicity after chemotherapy or radiotherapy.

**Conclusions** Our case demonstrates how a multimodal approach can be successful to obtain a long CR in local e metastatic sites in patients with high grade digestive NEC.

### eP244 LONG-TERM SURVIVAL ANALYSIS AFTER ENDOSCOPIC STENTING AS A BRIDGE TO SURGERY FOR MALIGNANT COLORECTAL OBSTRUCTION: COMPARISON WITH EMERGENCY DIVERTING COLOSTOMY

**Authors** Corsato Scomparin R<sup>1</sup>, Costa Martins B<sup>1</sup>, Lenz L<sup>1</sup>, Haendchen Bento I<sup>1</sup>, Sparapam Marques C<sup>1</sup>, Safatle-Ribeiro A<sup>1</sup>, Ribeiro Jr U<sup>1</sup>, Carlos Nahas S<sup>1</sup>, Maluf-Filho F<sup>1</sup>

**Institute** 1 Instituto do Câncer do Estado de São Paulo - ICESP, Endoscopy, São Paulo, Brazil

**DOI** 10.1055/s-0041-1724740

**Citation:** Corsato Scomparin R, Costa Martins B, Lenz L et al. eP244 LONG-TERM SURVIVAL ANALYSIS AFTER ENDOSCOPIC STENTING AS A BRIDGE TO SURGERY FOR MALIGNANT COLORECTAL OBSTRUCTION: COMPARISON WITH EMERGENCY DIVERTING COLOSTOMY. *Endoscopy* 2021; 53: S178.

**Aims** More than 20 years have elapsed since the first description of the use of Colorectal self-expanding metal stents (SEMS) as bridge therapy of malignant colorectal obstruction, and the theme remains controversial. The aim of this study was to compare the long-term survival of patients with malignant colorectal obstruction with potentially resectable disease who underwent colorectal SEMS versus emergency surgery.

**Methods** Retrospective analyses. Patients included from 2009 to 2017. According to the eligibility criteria, 21 patients included in the SEMS group and 67 were included in the surgical arm.

**Results** The majority in the SEMS group were female (57.1%). In the surgery group, the majority were male (53.7%). **Main outcome** The median follow-up time was 60mo for both groups with the same 75% interquartile range of 60mo. There was no difference in the overall survival rate (Log rank p=0.873) and disease-free survival rate (Log rank p=0.2821) in five-year analysis. **Secondary outcome** There was no difference in local recurrence (38.1% vs 22.4%, p=0.14) or distant recurrence rates (33.3% vs 50.7%, p=0.16) in the SEMS vs. the surgical groups, respectively. Technical and clinical success rates of endoscopic stenting were 95.3 and 85.7%, respectively. There were no immediate adverse events (AE). Severe AEs were perforation (14.3%), silent perforation 4.7%, reobstruction 14.3% and bleeding 14.3%. Mild AE were pain 42.8%, tenesmus 9.5% and incontinence 4.76%.

**Limitations** Retrospective and single-centered study.

**Conclusions** Our study did not find differences in disease-free survival and overall survival in 5-year analysis in patients with resectable colorectal cancer submitted to SEMS versus colostomy for the treatment of malignant colorectal obstruction. SEMS group had a higher rate of primary anastomosis and a lower rate of temporary colostomy.

### eP245 TRENDS OF SCREENING UTILIZATION, BOWEL PREPARATION AND POLYP DETECTION AND ITS EFFECT ON COLORECTAL CANCER INCIDENCE IN MAJOR ETHNIC GROUPS IN ISRAEL

**Authors** Abu Baker F<sup>1</sup>, Kopelman Y<sup>1</sup>

**Institute** 1 Hillel Yaffe Meidcal Center, Gastroenterology and Hepatology, Hadera, Israel

**DOI** 10.1055/s-0041-1724741

**Citation:** Garcés-Duran R, Galdin-Ferreya M, Delgado-Guillena P et al. Abu Baker F, Kopelman Y. eP245 TRENDS OF SCREENING UTILIZATION, BOWEL PREPARATION AND POLYP DETECTION AND ITS EFFECT ON COLORECTAL CANCER INCIDENCE IN MAJOR ETHNIC GROUPS IN ISRAEL *Endoscopy* 2021; 53: S178.

**Aims** Similar to other western countries, recent reports have confirmed the improving trends in colorectal cancer (CRC) incidence and outcomes in Israel. Still, disparities in incidence and mortality in CRC continue to persist between major ethnic groups, despite the provision of widespread screening and improved care. We aimed to outline, from an endoscopic point of view, ethnic disparities in major endoscopic measures concerned with CRC screening and detection.

**Methods** We reviewed electronic reports of patients referred for colonoscopy procedures over a 20-year period. We compared demographic, clinical and endoscopic findings between major ethnic population groups in Israel. Trends of screening utilization, bowel preparation and polyp detection rates were tracked and incidence of colorectal cancer development were followed for both groups.

**Results** A total of 51307 patients had undergone colonoscopy procedures, of whom 16% were Arabs and 84% were Jewish, were included for final analysis. During all the study period the rate of procedures performed for CRC screening were significantly lower in the Arab group (4.93% vs. 13.07%; P<0.0001). In parallel, for the most part of follow-up period, the Arab patients had higher rates of inadequate bowel preparation (overall: 20% vs. 12%; P<0.001) and lower polyp detection rate (16.7% vs. 22.5%; P<0.0001). Expectedly, the incidence of CRC has steadily decreased in the Jewish group, while an adverse pattern of increasing incidence was documented in the Arabs patient during the follow up period.

**Conclusions** Characterized by lower screening utilization and poor bowel preparation, the incidence of CRC in the Arab patients is increasing, while improving trends of CRC were observed in their Jewish counterparts.

### eP246 ADVERSE EVENTS FOLLOWING COLORECTAL STENTING IN PATIENTS WITH LOCALLY ADVANCED COLONIC AND EXTRACOLONIC CANCER AND PERITONEAL METASTASES: COMPARISON WITH DECOMPRESSIVE SURGERY

**Authors** Davydova S<sup>1</sup>, Fedorov A<sup>1</sup>, Yun O<sup>2</sup>, Klimov A<sup>1</sup>

**Institute** 1 Peoples' Friendship University of Russia (RUDN University), Institute of Medicine, Department of Faculty Surgery, Moscow, Russian Federation; 2 University Clinical Hospital # 1, Endoscopy Department, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724742

**Citation:** Davydova S, Fedorov A, Yun O et al. eP246 ADVERSE EVENTS FOLLOWING COLORECTAL STENTING IN PATIENTS WITH LOCALLY ADVANCED COLONIC AND EXTRACOLONIC CANCER AND PERITONEAL METASTASES: COMPARISON WITH DECOMPRESSIVE SURGERY. *Endoscopy* 2021; 53: S178.

**Aims** Relief of large-bowel obstruction caused by locally advanced malignancies and peritoneal carcinomatosis by means of stenting may be associated with an increased complication rate. Aim of the study was to compare outcomes of colorectal stenting and decompressive surgery in patients with stage IV colonic and extracolonic cancer with massive local invasion and peritoneal dissemination.

**Methods** 76 patients presenting with large-bowel obstruction who underwent colorectal stenting (39) or decompressive surgery (37) at the period of 2007-2020 in a city oncological hospital and a university surgical center were included in a non-randomized retrospective study. All patients met one or two criteria of inclusion: locally advanced colorectal cancer – T4b according to TNM classification, tumour directly invades other organs or structures (14/19 patients), obstruction caused by extracolonic malignancy (8/5), peritoneal metastases (17/13). Left-sided obstruction (rectum and left colon) was observed in 35/31 patients, right-sided – in 4/6 patients. Palliative surgery included stoma formation (31) and ileotransverse bypass (6). All adverse events were analyzed.

**Results** More early adverse events were observed after surgical palliation (10 patients, 27%) as compared with stenting (3 patients, 7.7%), p=0,0255. Stent-related complications included 2 colonic perforations with peritonitis (2 and 11

days after stent insertion) and 1 extraperitoneal rectal perforation (2 day after stenting). Surgery-related adverse events included peritonitis (2), parastomal infectious complications (6) and pneumonia (2). Stenting resulted in significantly shorter hospital stay (13 vs. 20 days,  $p=0,0024$ ), lower in-hospital mortality (1 patient, 2,7% vs. 7 patients, 18,9%;  $p=0,0233$ ), but 30-day mortality did not differ (12,8% vs. 18,9%,  $p=0,3395$ ). Overall median survival was 64 days with no difference between the groups ( $p=0,1972$ ).

**Conclusions** In comparison to decompressive surgery colorectal stenting for colonic and extracolonic cancer with massive local invasion and peritoneal metastases has shown significantly fewer adverse events and shorter hospital stay and may be recommended as the preferred palliation.

## eP247 RISK FACTORS FOR HIGH-RISK METACHRONOUS LESIONS DURING FOLLOW-UP AFTER COLORECTAL CANCER RESECTION

**Authors** [Gomes C<sup>1</sup>](#), [Pinho R<sup>1</sup>](#), [Sousa M<sup>1</sup>](#), [Rodrigues J<sup>1</sup>](#), [JC Silva<sup>1</sup>](#), [Afecto E<sup>1</sup>](#), [Correia J<sup>1</sup>](#), [Carvalho J<sup>1</sup>](#)

**Institute** 1 Centro Hospitalar Vila Nova de Gaia/Espinho, Gastroenterology, Vila Nova de Gaia, Portugal

**DOI** [10.1055/s-0041-1724743](#)

**Citation:** Garcés-Duran R, Galdin-Ferreya M, Delgado-Guillena P et al. eP247 RISK FACTORS FOR HIGH-RISK METACHRONOUS LESIONS DURING FOLLOW-UP AFTER COLORECTAL CANCER RESECTION. *Endoscopy* 2021; 53: S179.

**Aims** A high quality perioperative colonoscopy (HQPC) before surgery or within 6 months following colorectal cancer (CRC) resection is recommended according to recent guidelines. Data on the risk factors for high risk metachronous lesions (HRML) after CRC resection are limited and often conflicting. Our aims are to evaluate the impact of a HQPC in the presence of HRML and determine risk factors for HRML.

**Methods** Retrospective analysis of patients submitted to curative resection of CRC in our center included in the RORENO database from January 2014 to March 2018, who had at least one endoscopic surveillance. HQPC was considered in the presence of a complete colonoscopy with fair or good bowel cleansing. Time to HRML was estimated using Kaplan–Meier survival analysis and defined as the time elapsed from CRC resection until the event occurs.

**Results** 195 patients (61.5% males, median age of 66.8 years-old  $\pm 10.6$ ) were evaluated with a mean follow-up of 2 years and 9 months. 90.8% performed a perioperative colonoscopy, though only 53.3% with HQPC criteria. After 1 year of follow-up, 6.5% had HRML and by the end of follow-up HRML were identified in 76.9% (figure 1). Time to HRML was similar between patients' with or without a HQPC (log-rank test  $p=0.13$ ) (figure 2). Male patients (26.7% vs. 12%,  $p=0.01$ ), patients who did not undergo radiotherapy (22.7% vs. 0%,  $p=0.04$ ), patients' without HQPC (27.5% vs. 15.4%,  $p=0.04$ ) and also with an incomplete perioperative colonoscopy (30.4% vs. 14%,  $p=0.01$ ) had more HRML during follow-up. Adjusting for confounders, only being male ( $p=0.03$ , OR=2.9) and having an incomplete perioperative colonoscopy influenced HRML ( $p=0.03$ , OR=5) during follow-up.

**Conclusions** In our sample, almost all patients (90.8%) with CRC performed a perioperative colonoscopy, although only 53.3% with HQPC criteria. In our study, a complete perioperative colonoscopy influenced the presence of HRML during follow-up, especially in male patients.

## eP248 DESCRIPTION OF ENDOSCOPIC SURVEILLANCE ADHERENCE OF COLORECTAL CANCER PATIENTS FOLLOWING SURGERY

**Authors** [Vásquez-Sánchez L<sup>1</sup>](#), [Herrera-Servin MA<sup>2</sup>](#), [Mata-Quintero CJ<sup>1</sup>](#)

**Institute** 1 Hospital Central Norte de Petróleos Mexicanos, Gastrointestinal Endoscopy, Mexico City, Mexico; 2 Hospital General de México, Gastrointestinal Endoscopy, Mexico City, Mexico

**DOI** [10.1055/s-0041-1724744](#)

**Citation:** Garcés-Duran R, Galdin-Ferreya M, Delgado-Guillena P et al. eP248 DESCRIPTION OF ENDOSCOPIC SURVEILLANCE ADHERENCE OF COLORECTAL CANCER PATIENTS FOLLOWING SURGERY. *Endoscopy* 2021; 53: S179.

**Aims** The aim of surveillance is improvement of patient survival by early detection of recurrence or metachronous cancer. The objective is to know the endoscopic surveillance adherence in patients undergoing surgery with curative intent for colorectal cancer at a Mexican hospital. Analyze the prevalence and recurrence with the endoscopic protocol described in the literature.

**Methods** Retrospective and observational study. We select patients who were studied at endoscopy and oncology services at Hospital Central Norte de Petróleos Mexicanos, during January 2015 to December 2019. The analysis was descriptive with measures of central tendency for quantitative variables and frequency distribution for qualitative variables.

**Results** Were found 232 patients. From the final 48 patients, 50% were female. The mean age was 69 years old. The most common site of cancer was sigmoid colon (36%). The endoscopic surveillance was divided in 4 parts: done in appropriate time, done in unappropriate time, waiting in appropriate time, waiting in unappropriate time. About the first endoscopic control, 33% are in a appropriate time, 6% waiting and 27% already done. From the patients who already gone on first surveillance control, 19% had adenomas, regardless of absence of tumor activity in the anastomosis. During this first control, we found 1 local recurrence and 2 metachronous cancer, the 3 patients were taken at unappropriate time of follow up, with a mean time of 36 months after surgery. 19% of patients has the second endoscopic surveillance control; at this group, we found the second recurrence case. The third endoscopic surveillance control, was made to 6% of patients and only 2% had an appropriate interval time.

**Conclusions** We found a local recurrence prevalence of 4%, comparable with literature and 4% of prevalence for metachronous cancer, which is greater than described in the literature. The endoscopic surveillance for colorectal cancer is as important as screening.

## eP249 LONG-TERM INCIDENCE OF ADVANCED COLORECTAL NEOPLASIA IN PATIENTS WITH SERRATED POLYPOSIS SYNDROME

**Authors** [Rodríguez-Alcalde D<sup>1</sup>](#), [Castillo-López G<sup>1</sup>](#), [López-Vicente J<sup>1</sup>](#), [Hernández L<sup>1,2</sup>](#), [Lumbreras-Cabrera M<sup>1</sup>](#), [Moreno-Sánchez D<sup>1</sup>](#)

**Institute** 1 Hospital Universitario de Móstoles, Digestive Disease Section, Móstoles, Spain; 2 Hospital Santos Reyes, Digestive Disease Section, Aranda de Duero, Spain

**DOI** [10.1055/s-0041-1724745](#)

**Citation:** Rodríguez-Alcalde D, Castillo-López G, López-Vicente J<sup>1</sup> et al. eP249 LONG-TERM INCIDENCE OF ADVANCED COLORECTAL NEOPLASIA IN PATIENTS WITH SERRATED POLYPOSIS SYNDROME. *Endoscopy* 2021; 53: S179.

**Aims** Serrated polyposis syndrome (SPS) implies an increased risk of colorectal cancer (CRC), so intensive endoscopic surveillance has been recommended. Although a low incidence of CRC has been described under follow-up, few studies have evaluated long-term risk of developing advanced colorectal neoplasia in these patients.

**Methods** From March 2013 to October 2020, individuals who fulfilled WHO (2010) criteria I and/or III for SPS were retrospective and prospectively recruited. We selected those under endoscopic surveillance after resection of all lesions >3 mm in a high-quality colonoscopy. We excluded patients with total colectomy at SPS diagnosis and those with any interval between colonoscopies >3.5 years. We defined advanced neoplasia as advanced serrated lesion ( $\geq 10$  mm and/or with dysplasia), advanced adenoma or CRC.

**Results** We recruited 129 patients, 11 (8.5%) of whom presented CRC, all prevalent. One hundred and nine started endoscopic surveillance every 1-3 years, 53 (48.6%) women, with a mean age at SPS diagnosis of 59.4 years (SD=8.9). Eighteen (16.5%), 61 (56.0%) and 30 (27.5%) individuals fulfilled criterion I, III and both, respectively. We performed 342 colonoscopies (median = 3, IQR=2-4), with a median follow-up after colonic clearance of 5.0 years (IQR=3.3-7.2)



and a median interval between them of 1.8 years (IQR=1.6-2.1). Five-year cumulative incidences of advanced serrated lesion and advanced adenoma were 17.2% (95%CI 9.4-25.0) and 6.8% (95%CI 1.5-12.1), respectively. Regarding advanced neoplasia, 5-year cumulative incidences were 21.6% (95%CI 13.1-30.1) globally, and 5.6% (95%CI 0-16.1), 10.8% (95%CI 2.7-19.0) and 50.8% (95%CI 30.6-71.1) in patients who fulfilled criterion I, III and both, respectively. No CRC was diagnosed and only 1 (0.9%) patient underwent surgery, because of an unresectable polyp.

**Conclusions** During follow-up of our cohort of patients with SPS, no CRC was diagnosed and only one required surgery. Long-term cumulative incidence of advanced colorectal neoplasia was lower than expected according to previous studies.

## eP250 STUDY OF DIAGNOSTIC ACCURACY OF FECAL IMMUNOCHEMICAL TEST FOR COLORECTAL CANCER SCREENING

**Authors** Lin SS<sup>1</sup>, Ni N<sup>1</sup>, Aung MM<sup>1</sup>, Oo TH<sup>1</sup>, Myint WPP<sup>1</sup>, Htun M<sup>1</sup>, Hmu KLA<sup>1</sup>, Lin N<sup>1</sup>, Sithu K<sup>1</sup>, Aung NN<sup>1</sup>, Aye PS<sup>1</sup>, Win TMM<sup>1</sup>

**Institute** 1 University of Medicine, Department of Gastroenterology, Mandalay, Myanmar

DOI 10.1055/s-0041-1724746

**Citation:** Lin SS<sup>1</sup>, Ni N<sup>1</sup>, Aung MM et al. eP250 STUDY OF DIAGNOSTIC ACCURACY OF FECAL IMMUNOCHEMICAL TEST FOR COLORECTAL CANCER SCREENING. *Endoscopy* 2021; 53: S180. **Aims** To study the diagnostic accuracy of Fecal Immunochemical Tests for Colorectal Cancer screening in Myanmar people

**Methods** It was a cross-sectional descriptive study. 305 healthy volunteers who fulfilled the selection criteria were enrolled and the study was performed at Mandalay General Hospital, Myanmar from January 2018 to June 2019. Qualitative FIT was tested for one time. Colonoscopy was done to all cases on the scheduled date. Data were entered into Microsoft Office Excel 2007 software and data analysis was done by Stata13 software.

### Results

Mean age of participants was 53.8 year. Most common age group was between 50 and 59 year. 75% of cases were female. FIT was positive in 117 cases and negative in 188 participants. The test positivity rate was 38.36%. FIT had sensitivity 43.5%, specificity 63%, positive predictive value 23.1% and negative predictive value 81.4% in this study. There was no colorectal cancer in the study. Colonic adenomas were detected in 62 cases. Colorectal adenoma detection rate in FIT positive subjects was 23% and it was only 18% in FIT negative cases (p=0.34). The area under the curve of FIT for colorectal adenoma was 0.53.

**Conclusions** The diagnostic accuracy of FIT was not good in this study. FIT positivity was associated with increased risk of colorectal adenoma. To use in screening program, FIT should be tested 2 or more times with ensuring to protect environmental effect especially in hot weather.

► Tab. 1

FIT	Colonic adenoma	Normal
Positive	23%	29%
Negative	18%	37%

## eP251 THE ROLE OF THE INTESTINAL MICROBIOTA IN THE CARCINOGENESIS OF COLORECTAL CANCER

**Authors** Karasev I<sup>1</sup>, Vereshchak V<sup>1</sup>, Davydkina T<sup>1</sup>, Malikhova O<sup>1,2</sup>

**Institute** 1 Federal State Budgetary Institution «N.N. Blokhin National Medical Research Center of Oncology» of the Ministry of Health of the Russian Federation (N.N. Blokhin NMRCO), Moscow, Russian Federation; 2 Federal State Budgetary Educational Institution Additional Professional Educational

Education Russian Medical Academy Continuing Professional Education of The Ministry of Health of The Russian Federation, Moscow, Russian Federation

DOI 10.1055/s-0041-1724747

**Citation:** Karasev I, Vereshchak V, Davydkina T et al. eP251 THE ROLE OF THE INTESTINAL MICROBIOTA IN THE CARCINOGENESIS OF COLORECTAL CANCER. *Endoscopy* 2021; 53: S180.

**Aims** There is growing evidence that the gut microbiota is one of the leading factors associated with colorectal cancer carcinogenesis. Etiological factors of CRC, in addition to genetic mutations, chronic inflammation, and exposure to carcinogens, include epigenetic imbalance, dietary changes, and immune system dysfunction. In recent years, there have been more and more studies on the pathogenesis of CRC based on microbiota.

**Methods** With the introduction of the 16s RNA sequencing technique of the intestinal microbiota, reliable data on the relationship of dysbiosis with carcinogenesis were obtained. According to the results of the study, the microbiota of patients with colorectal cancer contains significantly fewer varieties of bacteria than in healthy individuals.

**Results** The main mechanisms of neoplastic transformation of host cells are considered to be the synthesis of pathological metabolites by intestinal bacteria and the production of genotoxins (toxic reactive oxygen species and reactive nitrogen), as a result of which the repair mechanisms and apoptosis processes are disrupted. Chronic inflammation is considered a leading condition for the development of CRC, and a number of studies have shown that the 5-year cumulative risk of having inflammatory bowel disease (IBD) is 33% - 54%. It was reliably established that a decrease in the biological diversity and richness of the microbial component with an increase in the varieties of Fusobacterium (Fn), Peptostreptococcus, Bacteroides, Proteobacteria, Prevotella was observed in patients with CRC.

**Conclusions** The colon shows the highest bacterial density and diversity throughout the gastrointestinal tract, which may indicate an important role of the parietal microbiome in the pathogenesis of colorectal cancer. The mechanisms by which bacteria affect the colon mucosa are difficult and not fully understood. The combined use of epigenetic, microbiological, and metabolic technologies will make it possible to achieve a revolutionary breakthrough in the treatment, prevention, and prognosis of CRC in the future.

## eP252 CLINICAL VALIDATION OF A MULTI TARGET FECAL IMMUNOCHEMICAL TEST FOR COLORECTAL CANCER SCREENING

**Authors** de Klaver W<sup>1,2</sup>, Wisse P<sup>1,3</sup>, van Wifferen F<sup>4</sup>, Bosch L<sup>1</sup>, Jimenez C<sup>5</sup>, van der Hulst R<sup>6</sup>, Fijneman R<sup>1</sup>, Kuipers E<sup>3</sup>, Greuter M<sup>4</sup>, Carvalho B<sup>1</sup>, Spaander M<sup>3</sup>, Dekker E<sup>2</sup>, Coupé V<sup>4</sup>, de Wit M<sup>1</sup>, Meijer G<sup>1</sup>

**Institute** 1 Netherlands Cancer Institute, Department of Pathology, Amsterdam, Netherlands; 2 Amsterdam University Medical Centers, Location Academic Medical Center, Department of Gastroenterology and Hepatology, Amsterdam, Netherlands; 3 Erasmus MC University Medical Centre, Department of Gastroenterology and Hepatology, Rotterdam, Netherlands; 4 Amsterdam University Medical Centers, Location VU University Medical Center, Department of Epidemiology and Data Science, Amsterdam, Netherlands; 5 Amsterdam University Medical Centers, Location VU University Medical Center, Department of Medical Oncology, Amsterdam, Netherlands; 6 Spaarne Gasthuis, Department of Gastroenterology and Hepatology, Haarlem, Netherlands

DOI 10.1055/s-0041-1724748

**Citation:** de Klaver W, Wisse P, van Wifferen F et al. eP252 CLINICAL VALIDATION OF A MULTI TARGET FECAL IMMUNOCHEMICAL TEST FOR COLORECTAL CANCER SCREENING. *Endoscopy* 2021; 53: S180.

**Aims** The fecal immunochemical test (FIT) is widely used in colorectal cancer (CRC) screening. However, FIT leaves room for improvement, in particular for detecting advanced adenomas. To this end the present study aims to design a multi target FIT (mtFIT) to improve FIT-based screening.

**Methods** Individuals (n = 1284) were classified by the most advanced lesion detected during colonoscopy: 47 CRC, 135 advanced adenoma, 30 advanced

serrated polyp, 250 non-advanced adenoma, 53 non-advanced serrated polyp and 769 controls. Antibody-based assays were developed for nine previously identified biomarkers and applied to left-over FIT material. Classification And Regression Tree (CART) analysis was used to identify the optimal combination of these biomarkers and the results were cross-validated to correct for over-optimism. Performance of the mtFIT was compared to FIT, at the same specificity, and impact on population level was projected using the Adenoma and Serrated pathway to Colorectal Cancer (ASCCA) screening model.

**Results** CART analysis of biomarker levels yielded hemoglobin, calprotectin and serpin family F member 2 to construct the mtFIT. At equal specificity of 96.6%, sensitivity for advanced neoplasia increased from 37.3% (95% CI 30.7-44.2) with FIT to 48.1% (95% CI 41.2-55.1) with mtFIT. In particular, sensitivity for advanced adenomas rose by 60.5% (cross-validation 34.5%). mtFIT-based screening was predicted to decrease CRC mortality by 11.1% (cross-validation 6.2%) compared to FIT-based screening. mtFIT-based screening would be cost-effective at mtFIT test costs below €72 (cross-validation €52) assuming a willingness-to-pay threshold of once the Dutch gross domestic product per capita of €41,258 per life-year gained.

**Conclusions** Accuracy of the mtFIT for detecting advanced neoplasia was higher compared to FIT, especially for advanced adenomas. Moreover, mtFIT-based screening appeared to be more effective and cost-effective compared to the current FIT program. Validation of its improved test performance will be examined in a prospective screening trial, which is currently in preparation.

## eP253 FACTORS AFFECTING THE POLYPOSIS DETECTION RATE (PDR) IN GREECE. A RETROSPECTIVE STUDY

**Authors** Voulgaris T<sup>1</sup>, Karatzas P<sup>1</sup>, Laoudi E<sup>1</sup>, Tambaki M<sup>1</sup>, Koureta E<sup>1</sup>, Kaltsa G<sup>1</sup>, Karamanolis G<sup>1</sup>, Papaxoinis K<sup>1</sup>, Kamberoglou D<sup>1</sup>, Vlachogiannakos J<sup>1</sup>, Papatheodoridis G<sup>1</sup>

**Institute** 1 National and Kapodistrian University of Athens, Laiko General Hospital, Athens, Greece

**DOI** 10.1055/s-0041-1724749

**Citation:** Voulgaris T, Karatzas P, Laoudi E et al. eP253 FACTORS AFFECTING THE POLYPOSIS DETECTION RATE (PDR) IN GREECE. A RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S181.

**Aims** Polyp detection rate (PDR) is strongly correlated to the adenoma detection rate, which is the most important metric of the success of colorectal screening programs. We estimated the PDR in an academic Greek gastroenterology department and factors that affect it during a ten-year period.

**Methods** All patients who underwent a screening colonoscopy in our department during the last decade (1/2010-12/2019) were included [2924 patients, Male/Female:1366/1558, median age: 58 years (min:18- max:80 years)]. Epidemiological and endoscopic data were collected.

**Results** Among the total number of colonoscopies performed, 2208 (75.5%) were performed by a trainee under the supervision of an expert and 716 (24.5%) by expert endoscopists. Examination completion was reported in 2654 (90.8%) and it was at least modestly tolerated in 2770 (94.7%) patients, although colonoscopy is performed under midazolam sedation only. Patients tolerance and completion rate didn't differ between trainees and experts ( $p \geq 0.150$ ) but differed according to gender (completion among males:92.8% vs 89%,  $p < 0.001$ - moderate/good tolerance among males:97.5% vs 92.3%,  $p < 0.001$ ). Bowel preparation was at least modest in 2541/2654 patients (95.7%) with a complete endoscopy and was better among females (female:94.7% vs 92.6%,  $p = 0.022$ ). Polyps were reported in 675/2924 (23.1%) and were more commonly reported among patients with complete examination [654/2654(24.6%) vs 21/270(7.1%),  $p < 0.001$ ]. Among patients with a complete endoscopy PDR was not affected by patients bowel preparation [630/2541(24.8%) with at least fair preparation vs 24/113 (21.2%) with poor,  $p = 0.316$ ], performers status (trainee 22.9% vs expert:23.6%,  $p = 0.683$ ), though was higher among males (29.9% vs 19.8%,  $p < 0.001$ ). Patients with polyps were older ( $61 \pm 10$  vs  $58 \pm 12$  years old,  $p < 0.001$ ).

**Conclusions** In our department, during the last decade, screening endoscopy is more commonly well tolerated and completed among males though bowel preparation is significantly better among female patients. PDR is affected by endoscopy completion, patients' gender but not by the performer experience.

## eP254 GREATER HIGH-QUALITY COLON CLEANSING AND DETECTION OF MALE PATIENTS WITH 5+ ADENOMAS AFTER BOWEL PREPARATION WITH 1 L POLYETHYLENE GLYCOL NER1006 VERSUS ORAL SULFATE SOLUTION

**Authors** Hassan C<sup>1</sup>, Amlani B<sup>1</sup>

**Institute** 1 Sapienza University of Rome, Rome, Italy

**DOI** 10.1055/s-0041-1724750

**Citation:** Hassan C, Amlani B. eP254 GREATER HIGH-QUALITY COLON CLEANSING AND DETECTION OF MALE PATIENTS WITH 5+ ADENOMAS AFTER BOWEL PREPARATION WITH 1 L POLYETHYLENE GLYCOL NER1006 VERSUS ORAL SULFATE SOLUTION. *Endoscopy* 2021; 53: S181.

**Aims** Men have more cleansing failures, colorectal adenomas and colorectal cancer than women. For patients with five or more adenomas, clinical guidelines recommend a 3-year surveillance period<sup>1, 2</sup>. We analysed whether bowel preparation with 1 L polyethylene glycol NER1006 can deliver more high-quality cleansing and enable endoscopists to detect more males with adenomas and more adenomas per male patient versus oral sulfate solution (OSS).

**Methods** This analysis of overnight split-dosing with NER1006 versus OSS in the phase 3 clinical trial NOCT3 included male patients with polyp and adenoma counts in the overall and right colon. Cleansing was assessed strictly by treatment-blinded central readers using the validated Harefield Cleansing Scale (HCS) on readable colonoscopy videos. Comparative assessments, per treatment, were: Patients with HCS Grade A (HCSA) or 5+ adenomas (ADR5+), high-quality cleansed colon segments (HCS score 3-4; five segments per patient) per treatment group, and the mean overall number of adenomas per adenoma-positive patient (MAP+). Statistical comparisons used the 1-sided t-test.

**Results** Most male patients with lesion counts also had full HCS scoring (281/274; NER1006: 132/129 and OSS: 149/145). More males achieved HCSA and ADR5+ with NER1006 versus OSS (18.6% [24/129] versus 9.7% [14/145];  $P = 0.016$  and 5.3% [7/132] versus 1.3% [2/149];  $P = 0.030$ ). More segments with HCS 3-4 were attained with NER1006 versus OSS (47.1% [304/645] versus 39.9% [289/725];  $P = 0.003$ ). NER1006 also showed a greater MAP+ than OSS (mean (95% confidence interval) 3.22 (1.79, 4.66) versus 1.84 (1.51, 2.18);  $P = 0.020$ ).

**Conclusions** In all adult male patients, bowel preparation with NER1006 attained more high-quality cleansing success and enabled detection of more patients with at least five adenomas per patient, than OSS. NER1006 also enabled detection of more adenomas per adenoma-positive patient.

**References** [1] *Endoscopy*. 2020 Aug; 52(8): 687-700.

[2] *Gastroenterology*. 2020 Mar; 158(4):1131-1153.e5.

[3] *Gastrointest Endosc*. 2018 Mar; 87(3): 677-687.e3.

## eP256 EPIDEMIOLOGICAL AND ANATOMO-CLINICAL ASPECTS OF INFLAMMATORY BOWEL DISEASE (IBD)

**Authors** Sanogo SD<sup>1</sup>, Dicko MY<sup>2</sup>, Doumbia K<sup>2</sup>, Soumaré G<sup>1</sup>, Sow H<sup>3</sup>, Tounkara MS<sup>2</sup>, Katilé D<sup>2</sup>, Mallé O<sup>2</sup>, Kondé A<sup>2</sup>, Maiga A<sup>2</sup>, Guindo H<sup>2</sup>, Diarra M<sup>2</sup>, Kamaté B<sup>4</sup>, Konaté A<sup>2</sup>, Sanogo B<sup>2</sup>, Maiga MY<sup>2</sup>

**Institute** 1 Teaching Hospital Point G, Hepatogastroenterology, Bamako, Mali; 2 Teaching Hospital Gabriel Touré, Hepatogastroenterology, Bamako, Mali; 3 Faculty of Medicine and Odontostomatology, Hepatogastroenterology, Bamako, Mali; 4 Teaching Hospital Point G, Anatomopathology, Bamako, Mali  
**DOI** 10.1055/s-0041-1724751

**Citation:** Sanogo SD, Dicko MY, Doumbia K et al. eP256 EPIDEMIOLOGICAL AND ANATOMO-CLINICAL ASPECTS OF INFLAMMATORY BOWEL DISEASE (IBD). *Endoscopy* 2021; 53: 000

**Aims** The aim of our study was to describe the epidemiological and anatomoclinic aspects of chronic inflammatory bowel disease (IBD) in Bamako/MALI

**Methods** It was a descriptive and analytical study retrospective study from January 2016 to December 2018, a period of 3 years. The study population consisted of all cases of inflammatory bowel disease confirmed on biopsies or colic resection. All cases of histologically confirmed IBD during the study period were included. The data were collected from the anatomo-pathological registry and histopathological reports, and then carried on an individual fact sheet. Their entry and analysis were carried out on the SPSS22 software. The texts were entered using Word 2016 software. The tables and graphs were made using Excel 2016 software. The statistical test used was Fisher's exact test with a  $p < 0.05$  meaning threshold.

**Results** We have 61.26% of cases of IBD digestive pathologies. The average age was  $48.2 \pm 18.43$  years with extremes of 10 and 89 years. The sex ratio was 0.79. Ulcerative colitis was the most represented with a population of 22 cases, a rate of 37.3%. Housewives were the most represented with a rate of 49.2%. Chronic diarrhea was the most represented clinical information with 17 cases, a rate of 45.9% followed by rectoragia in 15 cases or 40.5%. Ulcerative colitis was the most represented with a population of 22 cases, a rate of 37.3% followed by CHRON disease with a population of 7 cases or a rate of 11.9%.

**Conclusions** IBD are rare in Mali. Our study has restored a female predominance. The most common histological type was ulcerative colitis with 22 cases. Clinical manifestations were chronic diarrhea. They still require monitoring

## eP257 ANTI-TUMOR NECROSIS FACTOR DRUG RESPONSE IN CHRONIC INFLAMMATORY BOWEL DISEASE AND INFLUENCING FACTORS

**Authors** Laabidi S<sup>1</sup>, Bizid S<sup>1</sup>, Ben Mahmoud A<sup>2</sup>, Mohamed G<sup>1</sup>, Ben Abdallah H<sup>1</sup>, Bouali MR<sup>1</sup>, Abdelli MN<sup>1</sup>, Ghazouani E<sup>2</sup>

**Institute** 1 Faculty of Medicine of Tunis/Military Hospital of Tunis, Gastroenterology, Tunis, Tunisia; 2 Faculty of Medicine of Tunis/Military Hospital of Tunis, Immunology, Tunis, Tunisia

DOI 10.1055/s-0041-1724752

**Citation:** Laabidi S, Bizid S, Ben Mahmoud A et al. eP257 ANTI-TUMOR NECROSIS FACTOR DRUG RESPONSE IN CHRONIC INFLAMMATORY BOWEL DISEASE AND INFLUENCING FACTORS. *Endoscopy* 2021; 53: S182.

**Aims** Investigating the predictive factors of good response to anti-TNF agents in patients with inflammatory bowel disease (IBD).

**Methods** A prospective single center study was conducted, including consecutive IBD patients with more than 6 months of follow up on anti-TNF (Infliximab (IFX) or Adalimumab (ADM)) (July 2019-december 2019). Data about patient's demographic characteristics, IBD's features, IFX and ADM serum concentration, Serum concentration of anti-drug antibodies (ADAs) against IFX and ADM as well as response to anti-TNF agents were collected. The response was assessed by clinical and endoscopic scores for each disease: Best's index for Crohn disease (CD) and endoscopic Mayo score for ulcerative colitis (UC).

**Results** Forty-one patients with IBD were included (35 CD (86%) and 6 UC (14%)) (median age: 27 y. (8-49 y.); 23 males). Mean duration of IBD was 10 y. (1-24 y.). Biotherapy had been prescribed after a median delay of 34 mo. (8-96 mo.) from the date of diagnosis of the IBD. Thirty three patients (80%) were taking an immunomodulator drug. Twenty six patients (63%) were responders to anti-TNF agents. The response was significantly better in case of absence of family history of IBD ( $p < 0.001$ ), negative ADAs ( $p < 0.001$ ), absence of a switch ( $p = 0.014$ ), IFX serum concentration  $\geq 1.09$  mg/l ( $p < 0.001$ ), ADM serum concentration  $\geq 4.17$  mg/l ( $p > 0.001$ ) and serum C-reactive protein (CRP)  $< 8$  mg/l ( $P < 0.001$ ). Multivariate analysis revealed that negative CRP associated with anti-TNF serum concentration within therapeutic range (component  $> 0.5$ ) and negative ADAs associated with absence of a switch (component  $> 0.5$ ) were independent predictors of good response.

**Conclusions** The association between negative CRP and anti-TNF serum concentration within therapeutic range, as well as negative ADAs with absence of switch were independent predictors of good response to anti-TNF agents.

## eP258 CLINICAL AND ENDOSCOPIC PROFILE OF INFLAMMATORY BOWEL DISEASE IN A TERTIARY CARE HOSPITAL IN INDIA

**Authors** Rithesh GR<sup>1</sup>, Deepak S<sup>1</sup>, Aradya H<sup>1</sup>, Nandeesh H<sup>1</sup>, Vijay K<sup>1</sup>

**Institute** 1 JSS Academy of Higher Education and Research, Gastroenterology and Hepatology, Mysore, India

DOI 10.1055/s-0041-1724753

**Citation:** Rithesh GR, Deepak S, Aradya H et al. eP258 CLINICAL AND ENDOSCOPIC PROFILE OF INFLAMMATORY BOWEL DISEASE IN A TERTIARY CARE HOSPITAL IN INDIA. *Endoscopy* 2021; 53: S182.

**Aims** We aim to study the clinical profile of Inflammatory bowel disease patients in a tertiary care hospital of India.

**Methods** We retrospectively analysed the clinical profiles of IBD patients who had presented to Department of Gastroenterology over a period of four years from January 2015 to January 2019. Demographic profile, clinical and endoscopic findings along with management and complications were taken into consideration.

**Results** Of the 143 patients, there were 126(88.1%) patients with ulcerative colitis (UC), 6(4.2%) with Crohn's disease (CD) and 11(7.7%) with Inflammatory bowel disease unclassified (IBDU). Chronic diarrhoea (77.8%) and blood in stools (75.4%) were common in UC, where as abdominal pain (50%) was common in CD. E2 (57.1%) was more common in UC, there were equal number of L2 (50%) and L3 (50%) in CD. Left sided colon involvement (81.8%) was common in IBDU. Extra intestinal manifestations were noted in CD (66.6%), IBDU (54.5%) and UC (53.3%). Most of the patients had moderate disease activity and responded well to pharmacotherapy.

**Conclusions** In our study, we found that IBD was common in rural population of India and UC was more common than CD.

► **Table 1** Disease related complications and management during the course of inflammatory bowel disease.

Parameters	Total	Ulcerative colitis	Crohns disease	IBDU
Non-compliance to medications	6.29%	7.1%	0	0
Disease flare	16.7%	15.1%	33.3%	27.3%
	1.39%	1.58%	0	0

## eP259 ASSESSMENT OF THE SEVERITY OF ENDOSCOPIC LESIONS IN ULCERATIVE COLITIS: ENDOSCOPIST'S EVALUATION VERSUS ULCERATIVE COLITIS ENDOSCOPIC INDEX SCORE

**Authors** Hammami A<sup>1</sup>, Hassine A<sup>1</sup>, Zinelabidine F<sup>1</sup>, Ben Ameer W<sup>1</sup>, Dahmani W<sup>1</sup>, Elleuch N<sup>1</sup>, Braham A<sup>1</sup>, Ajmi S<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksiam M<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute** 1 University of Sousse, Faculty of Medicine of Sousse, Gastroenterology, Sousse, Tunisia

DOI 10.1055/s-0041-1724754

**Citation:** Hammami A, Hassine A, Zinelabidine F et al. eP259 ASSESSMENT OF THE SEVERITY OF ENDOSCOPIC LESIONS IN ULCERATIVE COLITIS: ENDOSCOPIST'S EVALUATION VERSUS ULCERATIVE COLITIS ENDOSCOPIC INDEX SCORE. *Endoscopy* 2021; 53: S182.

**Aims** The aim of this study was to explore the interobserver variation in the assessment of endoscopic lesions in Ulcerative colitis (UC) and to compare it with the UC endoscopic index of severity (UCEIS).

**Methods** This is a retrospective study performed in University hospital center of Sahloul in Sousse between January 2017 and December 2018. All patients with UC who had a colonoscopy were included. The UCEIS was calculated and compared to endoscopist's assessment. The range in the UCEIS scores is 0 to 8 which was stratified into four grades: remission (0–1); mild (2–4); moderate (5–6); and severe (7–8).

**Results** A total of eighty-three low digestive endoscopies were performed to 63 patients during the follow-up. The average age of included patients was 42,5 years [15-75 years] with sex ratio of 0,89. The UC was categorized as pancolitis in two third of cases. The indication of colonoscopy was: a new flare of UC in 63,9%, a control before the restoration of *intestinal continuity* in 18,1%, *endoscopic screening* in 9,6% and *endoscopic control after an acute severe flare of UC* in 8,4% of cases. Among 63 colonoscopy findings with UCEIS  $\geq 6$ , 65% were categorized by endoscopists as moderate attack and 22,2% as severe attack of UC. Furthermore, with UCEIS = 8, endoscopists judged endoscopic lesions as moderate in almost the half and as severe lesions in 25% of colonoscopic explorations. For a UCEIS  $\leq 3$ , 76,9% of endoscopic lesions were described as mild.

**Conclusions** Our study showed that endoscopist's assessment of endoscopic lesions was not usually accurate. UCEIS score is a useful instrument for evaluating the severity of endoscopic lesions in UC and for avoiding interobserver variation.

## eP260 PSEUDOPOLYPS IN INFLAMMATORY BOWEL DISEASE: COMPLICATIONS AND DEVELOPING-ASSOCIATED FACTORS

**Authors** Ghribi M<sup>1</sup>, Laabidi S<sup>1</sup>, Bouchabou B<sup>1</sup>, Bougassas W<sup>1</sup>, Ben Nejma H<sup>1</sup>, Ennaifer R<sup>1</sup>

**Institute** 1 Mongi Slim Hospital, Gastroenterology, Marsa, Tunisia  
DOI 10.1055/s-0041-1724755

**Citation:** Ghribi M, Laabidi S, Bouchabou B et al. eP260 PSEUDOPOLYPS IN INFLAMMATORY BOWEL DISEASE: COMPLICATIONS AND DEVELOPING-ASSOCIATED FACTORS. *Endoscopy* 2021; 53: S183.

**Aims** Pseudopolyp (PP) are considered as indicators of previous episodes of severe inflammation. The reasons that a specific group of inflammatory bowel disease (IBD) patients develop PP remain unclear. Our study aimed at describing the characteristics of patients with PP and at investigating the associated factors of their occurrence as well as their possible complications.

**Methods** A retrospective single-center study was conducted, including consecutive patients with IBD from 2011 to 2020. Patients with isolated ileal Crohn's disease (CD) or with operated colon were not eligible for the study. Data about demographic characteristics, severity, and extension of the underlying IBD, endoscopic and histological features of PP were collected. Results were analyzed with SPSS22.

**Results** Sixty patients were included (median age: 36.5y. (14-71y.); 31 females and 29 males). The underlying disease was ulcerative colitis (UC) in 52.5% of cases and CD in 74.5%. Twenty seven patients (45%) developed PP after a median delay of 48 mo. (0-391 mo.) from the date of diagnosis of the IBD. PP were complicated in 36% of cases by: iron deficiency anemia, bleeding, obstruction and protein-losing enteropathy in 7, 4, 4 and 3 patients respectively. The PP were mainly located in the left colon (44.4%). They were disseminated in the whole colon in 33.3% and confined in the rectosigmoid in 33% of cases respectively. The majority of PP (70%) were sessile with an inflammatory mucosal surface. The medium size of PP was 5.5 mm (2-30mm). Giant filiform PP were seen in 22.2% of cases. Histology revealed acute and chronic inflammation similar to the neighboring areas of the colon in all cases.

Dysplasia features were noted in three cases of biopsied specimens from non suspected polyps. Prevalence of PP is alike in both sexes ( $p=0.44$ ). The occurrence of PP was significantly higher on an underlying UC ( $p=0.018$ ), with a severe course ( $p=0.017$ ). Neither the extent nor the duration of IBD did significantly influence the incidence of PP.

**Conclusions** The incidence of PP is relatively high in IBD patients. They were symptomatic in a third of patients. A severe UC is likely the most associated condition to the presence of PP. Dysplasia was exceptional.

## eP261 THE ACUTE EFFECT OF BIOLOGICAL AGENTS USED IN INFLAMMATORY BOWEL DISEASE ON ECG PARAMETERS

**Authors** Çavuş B<sup>1</sup>, Çiftcibaşı Örmeci A<sup>1</sup>, Kaya D<sup>1</sup>, Alizade N<sup>2</sup>, Yakut A<sup>1</sup>, İmanov Z<sup>1</sup>, İV Şenkal<sup>1</sup>, Çevik E<sup>3</sup>, Atıcı A<sup>3</sup>, Demir K<sup>1</sup>, Beşşik F<sup>1</sup>, Kaymakoğlu S<sup>1</sup>, Akyuz F<sup>1</sup>

**Institute** 1 İstanbul Üniversitesi İstanbul Tıp Fakültesi, Gastroenterology, İstanbul, Turkey; 2 İstanbul Üniversitesi İstanbul Tıp Fakültesi, Internal Medicine, İstanbul, Turkey; 3 İstanbul Üniversitesi İstanbul Tıp Fakültesi, Cardiology, İstanbul, Turkey

DOI 10.1055/s-0041-1724756

**Citation:** Çavuş B, Çiftcibaşı Örmeci A, Kaya D et al. eP261 THE ACUTE EFFECT OF BIOLOGICAL AGENTS USED IN INFLAMMATORY BOWEL DISEASE ON ECG PARAMETERS. *Endoscopy* 2021; 53: S183.

**Aims** Ulcerative colitis and Crohn's disease are chronic inflammatory bowel diseases. The effect of inflammation on atrial and ventricular conduction defects is known, however, different results have been obtained in many studies on the effectiveness of anti TNFs and biological agents on cardiac conduction. We aimed to evaluate the effects of biological agents on atrial and ventricular conduction in IBD through ECG parameters.

**Methods** A total of 99 IBDs with UC (38 patients) and Crohn's disease (61 patients) were included in this prospective study. Patients followed under infliximab or vedolizumab therapy for the treatment of IBD were included. Twelve-lead ECGs were obtained for all participants and ECG parameters QT, QTc, Tpe, Tpe/QT, Tpe/QTc, QRS, Pmax, Pmin, PWD were evaluated before and after the infusion for all patients.

### Results

A total of 99 IBDs from 61 men (61.6%) were included in our study. Mean age of the patients was 46.48 +/- 23.8 years. The mean age of the disease was 17.5 +/- 13.17 years. 90.6% of the patients were using infliximab and 9.4% vedolizumab. The mean duration of biological agent use was 44.77 +/- 34.75 months. 12.1% of the patients had a history of using a different biological agent before. When the laboratory findings of the patients were examined, calcium was 9.41 +/- 0.4mg/dl, and the CRP level was 8.23 +/- 13.6 mg/dl. It was found that the QT, QTc, Tpe, Tpe/QT, Tpe/QTc/QTd values of the patients, evaluated before and after the infusion, were statistically significantly prolonged after the infusion (► **Table 1**). When this difference in ECG parameters was examined in terms of gender, age, IBD type and the effect of immunosuppressives used, it was not found statistically significant.

**Conclusions** It was found that QT, QTc, Tpe, Tpe/QT, Tpe/QTc/QTd parameters, which are considered as ventricular repolarization indicators, were prolonged after the application of antiTNF and vedolizumab, however, there was no statistically significant difference in Pmax, Pmin, PWD, which are accepted as atrial conduction parameters.

► **Tab. 1**

N	Mean	Std.Dev.	p
QT	Before infusion		<.001
n	99		



(Continued).

N	Mean	Std.Dev.	P
Mean	375,2525		
Std.Dev	27,70115		
	<b>After infusion</b>		
n	99		
Mean	411,3434		
Std.Dev	28,13893		
QTd	<b>Before infusion</b>		<b>,027</b>
n	99		
Mean	22,5657		
Std.Dev	13,36471		
	<b>After infusion</b>		
n	99		
Mean	27,4949		
Std.Dev	18,04946		
Tpe/QT	<b>Before infusion</b>		<b>&lt;,001</b>
n	99		
Mean	,2395		
Std.Dev	,02769		
	<b>After infusion</b>		
n	99		
Mean	,2654		
Std.Dev	,03233		
Tpe/QTc	<b>Before infusion</b>		<b>&lt;,001</b>
n	99		
Mean	,2112		
Std.Dev	,02526		
	<b>After infusion</b>		
n	99		
Mean	,2468		
Std.Dev	,02941		

## eP262 DIAGNOSIS AND MANAGEMENT OF MICROSCOPIC COLITIS: EXPERIENCE OF A TUNISIAN CENTER

**Authors** Harbi R<sup>1</sup>, Hammami A<sup>1</sup>, Ben Ameer W<sup>1</sup>, Dahmani W<sup>1</sup>, Elleuch N<sup>1</sup>, Ajmi S<sup>1</sup>, Brahem A<sup>1</sup>, Ben Slama A<sup>1</sup>, Ksaa M<sup>1</sup>, Jaziri H<sup>1</sup>, Jmaa A<sup>1</sup>

**Institute** 1 University of Medicine Tunisia, Gastroenterology, Sousse, Tunisia  
DOI 10.1055/s-0041-1724757

**Citation:** Harbi R, Hammami A, Ben Ameer W et al. eP262 DIAGNOSIS AND MANAGEMENT OF MICROSCOPIC COLITIS: EXPERIENCE OF A TUNISIAN CENTER. Endoscopy 2021; 53: S183.

**Aims** Microscopic colitis(MC),which is comprised of lymphocytic colitis and collagenous colitis,is a clinicopathological diagnosis that is commonly encountered in clinical practice during the evaluation and management of chronic

diarrhea.It is currently recognized as a relatively common cause of diarrhea that is as common as inflammatory bowel disease.

The purpose of this work is to report the epidemiological, clinical, therapeutic, and evolutionary aspects of microscopic colitis in our department.

**Methods** We conducted a retrospective observation study which had included all MC patients between January 2012 and August2017. Data collection was performed from patients' medical records. The diagnosis of cm is retained in the presence of histological lesions, characterized by an increase of intraepithelial lymphocytes in cases of lymphocytic colitis, and a thickening of the subepithelial collagen band in case of collagen colitis.

**Results** The total number of patients involved in this study was12. The mean age was43years [24to73years]. The sex ratio was 0.33. There were 3c ases of collagen colitis (25%) and 9 cases of lymphocytic colitis (75%). Diarrhea was present in all patients, while abdominal pain (66%) and weight loss (66%) were frequently reported. The mean time interval from onset of symptoms to definitive cm diagnosis was 13 months [1to48months]. Biology revealed a biological inflammatory syndrome in 2 patients, anemia in 3 patients and hypoalbuminemia in one patient. 3 patients were taking a variety of medications that appeared to be associated with MC (proton pump inhibitors in 2 patients and aspirin in one patient). An associated autoimmune disease was found in 2 patients (diabetes mellitus and hypothyroidism n = 1, celiac disease (n = 1). Four patients did not receive treatments due to spontaneous disappearance of diarrhea. Treatment with salicylates was prescribed in the remaining 8 patients.The failure of salicylates was observed in 50% of patients and led us to switch to oral corticosteroids in 3 patients and budesonide in one patient. During follow-up, recurrence of symptoms was observed in 20% of patients after stopping induction therapy, with an average delay of 18 months.

**Conclusions** MC is a benign pathology whose treatment takes into account the severity of the symptoms and its impact on the quality of life of patients. That is why third of our patients were not treated.

## eP263 CORRELATION BETWEEN CLINICAL, ENDOSCOPIC AND HISTOLOGICAL SCORES ACTIVITY IN CROHN'S DISEASE

**Authors** Ben Farhat F<sup>1</sup>, Sabbah M<sup>1</sup>, Bellil N<sup>1</sup>, Dorra T<sup>1</sup>, Bibani N<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute** 1 Habib Thameur Hospital, Gastroenterology, Tunis, Tunisia  
DOI 10.1055/s-0041-1724758

**Citation:** Ben Farhat F, Sabbah M, Bellil N et al. eP263 CORRELATION BETWEEN CLINICAL, ENDOSCOPIC AND HISTOLOGICAL SCORES ACTIVITY IN CROHN'S DISEASE. Endoscopy 2021; 53: S184.

**Aims** Our aim was to evaluate the correlation between clinical, endoscopic and histologic scores activity in Crohn's disease (CD).

**Methods** Thirty patients with CD were included in a prospective study from June to October 2020. Patients with a history of bowel resection were not included. Clinical activity was assessed by Crohn's Disease Activity Index (CDAI). All of the patients were submitted an ileocolonoscopy with biopsy and classified by Crohn's Disease Endoscopic Index Score (CDEIS). Histological activity was assessed by Global Histological Activity Score (GHAS). Remission was considered with CDAI <150; CDEIS ≤2 and GHAS ≤4.

**Results** Thirty patients were included in our study. Mean age was 40,9 years [18.68] and sex ratio (M/W) was 1.8.Clinical remission was established in 63%, however, only 50% had mucosal healing (MH) and 30% histological healing. Correlation between endoscopic and histological measures was significant ( $\sigma = 0.46$ ,  $p = 0,04$ ). The concordance remission agreement between CDEIS and GHAS was moderate with ( $\kappa$ ) = 0.44. The correlation between CDAI and CDEIS was not significant ( $p=0,13$ ). The greatest disparity arose when clinical CDAI was compared with GHAS ( $\sigma = 0.23$ ,  $p = 0,37$ ), ( $\kappa$ ) = 0.21.

**Conclusions** According to our study, CDEIS correlates well with histological GHAS in CD, however, there is moderate concordance between both. CDAI score had low correlation and concordance with CDEIS and GHAS. In this sample, patients without symptoms had low MH and histological healing.

## eP264 RESPONSE TO BIOLOGICS IN IBD PATIENTS ASSESSED BY COMPUTERIZED IMAGE ANALYSIS OF PROBE BASED CONFOCAL LASER ENDOMICROSCOPY WITH MOLECULAR LABELING

**Authors** [Iacucci M<sup>1</sup>](#), [Grisan E<sup>2</sup>](#), [Labarile N<sup>1</sup>](#), [Nardone OM<sup>1</sup>](#), [Smith SCL<sup>1</sup>](#), [Jeffery L<sup>1</sup>](#), [Cannatelli R<sup>1</sup>](#), [Ghosh S<sup>1</sup>](#), [Buda A<sup>3</sup>](#)

**Institute** 1 Institute Translational of Medicine, Institute of Immunology and Immunotherapy and NIHR Birmingham Biomedical Research Centre, University Hospitals NHS Foundation Trust and University of Birmingham, Birmingham, United Kingdom; 2 School of Engineering, London South Bank University, London, United Kingdom; 3 S. Maria del Prato Hospital, Department of Gastrointestinal Oncological Surgery, Feltre, Italy

**DOI** [10.1055/s-0041-1724759](#)

**Citation:** Iacucci M, Grisan E, Labarile N et al. eP264 RESPONSE TO BIOLOGICS IN IBD PATIENTS ASSESSED BY COMPUTERIZED IMAGE ANALYSIS OF PROBE BASED CONFOCAL LASER ENDOMICROSCOPY WITH MOLECULAR LABELING. *Endoscopy* 2021; 53: S184.

**Aims** The increase in therapeutic choices in inflammatory bowel diseases (IBD) imposed the identification of personalized therapeutic strategy. Confocal laser endomicroscopy (CLE) is a new endoscopic tool developed to obtain virtual in vivo histology. This study aimed to identify CLE *in-vivo* and *ex-vivo* features predictive of response for patients starting biologics.

**Methods** We performed a prospective observational study: 29 patients (14 ulcerative colitis-UC and 15 Crohn's Disease-CD) underwent CLE before and after biological treatment. CLE parameters analyzed were: crypt distribution, crypt area (CA), eccentricity, diameter, inter-cryptic distance (ICD), vessel tortuosity (VT), fluorescein leakage through the colonic mucosa (FLCM) and *ex-vivo* binding activity of fluorescein-labelled biologics on biopsies. Mosaicism of CLE images were analyzed using a dedicated software algorithm (CellvizioViewer, Mauna-Kea-Technologies, Paris-France). A Graphical User Interface was designed for a semiautomated analysis.

**Results** After treatment, VT changed in overall population; FLCM decreased in UC patients, whilst CA, eccentricity and ICD in CD patients ( $p < 0.05$ ). FLCM was the best parameter for predicting responsiveness (AUROC 83 %, accuracy 83 %, PPV 94 % and NPV 57 [on2] %). FLCM and ICD were the best discriminants in responders Vs non-responders in UC (AUROC85 %, accuracy 85 %, PPV 100 % and NPV 71 %); whilst VT, CA and ICD in CD (AUROC 95 %-86 %-83 %; accuracy 90 %-90 %-88 %; PPV 100 %-100 %-86 %; and NPV 75 %-75 %-100 %, respectively). UC patients, but not CD patients, had higher basal fluorescent intensity signals with a significant reduction after treatment ( $p < 0.05$ ). An increased mucosal binding to the fluorescent labelled biological agent was associated to a higher likelihood of therapy response (AUROC 81 %-64 %, accuracy 77 %-79 %, PPV 100 %-80 %, NPV 63 %-50 % in UC and CD patients respectively).

**Conclusions** FLCM and ICD were the best discriminants of response in UC, while VT, CA and ICD in CD. A higher mucosal binding to a biological agent before treatment was observed in responders UC patients but not in CD patients.

## eP265 RECTAL BAND LIGATION AS AN ALTERNATIVE TREATMENT FOR CHRONIC RADIATION PROCTITIS

**Authors** [Lamonaca L<sup>1</sup>](#), [Auriemma F<sup>1</sup>](#), [Paduano D<sup>1</sup>](#), [Bianchetti M<sup>1</sup>](#), [Maselli R<sup>2</sup>](#), [Galtieri PA<sup>2</sup>](#), [Repici A<sup>2,3</sup>](#), [Mangiavillano B<sup>1,3</sup>](#)

**Institute** 1 Gastrointestinal Endoscopy Unit - Humanitas Mater Domini, Castellanza, Italy; 2 Humanitas Clinical and Research Center IRCCS, Digestive Endoscopy Unit, Division of Gastroenterology, Rozzano, Italy; 3 Humanitas University, Department of Biomedical Sciences, Pieve Emanuele, Italy

**DOI** [10.1055/s-0041-1724760](#)

**Citation:** Lamonaca L, Auriemma F, Paduano D et al. eP265 RECTAL BAND LIGATION AS AN ALTERNATIVE TREATMENT FOR CHRONIC RADIATION PROCTITIS. *Endoscopy* 2021; 53: S185.

**Aims** Chronic radiation proctitis (CRP) occurs in 10-15% of patients undergoing pelvic radiation therapy and frequently manifests with rectal bleeding, requiring blood transfusion. Endoscopic management of more severe and refractory cases of rectal hemorrhage is possible and argon plasma coagulation (APC) is currently recommended as the first-choice treatment although there is evidence of limited efficacy in cases of extensive rectal involvement. Rectal band ligation (RBL) has been shown to be a feasible alternative to APC. Our aim is to describe safety and efficacy of RBL in chronic hemorrhagic radiation proctitis.

**Methods** We analyzed all consecutive patients treated in our center with RBL for severe or recurrent hemorrhagic CRP. Standard protocol included mesalamine enemas for 30 days after RBL. Demographic, clinical and endoscopic aspects were recorded. Success was defined as endoscopic evidence of complete rectal healing and/or absence of bleeding recurrence with no need for further treatment.

**Results** We identified 10 patients (7 males, mean age 75.6 years). Median length of affected rectum from the anal verge was 4.5 cm (range 3-12) and mean surface area involved was 89 %. Eight patients (80 %) were naïve of endoscopic treatment, while 2 had undergone APC without any beneficial. Median follow-up was 136.5 days (range 21-979). Success was achieved in 100 % of patients after a mean number of 1.8 RBL sessions. A mean number of 4.7 bands were released in the first session while a mean of 3.1 and 2 bands were respectively placed in the second and third session. As for adverse events, only 1 patient reported tenesmus and pelvic pain after the procedure, with spontaneous resolution after 30 days.

**Conclusions** RBL is a safe and effective therapeutic modality for chronic hemorrhagic CRP. It could be considered a valid first-line option in case of extensive rectal involvement as well as a viable rescue treatment after failed APC.

## eP266 INTEREST OF COLONOSCOPY IN PATIENTS WITH RECTORRHAGIA: A SINGLE-CENTER RETROSPECTIVE STUDY

**Authors** [Harbi R<sup>1</sup>](#), [Mrabet S<sup>1</sup>](#), [Zaouga S<sup>1</sup>](#), [Akkari I<sup>1</sup>](#), [Ben Jazia E<sup>1</sup>](#)

**Institute** 1 University of Medicine Tunisia, Gastroenterology, Sousse, Tunisia

**DOI** [10.1055/s-0041-1724761](#)

**Citation:** Harbi R, Mrabet S, Zaouga S et al. eP266 INTEREST OF COLONOSCOPY IN PATIENTS WITH RECTORRHAGIA: A SINGLE-CENTER RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S185.

**Aims** Lower gastrointestinal bleeding is a frequent reason for consultation in gastroenterology and emergency. The aetiologies are multiple, varying from simple internal hemorrhoids to the colorectal neoplastic process. Colonoscopy plays an essential role in the etiological diagnosis and treatment of rectal bleeding.

The aim of our study is to clarify the value of colonoscopy in the aetiological diagnosis and management of lower gastrointestinal bleeding.

**Methods** This is a retrospective descriptive study over a period of 3years, between 2017 and 2020, including 156 patients who underwent colonoscopy for lower gastrointestinal bleeding. The patient's history and the presence or absence of signs associated with rectorrhagia were noted.

**Results** The average age of our patients was 53years with extremes ranging from 19years to 90years, there were 91men and 65women with a sex ratio M/F=1.4.

Four patients had a familial history of colorectal cancer. In the personal history, 4patients(2,6%)had a history of colorectal cancer and 4other patients had a history of other cancers. Rectorrhagia was present alone in 68,6%(n = 107) while the rest of the patients had other symptoms associated like constipation (n = 26), diarrhea(n = 6), iron deficiency anemia(n = 4), deterioration of general condition(n = 8) or abdominal pain(n = 12).

Colonoscopy was strictly normal in 24.4%of cases(n = 38)and showed abnormalities like internal hemorrhoids in 39.1%(n = 61), anal fissure in 17,3 % (n = 27), colorectal polyps in 19.2%(n = 30), colorectal cancer in 7.1%(n = 11),

colonic diverticulosis in 5.2%(n=8), erythematous proctitis in 3.8%(n=6), endoscopic lesions of chronic inflammatory bowel disease in 1,3%(n=2), rectal varices in 1,3%(n=2), colonic angiodysplasia in 2.6%(n=4) and solitary rectal ulcer in 0.6%of cases(n=1).

In our series, 13%of patients(n=21) benefited from endoscopic therapeutic procedures, consisting on polypectomy with forceps resection, diathermic loop or mucosectomy.

**Conclusions** Colonoscopy retains an essential place for both the etiological diagnosis and the therapeutic management of lower digestive bleeding. In our series, the endoscopic aspects found were clearly dominated by internal hemorrhoids, followed by colorectal polyps, and colorectal cancer.

## eP267 RECTORRHAGIA ON KNOWN HEMORRHOIDAL PATHOLOGY IN PATIENTS AGED 45 AND ABOVE: INTEREST OF COLONOSCOPY

**Authors** Harbi R<sup>1</sup>, Mrabet S<sup>1</sup>, Zaouga S<sup>1</sup>, Akkari I<sup>1</sup>, Ben Jazia E<sup>1</sup>

**Institute 1** University of Medecine Tunisia, Gastroenterology, Sousse, Tunisia

**DOI** 10.1055/s-0041-1724762

**Citation:** Harbi R, Mrabet S, Zaouga S et al. eP267 RECTORRHAGIA ON KNOWN HEMORRHOIDAL PATHOLOGY IN PATIENTS AGED 45 AND ABOVE: INTEREST OF COLONOSCOPY. *Endoscopy* 2021; 53: S186.

**Aims** Rectorrhagia is the usual clinical expression of hemorrhoidal disease and it is a frequent reason for consultation in gastroenterology. Classically, rectorrhagia requires endoscopic exploration mainly in the elderly patients in front of the increased risk of colorectal cancer and hemorrhoidal etiology remains an elimination diagnosis.

The aim of this study is to determine the necessity of performing a total colonoscopy in these patients aged 45 years and above who have already undergone a proctological examination and to evaluate its diagnostic performance in order to evaluate the relevance of this indication.

**Methods** This is a retrospective descriptive study carried out between January 2017 and July 2019, including 60 patients aged 45 and above who underwent colonoscopy for lower gastrointestinal hemorrhage on hemorrhoidal pathology. Data collected and analyzed were age, gender, and colonoscopy results.

**Results** The average age was 59 years old [45 years - 90 years]. We noted a male predominance with a sex ratio M/F of 1.4. All the patients had consulted for rectorrhagia. Associated symptoms were proctalgia 9% of cases, constipation 19,2% of cases and anemia in one case (1,7%). Internal hemorrhoids were found in 76,6%: 1st degree in 6,5%, 2nd degree in 73,9% and 3rd degree in 17,4%, 4th degree in 2,2%. Anal fissures were found in 30% of cases. The lesions found were: polyps in 22,5%, colorectal cancer in 8,3%, diverticulosis in 6,7%, angiodysplasia in 3,3%, solitary rectal ulcer in 0,8%. The diagnostic yield of colonoscopy was 41,6%.

**Conclusions** In our series, the diagnostic contribution of colonoscopy in patients presenting with rectorrhagia and external hemorrhoids was 41,6%. Thus colonoscopy has its place in the elderly followed for a hemorrhoidal pathology. the danger is to ignore a serious affection, in particular colorectal cancer, because the earlier it is detected, the more effective the treatments are.

## eP268 CONTRIBUTION OF COLONOSCOPY IN PATIENTS WITH MELENA AND NORMAL UPPER GASTRO-INTESTINAL ENDOSCOPY

**Authors** Harbi R<sup>1</sup>, Mrabet S<sup>1</sup>, Zaouga S<sup>1</sup>, Akkari I<sup>1</sup>, Ben Jazia E<sup>1</sup>

**Institute 1** University of Medecine Tunisia, Gastroenerology, Sousse, Tunisia

**DOI** 10.1055/s-0041-1724763

**Citation:** Harbi R, Mrabet S, Zaouga S et al. eP268 CONTRIBUTION OF COLONOSCOPY IN PATIENTS WITH MELENA AND NORMAL UPPER GASTRO-INTESTINAL ENDOSCOPY. *Endoscopy* 2021; 53: S186.

**Aims** A melena is the release through the anus of black, fetid digested blood, the origin of the bleeding is located upstream of the right colon the aetiologies are diverse ranging from a simple gastric ulcer to a tumor lesions. The first-line examination for melena is upper gastro-intestinal endoscopy (UGE), but when this is normal, other endoscopic explorations are necessary, including total colonoscopy.

The objective of our study is to determine the value of colonoscopy in gastro-intestinal bleeding externalized in the form of melena with normal UGE.

**Methods** This is a retrospective descriptive study over a period of 2 years, between 2018 and 2019, including 25 patients who underwent colonoscopy for melena with a normal esogastroduodenal fibroscopy.

The patient's history and the presence or absence of signs associated with melena were noted.

**Results** The average age of our patients was 65,3years with extremes ranging from 45years to 86years, there were 13men and 12women with a sex ratio M/F=1.08.

One patient had a familial history of colorectal cancer, 24patients(96%) had no personal history while only 1 patient had a viral B cirrhosis. Melena was present alone in 64% while the rest of the patients had other symptoms associated like constipation(n=1), iron deficiency anemia(n=5), deterioration of general condition(n=2) or abdominal pain(n=1).

Colonoscopy was strictly normal in 40% of cases(n=10) or showed abnormalities like colorectal polyps in 20%(n=5), colonic diverticulosis in 28%(n=7), colonic angiodysplasia in 20%(n=5) colorectal cancer in 4%(n=1) that was located in the right colon, histologic type of the tumor was moderately differentiated adenocarcinoma.

**Conclusions** Melena is a diagnostic emergency, when esogastroduodenal endoscopy is normal, colonoscopy remains the second-line examination for the aetiological diagnosis.

In our series, the endoscopic aspects found were clearly dominated by colonic diverticulosis, followed by colorectal polyps, and colonic angiodysplasia.

## eP269 RISK FACTORS ANALYSIS FOR LONG-TERM MORTALITY IN PATIENTS HOSPITALIZED FOR ACUTE LOWER GASTROINTESTINAL BLEEDING

**Authors** Frisancho E<sup>1</sup>, Lovet LL<sup>1</sup>, Brunet E<sup>1</sup>, Garcia-Iglesias P<sup>1</sup>, García-Sague B<sup>1</sup>, Melcarne L<sup>1</sup>, Martínez-Bauer E<sup>2</sup>

**Institute 1** Hospital Universitari Parc Tauli, Gastroenterology, Sabadell, Spain; 2 Hospital Universitari Parc Tauli, Endoscopy, Sabadell, Spain

**DOI** 10.1055/s-0041-1724764

**Citation:** Frisancho E, Lovet LL, Brunet E et al. eP269 RISK FACTORS ANALYSIS FOR LONG-TERM MORTALITY IN PATIENTS HOSPITALIZED FOR ACUTE LOWER GASTROINTESTINAL BLEEDING. *Endoscopy* 2021; 53: S186.

**Aims** The aim of this study was to identify the independent risk factors that predict long-term mortality after hospitalization for LGB.

**Methods** Patients with LGB were identified using the International Classification of Diseases (9th Revision) and Clinical Modification codes for admission diagnosis. A retrospective review of medical records and long-term follow-up were performed between January 2013 to December 2017. The follow-up was completed on January 1, 2020. Univariable and multivariable Cox regressions were performed to discover predictors of long-term mortality. For all analyses, we considered a P value lower than 0.05 was considered to be significant. The statistical analyses were performed in IBM SPSS version 22 (IBM Corp., Armonk, NY, USA).

**Results** A total of 465 consecutive patients admitted with LGB were identified. Median age was 76.5 years (range 23-97), 309 (66,5%) of patients were older than 70 years, 239 (51,4%) were men. Six (1,3%) died, 39 (8,4%) presented a rebleeding, 20 (4,3%) needed readmission, 124 (26,7%) needed transfusion, 62 (13,3%) needed treatment (58 endoscopic, 4 vascular embolization, 0 surgery). The most common cause of LGB was diverticular bleeding 133 (28.6%).

The average follow-up was 7 years. One-year/two and four years mortality was 7% (33/465), 13% (60/465) and 24% (102/465) respectively. The main cause of death was cardiovascular disorders, followed by neoplastic disease and respiratory disorders. The risk factors independently associated with seven-years mortality included: creatinine value greater  $\geq 2$  mg/dl (Hazard Ratio (HR) 3.4, 95%CI 1.9-6.2,  $P < 0.01$ ), atrial fibrillation (HR 2.1, 95%CI 1.6-2.9,  $P < 0.01$ ), severe bleeding (HR 2.2, 95%CI 1.5-3.1,  $P < 0.01$ ), readmission at 28 days (HR 2.1, 95%CI 1.1-4,  $P = 0.02$ ) and old age ( $\geq 75$  years) (HR 4.8, 95%CI 3.7- 7  $P < 0.01$ ).

**Conclusions** Creatinine value  $\geq 2$ mg/dl, atrial fibrillation, severe bleeding, readmission at 28 days and old age ( $\geq 75$  years) were independent risk factors for long-term mortality in patients with LGB.

## eP270 MICROSCOPIC COLITIS: ENDOSCOPIC PERFORMANCE AND DIAGNOSTIC YIELD

**Authors** Linhares M<sup>1</sup>, Ramos D<sup>1</sup>, Pereira F<sup>1</sup>, Pestana I<sup>1</sup>, Pinto J<sup>1</sup>, Caldeira A<sup>1</sup>, Tristan J<sup>1</sup>, Pereira E<sup>1</sup>, Sousa R<sup>1</sup>, Banhudo A<sup>1</sup>

**Institute** 1 Amato Lusitano Hospital, Gastroenterology, Castelo Branco, Portugal

**DOI** 10.1055/s-0041-1724765

**Citation:** Linhares M, Ramos D, Pereira F et al. eP270 MICROSCOPIC COLITIS: ENDOSCOPIC PERFORMANCE AND DIAGNOSTIC YIELD. *Endoscopy* 2021; 53: S187.

**Aims** Colon biopsies for microscopic colitis (MC) are indicated for patients with chronic diarrhoea. However, there seems to be some discredit on its accomplishment. This can be justified by a subjective perception on a low frequency of MC diagnosed by random biopsies.

This study aims to evaluate the rate of biopsies for the diagnosis of MC and to evaluate their diagnostic yield.

**Methods** Retrospective study that included complete colonoscopies (with/without random biopsies) due to chronic non-bloody diarrhoea, and normal mucosa, between 2013 and 2019. Endoscopic and histological reports were analysed.

**Results** 174 complete colonoscopies were included (62.1% women, mean age  $59.7 \pm 18$  years). Random biopsies were performed in 61.5% ( $n = 107$ ) and ileoscopy in 30.5% ( $n = 53$ ). Biopsies were obtained in all segments in 91.5% ( $n = 97$ ), and in 8.41% ( $n = 9$ ) were not performed on the ascending colon.

There was a prevalence of 12.1% of microscopic colitis ( $n = 13/107$ ; 69.2% men, mean age  $58.69 \pm 14.7$  years). Most patients had biopsies in 2 bottles (left + right) or 4 bottles (4 segments) (38.5% and 30.8%, respectively). All patients had microscopic lymphocytic colitis, and it was diffusely distributed in 76.9% of cases. Sigmoid and transverse were not affected in 3 patients (23.1%). On average, each bottle had 2.8 fragments (range 1-8). Diagnostic performance did not depend on performance or performing physician ( $p > 0.05$ ).

**Conclusions** The performance of random biopsies (61.5%) for microscopic colitis diagnosis was low in this study. The prevalence of MC was not inferior to the one described by literature, but it may be underestimated. Microscopic colitis was prevalent in all ascending colon patients, but in 23.1% it was not extended to distal segments. So, biopsies for the diagnosis of MC may eventually be performed only in the right colon.

## eP271 ENDOSCOPIC FEATURES AND MUCOSAL PATTERNS ASSOCIATED WITH COLLAGENOUS COLITIS

**Authors** Labianca O<sup>1</sup>, Sica M<sup>1</sup>, Zulli C<sup>1</sup>, Maurano A<sup>1</sup>

**Institute** 1 AOU San Giovanni di Dio e Ruggi d'Aragona, Gaetano Fucito Hospital - Digestive Endoscopy Unit, Mercato San Severino, Italy

**DOI** 10.1055/s-0041-1724766

**Citation:** Labianca O, Sica M, Zulli C et al. eP271 ENDOSCOPIC FEATURES AND MUCOSAL PATTERNS ASSOCIATED WITH COLLAGENOUS COLITIS. *Endoscopy* 2021; 53: S187.

**Aims** Collagenous colitis (CC) is a morphological and clinical-pathological entity of microscopic colitis, characterized by secretory-like aqueous chronic diarrhea, mostly without hematochezia. Although there are no mucosal abnormalities, in some cases particular endoscopic features and mucosal patterns may be described. We have evaluated the endoscopic findings in patients diagnosed with CC in our Digestive Endoscopy Unit.

**Methods** We conducted a descriptive and retrospective study that included 228 colonoscopies performed from January 2004 to October 2020 in 213 inpatient and outpatient (78 males and 135 females, mean age 62.7 years) suffering from CC. Colonoscopies report were retrieved, and among the recorded data, we detected alteration of mucosal patterns and endoscopic manifestations which have been associated with CC. According to our experience, we report multiple "mucosal tears" and "scars" following mucosal lacerations as the most frequent finding of textural alteration and mucosal abnormality.

**Results** In the study period, 213 patients were diagnosed with CC. The main indication for colonoscopy was acute or chronic diarrhoea, sometimes associated with weight loss. In our experience, CC is associated with normal colonoscopy (172/228). Endoscopic findings revealed a mild erythema and edema, red spots with increased mucosal nodularity and mucosal tears in the sigmoid and descending colon, and evidence of erythema, congestion, multiple longitudinal mucosal tears and few scars in right colonic segment explored (56/228). Mucosal tears are linear mucosal defects, and together with other types of mucosal breaks (cat-scratch) as a typical characteristic colonoscopic findings in patients with CC, and may have an increased risk of colonic perforation during the colonoscopy procedure.

**Conclusions** A minority of patients with CC, almost 25%, presented endoscopic findings indicative of CC. Knowledge of typical abnormalities and mucosal patterns could help to identify endoscopic features and to target the colonic biopsies to reach the diagnosis.

## eP272 COLONIC MUCOSAL PSEUDOLIPOMATOSIS

**Authors** Sofianidis G<sup>1</sup>, Moschos I<sup>2</sup>, Tikos G<sup>1</sup>, Paikos A<sup>1</sup>, Evagelopoulou K<sup>1</sup>, Paikos D<sup>1</sup>

**Institute** 1 G Genimatas Hospital, Gastroenterology, Thessaloniki, Greece; 2 International Hellenic University, Thessaloniki, Greece

**DOI** 10.1055/s-0041-1724767

**Citation:** Sofianidis G, Moschos I, Tikos G et al. eP272 COLONIC MUCOSAL PSEUDOLIPOMATOSIS. *Endoscopy* 2021; 53: S187.

**Aims** The presentation of a rare case of mucosal pseudolipomatosis of colon, in order to point out the significance of recognizing this benign condition, during colonoscopy.

**Methods** A 51-year old man was referred to our department for endoscopic polypectomy at sigmoid colon, after a sigmoidoscopy that was performed at another health unit. Our colonoscopy revealed numerous diverticula at sigmoid and confluent white plaques (Fig.1.), especially at descending and transverse colon. Smaller plaques were observed, even on ileocecal valve. These plaques were adherent and could not be washed from the mucosa. Multiple biopsies were performed.

**Results** Histopathological examination showed normal colonic mucosa with optically empty vacuoles in the lamina propria and irregular cystic spaces, similar to adipocytes. After immunohistochemistry, these cystic spaces are S100(-) and CD34(-), excluding the case to be adipocytes or stretched lymphatic vessels, respectively.

**Conclusions** Colonic pseudolipomatosis is rare and benign condition. Its pathogenesis is not well-known but could be due to gas invasion or extravasation of lymph into lamina propria, maybe induced by mucosal lesions related to barotrauma or certain colonoscope cleaning solutions. Clinicians and pathologists should be aware of this uncommon lesion for correct diagnosis and appropriate clinical management.



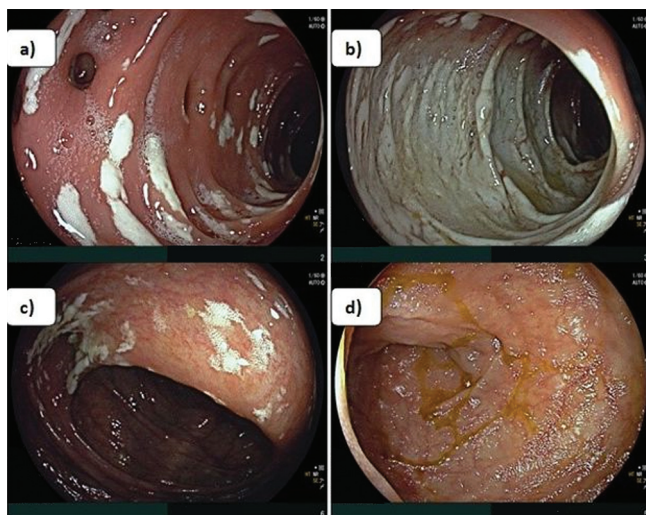


Fig. 1

### eP273V A FREQUENT ETIOLOGY, BUT RARELY SEEN, OF ACUTE DIARRHEA

**Authors** Linhares M<sup>1</sup>, Vilas Boas F<sup>2</sup>, Macedo C<sup>2</sup>

**Institute** 1 Amato Lusitano Hospital, Gastroenterology, Castelo Branco, Portugal; 2 Centro Hospitalar São João, Gastroenterology, Porto, Portugal  
DOI 10.1055/s-0041-1724768

A 63-years-old man submitted to stem cell transplantation in June 2020 was admitted at hospital for pneumonia and respiratory failure. On the first inpatient day, he reported onset of watery diarrhea about 2 days ago, without abdominal pain or fever. Stool specimens analyse were negative for parasites and viruses. The rectosigmoidoscopy evidenced nonspecific findings and histologic samples diagnosed graft versus host disease colitis. The patient was treated with systemic corticosteroids and loperamide and was discharged after clinical respond. Despite acute GVHD is the leading cause of diarrhea after SCT, endoscopic findings are only observed in about one third of cases.

### eP274 LYMPHOCYTIC COLITIS IS THE MOST COMMON CAUSE OF NON-IRRITABLE BOWEL SYNDROME CHRONIC DIARRHEA

**Authors** Abd El Razek M<sup>1</sup>, Maher MM<sup>2</sup>, Amin M<sup>3</sup>, Shabana H<sup>2</sup>

**Institute** 1 Ministry of Health, Internal Medicine, Mansoura, Egypt; 2 Mansoura University, Specialized Medical Hospital, Internal Medicine, Gastroenterology & Hepatology Unit, Mansoura, Egypt; 3 Mansoura University, Clinical Pathology Department, Mansoura, Egypt  
DOI 10.1055/s-0041-1724769

**Citation:** Abd El Razek M, Maher MM, Amin M et al. eP274 LYMPHOCYTIC COLITIS IS THE MOST COMMON CAUSE OF NON-IRRITABLE BOWEL SYNDROME CHRONIC DIARRHEA. *Endoscopy* 2021; 53: S188.

**Aims** To diagnose the causes of non-irritable bowel syndrome chronic diarrhea in patients attending Specialized Medical Hospital, Mansoura University, Egypt. **Methods** Sixty-one patients with non-irritable bowel syndrome chronic diarrhea were included. The following groups of patients were excluded: Known cases of IBD, hyperthyroidism, HIV, irritable bowel syndrome according to Rome IV criteria, chronic laxative abuse, colonic polyps, or colorectal cancer. All included patients were subjected to history taking, physical examination, laboratory investigations including Complete blood count (CBC), INR, ESR, CRP, HBs antigen, HIV antibody, HCV antibody, TSH, liver function tests, fecal calprotectin, stool analysis, culture & sensitivity, Anti-endomysial IgA, total IgA, serum

Chromogranin A, and total IgE. ileo-colonoscopy with ileal and colonic biopsies and histopathologic examination of the samples was done.

**Results** Twenty-seven cases (44.3%) had microscopic colitis, lymphocytic type. The other cases of chronic diarrhea were diagnosed as ulcerative colitis (26.2%), non-specific ileitis (16.4%), eosinophilic colitis (9.8%), tubulovillous adenoma (6.6%), adenocarcinoma (6.6%), and eosinophilic ileitis (4.9%), in addition to Schistosomal colitis, infectious colitis, Crohn's disease, Coeliac disease and non-specific colitis (1 case for each).

**Conclusions** Lymphocytic colitis is the most common cause of non-irritable bowel syndrome chronic diarrhea.

### eP275 PREVALENCE OF MICROSCOPIC COLITIS IN PATIENTS WITH CHRONIC DIARRHOEA AT A GENERAL DISTRICT HOSPITAL

**Authors** Kassir Y<sup>1</sup>, Ayebo-Sallah B<sup>1</sup>, La Cava R<sup>1</sup>, Yusuf A<sup>2</sup>

**Institute** 1 East Sussex Healthcare NHS Trust, Gastroenterology, Eastbourne, United Kingdom; 2 East Sussex Healthcare NHS Trust, Gastroenterology, London, United Kingdom  
DOI 10.1055/s-0041-1724770

**Citation:** Kassir Y, Ayebo-Sallah B, La Cava R et al. eP275 PREVALENCE OF MICROSCOPIC COLITIS IN PATIENTS WITH CHRONIC DIARRHOEA AT A GENERAL DISTRICT HOSPITAL. *Endoscopy* 2021; 53: S188.

**Aims** Microscopic Colitis (MC) is a cause of chronic, non-bloody diarrhoea and is characterised by endoscopically normal mucosa with characteristic histological findings. We aimed to investigate the prevalence of MC in patients investigated for chronic diarrhoea at a general district hospital.

**Methods** We retrospectively reviewed and analysed data from all colonoscopies undertaken for the investigation of chronic non-bloody diarrhoea between August-December 2019 at our hospital. A total of 810 patients were identified with 43 patients excluded, leaving a total of 767 patients analysed in our study. Of the patients excluded 8 were due to histological findings suggestive of inflammatory bowel disease (IBD), 9 due to adenocarcinoma on histology and 26 due to macroscopically abnormal mucosa with non-specific changes on histology. Of the patients included in the study we analysed patient demographics, endoscopic findings and histological reports.

**Results** Out of 806 patients, 42 patients (5.5%) had histologically confirmed MC with an even distribution of collagenous colitis and lymphocytic colitis. 470 patients (61.3%) had normal histological samples and 255 (33.2%) had other findings, including adenoma and hyperplastic polyps.

The median age of those with MC was 69.5 years (21-85), 12.5 years older ( $p < 0.001$ ) compared to the median age of patients with normal findings 57 years (17-85).

Of patients diagnosed with MC 92.9% had continuous diarrhoea compared to 73.8% of patients with normal findings ( $p < 0.001$ ).

**Conclusions** In a district general population the prevalence of MC in patients with chronic diarrhoea was 5.1% with even distribution of the two subtypes. Our data shows that MC is more prevalent in older patients and in those with continuous rather than intermittent diarrhoea. Further research is needed to determine other factors which may distinguish patients at higher risk of MC.

### eP276 RUBBER BAND LIGATION OF HEMORRHOIDS: A SINGLE-CENTER STUDY OF EFFICACY AND PREDICTORS OF RECURRENCE

**Authors** Laabidi S<sup>1</sup>, Bouchabou B<sup>1</sup>, Ghribi M<sup>1</sup>, Kefi M<sup>1</sup>, Ben Nejma H<sup>1</sup>, Bougassas W<sup>1</sup>, Ennaifer R<sup>1</sup>

**Institute** 1 Faculty of Medicine of Tunis/Mongi Slim La Marsa, Gastroenterology, Tunis, Tunisia  
DOI 10.1055/s-0041-1724771

**Citation:** Laabidi S, Bouchabou B, Ghribi M et al. eP276 RUBBER BAND

LIGATION OF HEMORRHOIDS: A SINGLE-CENTER STUDY OF EFFICACY AND PREDICTORS OF RECURRENCE. *Endoscopy* 2021; 53: S188.

**Aims** Rubber band ligation (RBL) is a common therapeutic alternative in the management of hemorrhoidal disease because of its safety, availability and effectiveness. Our study aimed at evaluating the results of RBL of hemorrhoids, and investigating the predictors of disease recurrence after the procedure.

**Methods** A retrospective study was conducted, including patients with symptomatic internal hemorrhoids treated with RBL on an outpatient basis by the same operator (January 2013- January 2020). Data about patient's characteristics, ligation procedure and results were collected.

**Results** A total of 43 patients (median age: 42 y. (20-88y.); 34 males) were included. RBL was performed because of failure of medical treatment in 30 patients (70%). Seventeen (40%) and 26 (60%) patients presented with prolapse and rectal bleeding, respectively. The mean follow-up period was 24 mo. (3-48mo.). RBL effectiveness at 6 months, 1 year, and 2 years were 92%, 87% and 76%, respectively. Recurrence was observed in 29% of cases within an average of 6 mo. (1-12mo.). In terms of complications, three cases of external hemorrhoidal thrombosis, one case of anal abscess and two cases of pressure ulcer fall were noted. Four patients had surgery after failure of instrumental treatment or its contraindication. The predictive factors of recurrence of hemorrhoidal disease were: age > 50 years ( $p=0.04$ ) and absence of improvement in constipation under well-managed symptomatic treatment ( $p=0.02$ ). No significant association was revealed with gender ( $p=0.3$ ), grade of internal hemorrhoids ( $p=0.2$ ), number of hemorrhoidal bundles ( $p=0.3$ ), antiaggregant or anticoagulant treatment ( $p=0.3$ ) and hypertonia of anal sphincter on rectal examination ( $p=0.08$ ).

**Conclusions** RBL of hemorrhoids was associated with an efficiency rate of 87% at 1 year with a low complication rate. The main predictor of recurrence was the lack of improvement in constipation

## eP277 FEASIBILITY AND SAFETY OF EMERGENCY SELF-EXPANDABLE METAL STENTING (SEMS) IN PATIENTS WITH MALIGNANT COLONIC OBSTRUCTION- A RUSSIAN SINGLECENTER EXPERIENCE

**Authors** [Kiryukhin A<sup>1</sup>](#), [Pavlov P<sup>1</sup>](#), [Gorovaya I<sup>2</sup>](#)

**Institute** 1 The Second University Clinic, I.M. Sechenov First Moscow State Medical University (Sechenov University), Endoscopy Unit, Moscow, Russian Federation; 2 The Second University Clinic, I.M. Sechenov First Moscow State Medical University (Sechenov University), Department of Surgery, Moscow, Russian Federation

**DOI** [10.1055/s-0041-1724772](https://doi.org/10.1055/s-0041-1724772)

**Citation:** Kiryukhin A, Pavlov P, Gorovaya I. eP277 FEASIBILITY AND SAFETY OF EMERGENCY SELF-EXPANDABLE METAL STENTING (SEMS) IN PATIENTS WITH MALIGNANT COLONIC OBSTRUCTION- A RUSSIAN SINGLECENTER EXPERIENCE. *Endoscopy* 2021; 53: S189.

**Aims** Self-expanding metal stents (SEMSs) can be used as a palliative treatment or to initially decompress colon prior to definitive surgery (as a so-called 'bridge to surgery'). The purpose of this study was to investigate the technical and clinical efficacy and safety of SEMS used as bridge to surgery for malignant large bowel obstruction.

**Methods** A unicentric retrospective study was conducted at University Clinic №2 of Sechenov First Moscow State Medical University (Sechenov University) from August 2016 to December 2019. Stenting procedures were performed on 61 patients with a mean age of 65 years (range, 45-89 years old) for relief of obstruction. Prior to the stent placement, the colon was cleansed per enema. 33 patients (54%) were underwent procedure under propofol sedation. In all patients 65 uncovered SEMS were inserted endoscopically under endoscopic and fluoroscopic monitoring. A review was conducted to determine the effectiveness of the procedure and the short- and long-term complications.

**Results** Stent placement was technically and clinically successful in 61/60 (98,4%). 30 patients (49,2%) underwent SEMS insertion as a bridge to surgery,

31 patients for palliation. The follow-up period was 9 months. In one case the stent placement was failed due to impossibility of passing guide catheter through the stenosis. Perforation or bleeding were not observed in the study. Tenesmus was the most common complication, noted in 15 (24,6%) patients, pain (2-3 score VAS) was observed in 5 (8,2%) patients, distal stent migration was not registered. Malignant bowel re-obstruction occurred in 4 (6,6%) patients required re-stenting by stent-in-stent method in 9 months of follow-up.

**Conclusions** Stent placement for colorectal obstruction is an effective and relatively safe procedure, with minor complication. It not only allows subsequent resection, but is also definitive for palliative treatment in patients with obstructive colorectal cancer.

## eP278V ENDOSCOPIC REMOVAL OF A MIGRATED GASTRIC BAND

**Authors** [de Sousa Damião F<sup>1</sup>](#), [Noronha Ferreira C<sup>1</sup>](#), [Nogueira F<sup>2</sup>](#), [Chiado C<sup>2</sup>](#), [Chiado A<sup>2</sup>](#), [Carrilho Ribeiro L<sup>2</sup>](#), [Coutinho J<sup>2</sup>](#), [Tato Marinho R<sup>1</sup>](#)

**Institute** 1 Serviço de Gastreenterologia e Hepatologia, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal; 2 Serviço de Cirurgia, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal

**DOI** [10.1055/s-0041-1724773](https://doi.org/10.1055/s-0041-1724773)

**Citation:** de Sousa Damião F, Noronha Ferreira C, Nogueira F et al. eP278V ENDOSCOPIC REMOVAL OF A MIGRATED GASTRIC BAND. *Endoscopy* 2021; 53: S189.

A 57-year-old female patient with grade III obesity (BMI 41.7kg/m<sup>2</sup>) underwent gastric band implantation in 2009. She achieved a minimum weight of 89 kg (BMI 32.3kg/m<sup>2</sup>). In 2017, she developed weight regain and recurrent port-site infections. Gastroduodenal endoscopy revealed sub-total intragastric band migration and a terminal esophageal fistula. A metallic wire was introduced through the opening between the cardia and the migrated band within the gastric cavity and recovered through the opposite opening with forceps. The band was cut using the metallic wire and a specific lithotripter-type device, following which, the sectioned gastric band was removed using a polypectomy snare.

## eP279 A PARADIGM SHIFT IN THE MANAGEMENT OF ACUTE IATROGENIC COLONIC PERFORATIONS. A 24-YEAR RETROSPECTIVE COMPREHENSIVE STUDY

**Authors** [Fragaki M<sup>1</sup>](#), [Velegraki M<sup>1</sup>](#), [Mpitouli A<sup>1</sup>](#), [Nikolaou P<sup>1</sup>](#), [Tribonias G<sup>1</sup>](#), [Voudoukis E<sup>1</sup>](#), [Karmiris K<sup>1</sup>](#), [Theodoropoulou A<sup>1</sup>](#), [Vardas E<sup>1</sup>](#), [Paspatis G<sup>1</sup>](#)

**Institute** 1 Venizelio General Hospital, Gastroenterology, Heraklion Crete, Greece

**DOI** [10.1055/s-0041-1724774](https://doi.org/10.1055/s-0041-1724774)

**Citation:** Fragaki M, Velegraki M, Mpitouli A et al. eP279 A PARADIGM SHIFT IN THE MANAGEMENT OF ACUTE IATROGENIC COLONIC PERFORATIONS. A 24-YEAR RETROSPECTIVE COMPREHENSIVE STUDY. *Endoscopy* 2021; 53: S189.

**Aims** Historically, colonoscopic perforation was treated surgically in most cases. With advanced endoscopic clipping techniques (in particular, the over-the-scope-clip system) being developed during the last decade, endoscopic treatment of both diagnostic and therapeutic perforations has been effective, particularly in perforations diagnosed during the procedure. The primary objective of this study was to compare the management of acute iatrogenic perforations (AIPs) of the colon before and after the introduction of advanced clipping techniques.

**Methods** We conducted a retrospective study from July 1996 to February 2020. The period was divided into two sub periods, Period 1: from July 1996 to December 2012 and Period 2: from January 2013 to March 2020. All AIPs occurring during a colonoscopy and detected during or immediately (<4h) after the procedure, were included in the study.

**Results** The total number of colonoscopic procedures performed at our hospital was 33055 and 36831 during Period 1 & 2 respectively. 15 perforations

were observed in Period 1 and 11 in Period 2. The rate of surgery was 93.3% (14/15) in Period 1 and 27.2% (3/11) in Period 2 ( $p < 0.01$ ). The subsequent rate of endoscopic treatment increased from 6.6% to 72.7%. In the subgroup of cases where AIPs occurred during a diagnostic colonoscopy, the respective rate of endoscopic treatment increased from 0% for Period 1 to 85.7% for Period 2. The mean hospital stay in Period 1 was 6.9 days and 4 in Period 2 ( $p < 0.01$ ).

**Conclusions** Data from this historical cohort have clearly shown a decrease in the surgery rate of AIPs occurring during both diagnostic and therapeutic colonoscopy and detected during or immediately (<4h) after the procedure. A significant reduction in the length of hospitalization after the endoscopic or laparoscopic treatment of AIPs was also observed.

### eP280 PROSPECTIVE EVALUATION OF COMPLICATIONS AFTER ENDOSCOPIC MUCOSAL RESECTION (EMR) OF SUPERFICIAL NON-AMPULLARY DUODENAL EPITHELIAL TUMORS (SNADETS)

**Authors** Amoyel M<sup>1</sup>, Belle A<sup>1</sup>, Dhooge M<sup>1</sup>, Abou Ali E<sup>1</sup>, Hallit R<sup>1</sup>, Terris B<sup>1</sup>, Leblanc S<sup>1</sup>, Prat F<sup>1</sup>, Coriat R<sup>1</sup>, Chaussade S<sup>1</sup>, Barret M<sup>1</sup>

**Institute** 1 Hôpital Cochin APHP, Endoscopic, Paris, France

DOI 10.1055/s-0041-1724775

**Citation:** Amoyel M, Belle A, Dhooge M et al. eP280 PROSPECTIVE EVALUATION OF COMPLICATIONS AFTER ENDOSCOPIC MUCOSAL RESECTION (EMR) OF SUPERFICIAL NON-AMPULLARY DUODENAL EPITHELIAL TUMORS (SNADETS). *Endoscopy* 2021; 53: S190.

**Aims** SNADETs are rare lesions, with poorly standardized resection techniques. The complication rates after EMR range from 10.5 to 41.3%. The aim of our work was to evaluate the efficacy and safety of EMR of non-ampullary duodenal adenomas.

**Methods** Consecutive patients of a tertiary digestive endoscopy center from January 2015 to December 2020 were analyzed. This is a retrospective study of a prospectively collected database. Patients who had resections for ampullary, non-adenomatous, or infracentimetric lesions were excluded. Clinical and endoscopic patient data were extracted from computerized medical records.

**Results** 184 patients were treated with a mean age of 61.8 years and a median ASA score of 2. 55/184 (29.9%) had a genetic predisposition syndrome, of which 35/184 (19%) had familial adenomatous polyposis. The median (range) lesion size was 25mm (10-90mm).

EMR was performed in 179/184 (97.3%) of cases with an en-bloc resection rate of 76/184 (41.3%) and an endoscopic complete resection rate of 165/184 (89.7%). To prevent complication's risk, EMR closure was performed in 69/184 (37.5%) of the cases and hemostatic treatment in 144/184 (78.3%). 36/184 (19.6%) complications were recorded, including 28/184 (15.2%) of immediate bleeding, 6/184 (3.3%) of immediate perforation, 4/184 (2.2%) of delayed perforation, 14/184 (7.6%) of severe complications without any death at D30. Complication rate was 7/69 (10.1%) for closed lesions by hemoclips versus 27/113 (23.9%) without hemoclip ( $p=0.03$ ), and 11/51 (21.2%) for lesions of patients with genetic predisposition syndrome versus 25/133 (18.7%) without ( $p=0.68$ ). 71/184 (38.6%) local recurrence was found after a median follow-up of 12.6 months, 21/76 (27.6%) in the en-bloc resected group and 50/108 (46.3%) in the piecemeal resected group ( $p=0.014$ ), and 23/71 (32.4%) endoscopic remission was obtained after a median of 2 procedures.

**Conclusions** EMR of SNADETs has a 20% morbidity, similar in patients with genetic predisposition syndromes or sporadic lesions. Placement of hemoclip significantly reduces the complication rates. The high local recurrence rate, also observed after en-bloc resections, should lead to consider alternative endoscopic resection techniques.

### eP281 BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION: THE ROLE OF ANTITHROMBOTIC DRUGS

**Authors** Revés J<sup>1</sup>, Frias Gomes C<sup>1</sup>, Nascimento C<sup>1</sup>, Morão B<sup>1</sup>, Gouveia C<sup>1</sup>, Palmela C<sup>1</sup>, Torres J<sup>1</sup>, Cravo M<sup>1</sup>, Glória L<sup>1</sup>, Ferreira A<sup>1</sup>

**Institute** 1 Hospital Beatriz Ângelo, Gastroenterology Department, Lisbon, Portugal

DOI 10.1055/s-0041-1724776

**Citation:** Revés J, Frias Gomes C, Nascimento C et al. eP281 BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION: THE ROLE OF ANTITHROMBOTIC DRUGS. *Endoscopy* 2021; 53: S190.

**Aims** Bleeding is one of the most frequent complications of endoscopic submucosal dissection (ESD). Our aim is to evaluate the predictors of bleeding after ESD, namely the role of antithrombotic drugs, including anticoagulants and anti-platelet drugs.

**Methods** Retrospective cross-sectional study including all patients submitted to colorectal or gastro-oesophageal ESD between January 2018 and August 2020. The main outcome was the development of clinically significant bleeding during or after ESD, defined by the presence of visible blood loss, decrease in haemoglobin by  $>2$  g/dL or the need for haemostatic treatment such as endoscopic clipping or haemostatic forceps.

**Results** A total of 72 ESD were analysed, 57% were colorectal and 43% were gastro-oesophageal. The *en bloc* resection rate and the complete resection rate were 90% and 96% respectively. Eight lesions were resected by hybrid technique. Bleeding secondary to ESD was reported in 22% ( $n=16$ ) of the patients. Bleeding was more frequent in gastro-oesophageal ESD (69%). Of all the patients who bled, 63% were medicated with at least one antithrombotic drug, such as warfarin, direct oral anticoagulant, aspirin or P2Y12 inhibitors. The main reasons for anticoagulant and antiplatelet drugs use was the presence of atrial fibrillation (80%) and primary prophylaxis of cardiovascular disease (73%), respectively. The mean duration of hospitalization increased by 2 days in patients who suffered from bleeding (1 vs 3,  $p=0.04$ ). The gastro-oesophageal location of the lesion (OR 3.96; 95% CI 1.20-13.02;  $p=0.02$ ) and the use of antithrombotic drugs (OR 4.56; 95% CI 1.41-14.71;  $p=0.01$ ) were significant predictors of the development of bleeding. There was no statistically significant association with the size of the lesion, duration of the ESD, age of the patient or use of hybrid technique.

**Conclusions** Patients submitted to gastro-oesophageal ESD or taking anti-thrombotic drugs are at increased risk of developing bleeding secondary to ESD.

### eP282 WHAT ARE THE MOST FREQUENT COMPLICATIONS OF A PEG PROCEDURE IN DAILY PRACTICE? A RETROSPECTIVE ANALYSIS IN A TERTIARY CENTER

**Authors** Moga T<sup>1</sup>, Ratiu I<sup>1</sup>, Foncea C<sup>1</sup>, Barbulescu A<sup>1</sup>, Lupusoru R<sup>1</sup>, Miutescu B<sup>1</sup>, Cotrau R<sup>1</sup>, Popescu A<sup>1</sup>, Dan F<sup>2</sup>, Jianu D<sup>2</sup>, Simu M<sup>2</sup>, Sporea I<sup>1</sup>

**Institute** 1 University of Medicine and Pharmacy 'Victor Babes' Timisoara, Gastroenterology, Timisoara, Romania; 2 University of Medicine and Pharmacy 'Victor Babes' Timisoara, Neurology, Timisoara, Romania

DOI 10.1055/s-0041-1724777

**Citation:** Moga T, Ratiu I, Foncea C et al. eP282 WHAT ARE THE MOST FREQUENT COMPLICATIONS OF A PEG PROCEDURE IN DAILY PRACTICE? A RETROSPECTIVE ANALYSIS IN A TERTIARY CENTER. *Endoscopy* 2021; 53: S190.

**Aims** The aim of this study was to assess the most frequent complication of the PEG procedure and device-related complication and also to analyze the management framework of the patients undergoing this maneuver.

**Methods** We retrospectively analyzed patients that have been selected for PEG insertion in the Gastroenterology department in Timisoara for a period of four years. The procedure and device-related adverse events were analyzed from the medical records among with the mean procedural time, mean Propofol dose used and mean hospitalization days.



**Results** We have evaluated 128 patients with PEG insertion during 2016-2019. The mean age was 66.3±9.7 years, 26.6% female and 73.4% male, from which 85% of them were de novo insertions. The prevailing indication (86%) was Parkinson Disease and 5.5% for alimentation purpose. The mean procedural time was 15.3±3 minutes with a mean propofol dose of 65±21.1 mg. Overall the patients for PEG insertion had an average hospitalization of 8.4±5 days. We had minor complications: 7% (9/128) local pain and minor local bleeding 1.6% (2/128). Major complications: 3, 1% (4/128) buried bumper syndrome, 3.1% developed pneumoperitoneum- out of which 1 patient died and one was referred to surgery 0.8%. There is no correlation between the procedural time and dose of Propofol  $r=0.3612$ ,  $p=0.0002$ , CI 95% (0.179-0.591).

**Conclusions** PEG is a safe and fast procedure in a tertiary center, still the hospitalization days is too long for a minim-invasive procedure. According to our results, there was no correlation between the time of the procedure and the amount of Propofol used.

## eP284 COVID-19 AS A BARRIER FOR DELAYING THERAPEUTIC ENDOSCOPY AFTER RADICAL TREATMENT OF UPPER GASTROINTESTINAL CANCER. ANALYSIS OF CLINICAL CASES

**Authors** [Basina O<sup>1,2</sup>](#), [Lapina A<sup>1</sup>](#), [Sivins A<sup>3</sup>](#), [Kaminskis A<sup>4</sup>](#)

**Institute** 1 Riga East University Hospital, Endoscopy Department, Riga, Latvia; 2 Riga Stradins University, Department of Internal Medicine, Riga, Latvia; 3 Riga East University Hospital, Surgical Oncology Clinic, Riga, Latvia; 4 Riga East University Hospital, Surgery Department, Riga, Latvia  
DOI 10.1055/s-0041-1724778

**Citation:** Basina O, Lapina A, Sivins A et al. eP284 COVID-19 AS A BARRIER FOR DELAYING THERAPEUTIC ENDOSCOPY AFTER RADICAL TREATMENT OF UPPER GASTROINTESTINAL CANCER. ANALYSIS OF CLINICAL CASES. *Endoscopy* 2021; 53: S191.

**Aims** We decided to present several patient's cases that had several therapeutic endoscopies and follow ups after radical treatment of upper gastrointestinal cancer, as well as point out the problems associated with treatment delay due to COVID-19 pandemic.

**Methods** The patients we included had some therapeutic endoscopic procedures delayed due to pandemic.

**Results** First patient - 56 years old, had oesophagus resection in June 2018, followed by gastroplasty and adjuvant chemotherapy.

In August 2018 had a follow up where anastomose stricture was observed. Afterwards patient received 8 dilatation procedures during year's time and in October 2019 self-expandable metallic stent (SEMS) was inserted to reduce the frequency of dilatation procedures. On time evacuation 6 weeks after the insertion and a follow up in January 2020. Unfortunately, the stricture has formed repeatedly and patient has to continue dilatation procedures every month.

Patient agrees for another SEMS just before the pandemic in March, afterwards several months delay due to COVID-19 associated procedures, so next follow up only in August 2020 where we see an embedded stent. Evacuation was unsuccessful and patient had to have an operation during which the oesophagus was replaced with small intestine. A week later after surgery patient's state worsens because of necrosis of autotransplant followed by patient's death.

Our second patient - 69 years old, had oesophagus resection in January 2020. Postoperative period with complications as the patient has a leakage of newly formed anastomosis and we decided to insert SEMS for further support. Afterwards 4 months delay due to the pandemic, as patient comes for follow up only in July 2020. In this case we were able to remove the embedded stent with stent-in-stent technique and instruct the patient to continue follow up every month for dilatation procedures.

**Conclusions** Delayed treatment due to COVID-19 makes management more complex.

## eP285 COMPLICATIONS OF ENDOSCOPIC ULTRASOUND OF THE UPPER GI TRACT

**Authors** [Budimir I<sup>1</sup>](#), [Pavić T<sup>1</sup>](#), [Bašić N<sup>1</sup>](#), [Živković M<sup>1</sup>](#), [Ratkajec V<sup>2</sup>](#), [Ratković A<sup>3</sup>](#), [Nikolić M<sup>1</sup>](#)

**Institute** 1 «SestreMilosrdnice» University Hospital Center, Division of Gastroenterology, Department of Internal Medicine, Zagreb, Croatia; 2 County Hospital Virovitica, Virovitica, Croatia; 3 County Hospital Gospić, Gospić, Croatia

DOI 10.1055/s-0041-1724779

**Citation:** Budimir I, Pavić T, Bašić N et al. eP285 COMPLICATIONS OF ENDOSCOPIC ULTRASOUND OF THE UPPER GI TRACT. *Endoscopy* 2021; 53: S191.

**Aims** The aim of this retrospective trial is to show complications of endoscopic ultrasound (EUS) of the upper GI tract. The data of complications of EUS in Southeastern Europe do not exist.

**Methods** In our study we included all patients with performed EUS of the upper part of the GI tract in the period from 01.01.2009. until 30.6.2020. Most patients were sedated with midazolam. Patients who underwent EUS-Guided Fine-Needle Aspiration (FNA) of cyst were prescribed antibiotic prophylaxis. We observed all patients for at least 2 hours after the procedure and we observed patients with complications for at least 48 hours after the development of complications.

**Results** In the eleven and a half year period (from 01.01.2009 to 30.6.2020), 6384 patients who underwent EUS of the upper GI tract were analyzed.

In 5433 patients diagnostic endosonographic procedures without any intervention were done. EUS with invasive diagnostic and therapeutic procedures was performed in 951 (14.9%) patients.

FNA was performed in 833 (87.6%) patients, EUS-guided Fine-Needle Biopsy (FNB) was performed in 92 (9.7%) patients, plastic stent implantation was performed in 6 (0.6%) patients, and lumen-apposing stent implantation (Axios) was performed in 20 (2.1%) patients.

In one patient, perforation of the proximal third of the esophagus occurred (0.02%).

Bleeding as a complication occurred in 7 (0.73%) patients, mild form of acute pancreatitis developed in 4 (0.42%) patients, sepsis developed in 6 (0.63%) patients, cyst inflammation developed in 2 (0.2%) patients and stent migration developed in one (3.8%) patient.

The overall mortality of non-interventional and interventional endosonographic procedures was 0.1% (one patient died of sepsis).

**Conclusions** (EUS) of the upper GI tract is a safe diagnostic and therapeutic technique with rare complications that are predominantly associated with invasive diagnostic and therapeutic procedures.

## eP286 COMPARABLE QUALITY OF BOWEL PREPARATION WITH SINGLE-DAY VERSUS THREE-DAY LOW-RESIDUE DIET: A RANDOMIZED CONTROLLED TRIA

**Authors** [Machlab S<sup>1,2</sup>](#), [Martínez-Bauer E<sup>1,2</sup>](#), [López P<sup>3</sup>](#), [Puig-Diví V<sup>1</sup>](#), [Junquera F<sup>1</sup>](#), [Lira A<sup>1</sup>](#), [Hernández L<sup>1</sup>](#), [Brullet E<sup>1</sup>](#), [Selva A<sup>3</sup>](#), [García-Iglesias P<sup>1</sup>](#), [Vives J<sup>1</sup>](#), [Soria A<sup>1</sup>](#), [Pedregal P<sup>1</sup>](#), [Grau G<sup>1</sup>](#), [Calvet X<sup>1,2</sup>](#), [Campo R<sup>1,2</sup>](#)

**Institute** 1 Parc Taulí Hospital Universitari. Institut d'Investigació i Innovació Parc Taulí I3PT, Gastroenterology Department, Sabadell, Spain; 2 Universitat Autònoma de Barcelona, Departament de Medicina, Barcelona, Spain; 3 Parc Taulí Hospital Universitari. Institut d'Investigació i Innovació Parc Taulí I3PT, Clinical Epidemiology and Cancer Screening, Sabadell, Spain

DOI 10.1055/s-0041-1724780

**Citation:** Machlab S, Martínez-Bauer E, López P et al. eP286 COMPARABLE QUALITY OF BOWEL PREPARATION WITH SINGLE-DAY VERSUS THREE-DAY LOW-RESIDUE DIET: A RANDOMIZED CONTROLLED TRIA. *Endoscopy* 2021; 53: S191.

**Aims** There is controversy about the length of low-residue diet (LRD) for colonoscopy preparation. The aim of the study was to compare one-day vs. three-



day LRD associated to standard laxative treatment for achieving an adequate colonoscopy preparation in average risk subjects with positive fecal immunochromatological test undergoing screening colonoscopy.

**Methods** A non-inferiority, randomised, controlled, parallel-group clinical trial was performed in the setting of average risk colorectal cancer screening program. Participants were randomised to receive 1-day vs. 3-day LRD in addition to standard polyethylenglycol treatment. Adequacy of preparation was evaluated using the Boston Bowel Preparation Scale (BBPS). Primary outcome was achieving a BBPS  $\geq 2$  in all colon segments. Analysis was performed for a non-inferiority margin of 5%, a 95% statistical power and one-sided 0.05 significance level.

**Results** A total of 855 patients were randomised. Adequate bowel preparation was similar between groups: 97.9% of patients in the 1-day LRD group vs 96.9% in the 3-day LRD group achieved the primary outcome (p-value for non-inferiority  $<0.001$ ). The percentage of patients with BBPS scores  $\geq 8$  was superior in 1-day LRD group (254 vs 221 in the 3-day LRD group,  $p=0.032$ ). The 1-day regimen was better tolerated than the 3-day diet. A 47.7% (vs, 28.7%,  $p<0.05$ ) of patients rated the One-day LRD as very easy to follow.

**Conclusions** One-day LRD is non-inferior to three-day LRD for achieving an adequate colon cleansing before average risk screening colonoscopy and it is better tolerated.

## eP287 THE ROLE OF COLONOSCOPY WITHOUT INTESTINAL PREPARATION IN AN EMERGENCY CONTEXT

**Authors** Correia C<sup>1</sup>, Almeida N<sup>1</sup>, Souto P<sup>1</sup>, Figueiredo P<sup>1</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724781

**Citation:** Correia C, Almeida N, Souto P et al. eP287 THE ROLE OF COLONOSCOPY WITHOUT INTESTINAL PREPARATION IN AN EMERGENCY CONTEXT. *Endoscopy* 2021; 53: S192.

**Aims** When talking about emergency colonoscopy, the guidelines are assertive in stating that colonoscopy without preparation has no place in the evaluation of patients with suspected lower gastrointestinal bleeding (LGB). The objective of the present work is to verify whether, despite these recommendations, the performance of emergency colonoscopy, without any preparation, has any type of positive impact.

**Methods** A retrospective analysis of 77 patients (male-53.2%; mean age-69.6  $\pm$  17 years) admitted consecutively to the Emergency Department (ED) by LGB and who underwent colonoscopy without prior intestinal preparation was performed.

**Results** Despite the lack of preparation, it was possible to perform total colonoscopy in 7 patients (9.1%), left colonoscopy in 44 (57.1%) and rectosigmoidoscopy in 26 (33.8%). In 61% of the patients, a definitive diagnosis was established in this initial approach, with only 3 (6.4%) having undergone total colonoscopy after antegrade preparation, confirming the established diagnosis.

Biopsies were performed in 28.6% of the individuals, allowing the establishment of a histological diagnosis. Additionally, in 10 patients (13%) an active hemorrhagic focus was identified, with endoscopic hemostasis being performed. None of these 10 patients required additional procedures during hospitalization.

Even in the 30 patients in whom it was not possible to establish a diagnosis at the initial colonoscopy, 14 did not present major changes in the mucosa or presence of blood that justified the clinical complaints. Therefore, they were safely discharged without any being readmitted in the following 28 days. In the end, only 16 patients (20.8%) had the initial colonoscopy inconclusive and consequently, the need to repeat it after antegrade preparation. Even in those cases, no diagnosis was reached in 26.7%.

**Conclusions** Colonoscopy without preparation in an urgent context is not a useless attitude, allowing adequate guidance in 4/5 of the patients, with benefits in terms of costs and time.

## eP288 ADEQUATE AND HIGH-QUALITY CLEANSING SUCCESS FROM UNDER 5 TO AT LEAST 13 HOURS AFTER BOWEL PREPARATION START WITH SAME DAY 1L NER1006: POST HOC ANALYSIS

**Authors** Álvarez-González MA<sup>1</sup>, Halonen J<sup>2</sup>

**Institute** 1 Hospital del Mar, Digestive Diseases, Barcelona, Spain; 2 Norgine Ltd, Medical Affairs, Harefield, United Kingdom

**DOI** 10.1055/s-0041-1724782

**Citation:** Álvarez-González MA, Halonen J. eP288 ADEQUATE AND HIGH-QUALITY CLEANSING SUCCESS FROM UNDER 5 TO AT LEAST 13 HOURS AFTER BOWEL PREPARATION START WITH SAME DAY 1L NER1006: POST HOC ANALYSIS. *Endoscopy* 2021; 53: S192.

**Aims** Urgent colonoscopies within 8 hours of presentation may increase the diagnostic yield<sup>1</sup>. Bowel preparations with sustained cleansing efficacy may help endoscopists examine more patients per day. We analysed if 1L polyethylene glycol (PEG) NER1006 could rapidly attain high-quality colon cleansing success and sustain it over a period of typical daily working hours.

**Methods** Analysis of 262 patients using same-day morning-only dosing with NER1006 in the randomized clinical trial MORA<sup>2</sup>. Included adult patients had their colonoscopy within 13 hours from the start of the bowel preparation and overall cleansing quality assessed by site endoscopists using the validated Harefield Cleansing Scale (HCS). Success rates were calculated for overall adequate (HCS AB) and high-quality (HCS A; all segments stool free) cleansing. Patient quartiles (Q1-Q4) with similar samples sizes but differing time lapses from the start of the bowel preparation to the start of the colonoscopy were compared versus Q1 using a 2-sided t-test.

**Results** Time lapses ranged from 4.67 to 12.97 hours (► **Table**). Patients with the shortest and the longest time lapses attained both adequate and high-quality cleansing success. Adequate cleansing success was comparable across quartiles Q1 (87.9% (58/66)), Q2 (89.6% (60/67);  $P=0.762$ ), Q3 (92.3% (60/65);  $P=0.400$ ) and Q4 (95.3% (61/64);  $P=0.130$ ). Substantial high-quality cleansing success was also attained in all quartiles, with similar rates across quartiles Q1 (69.7% (46/66)), Q2 (67.2% (45/67);  $P=0.756$ ) and Q3 (66.2% (43/65);  $P=0.667$ ). A numerically lower rate was observed in Q4 (56.3% (36/64);  $P=0.114$ ).

► **Table** Colon cleansing success in quartiles of patients.

Quartile	Q1	Q2	Q3	Q4
<b>Time lapse after the start of bowel preparation, hours</b>	4.67 - 7.28	7.30 - 8.50	8.52 - 9.53	9.55 - 12.97
<b>Patients, % (n/N)</b>	25.2 (66/262)	25.6 (67/262)	24.8 (65/262)	24.4 (64/262)
<b>HCS Grade AB success, % (n/N); 2-sided P vs Q1</b>	87.9 (58/66); $P=1.000$	89.6 (60/67); $P=0.762$	92.3 (60/65); $P=0.400$	95.3 (61/64); $P=0.130$
<b>HCS Grade A success, % (n/N); 2-sided P vs Q1</b>	69.7 (46/66); $P=1.000$	67.2 (45/67); $P=0.756$	66.2 (43/65); $P=0.667$	56.3 (36/64); $P=0.114$

**Conclusions** Same-day morning-only dosing with NER1006 attained successful adequate and high-quality cleansing within 5 hours and up to at least 13 hours from the start of bowel preparation. These findings encourage further research into the diagnostic benefits of urgent colonoscopies and endoscopists to consider increasing their daily colonoscopy capacity.

**References** [1] *Gastroenterol Am J*. 2005;100(11):2395–2402.  
[2] *Endoscopy*. 2019 Jan;51(1):60–72.

## eP289 COMPARISON OF THE EFFICACY AND SAFETY BETWEEN ORAL SULPHATE SOLUTION (OSS) AND POLYETHYLENE GLYCOL ELECTROLYTE (PEG-E) AS BOWEL CLEANSING AGENT

**Authors** Ye Z<sup>1</sup>, Fandong M<sup>1</sup>, Yongdong W<sup>1</sup>, Bangmao W<sup>2</sup>, Xizhong S<sup>3</sup>, Yi C<sup>4</sup>, Guoxin Z<sup>5</sup>, Ai'ming Y<sup>6</sup>, De'an T<sup>7</sup>, Jianting C<sup>8</sup>, Huahong W<sup>9</sup>, Ponchon T<sup>10</sup>, Pommier C<sup>11</sup>, Shihua C<sup>12</sup>, Shutian Z<sup>1</sup>

**Institute** 1 Beijing Friendship Hospital, Capital Medical University, Beijing, China; 2 Tianjin Medical University General Hospital, Tianjin, China; 3 The Affiliated Zhongshan Hospital of Fudan University, Shanghai, China; 4 The First Affiliated Hospital, Sun Yat-Sen University, Guangzhou, China; 5 Jiangsu Province Hospital, Jiangsu, China; 6 Chinese Academy of Medical Sciences Peking Union Medical College Hospital, Beijing, China; 7 Tongji Hospital of Tongji Medical College, Wuhan, China; 8 The Second Affiliated Hospital of Zhejiang University School of Medicine, Hangzhou, China; 9 Peking University First Hospital, Beijing, China; 10 Hôpital Edouard Herriot, Service de Gastroentérologie et d'Endoscopie Digestive, Lyon, France; 11 Keyrus Biopharma, Nantes, France; 12 Medical affairs of Beaufour-Ipsen (Tianjin) Pharmaceutical Co., Ltd., Tianjin, China

DOI 10.1055/s-0041-1724783

**Citation:** Ye Z, Fandong M, Yongdong W et al. eP289 COMPARISON OF THE EFFICACY AND SAFETY BETWEEN ORAL SULPHATE SOLUTION (OSS) AND POLYETHYLENE GLYCOL ELECTROLYTE (PEG-E) AS BOWEL CLEANSING AGENT. *Endoscopy* 2021; 53: S193.

**Aims** In China, Polyethylene Glycol Electrolyte (PEG-E) is the primary recommended bowel cleansing agent but patient compliance may be influenced by poor taste and large volume (3-4L). This study aimed to compare the efficacy and safety of oral sulphate solution (OSS, a low volume agent with fruit flavor) to PEG-E on bowel cleansing before colonoscopy in Chinese population.

**Methods** This was a phase III, multicenter, randomized, controlled, non-inferiority, investigator/assessor-blinded trial (NCT03562884). 294 subjects were randomized, 283 subjects received OSS (Eziclen, 3L, n=143) or PEG-E (Forrans, n=140) via split-dosing regimen. The primary outcome was the proportion of subjects with successful preparation (BBPS global score  $\geq 6$  by central assessment). The secondary outcomes included BBPS global and segmental score, lesion detection rate, proportion of fully compliant, investigator satisfaction score (5-point Likert scale score) and safety evaluations. Farrington-Manning method was used to compare the difference.

**Results** Proportion of subjects with successful cleansing was 100% for OSS and 99.3% for PEG-E (adjusted difference 0.7%, 95% CI [-5.3%, 6.7%],  $p < 0.0001$  for non-inferiority, mITT population). BBPS score by central assessment was significantly higher in OSS including global and segmental scores. Detailed results in ► **Table 1**. Investigator satisfaction score was significantly higher for OSS (2.6 vs 2.3,  $p = 0.0005$ ). The proportion of fully compliant was not statistically different (88.1% in OSS vs 83.1% in PEG-E,  $p = 0.2252$ ). No significant difference was noted on adenomas (4.2% in OSS vs 5.6% in PEG-E,  $p = 0.5787$ ) and polyps (16.5% in OSS vs 22.8% in PEG-E,  $p = 0.1832$ ) detection rate. All drug-related AEs were mild to moderate with no significant differences and no SAEs.

**Conclusions** OSS had at least equal efficacy to PEG-E and higher BBPS score overall and by segments with similar safety and compliance. Investigator satisfaction was also significantly higher.

► **Table 1** BBPS comparison between OSS and PEG-E

Item	OSS N=143 Mean (95% CI)	PEG-E N=140 Mean (95% CI)	P-value
BBPS global score	8.1 (7.9-8.3)	7.7 (7.5-7.9)	<0.0001
Left colon BBPS score	2.8 (2.7-2.9)	2.7 (2.6-2.8)	0.0067
Transverse colon BBPS score	2.8 (2.7-3.0)	2.7 (2.6-2.8)	0.0177
Right colon BBPS score	2.4 (2.3-2.6)	2.3 (2.1-2.4)	0.0022

Note: P-value is calculated using Kruskal-Wallis test.

## eP290 CC-CLEAR (COLON CAPSULE CLEANSING ASSESSMENT AND REPORT): THE NOVEL SCALE TO EVALUATE THE QUALITY OF BOWEL PREPARATION IN CAPSULE COLONOSCOPY – A PROSPECTIVE VALIDATION STUDY

**Authors** de Sousa Magalhães R<sup>1,2,3</sup>, Sousa-Pinto B<sup>4,5</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Moreira MJ<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Guimarães/Braga, Portugal; 4 MEDCIDS – University of Porto, Department of Community Medicine, Information and Health Decision Sciences, Faculty of Medicine, Porto, Portugal; 5 CINTESIS – Center for Health Technology and Services Research, University of Porto, Porto, Portugal

DOI 10.1055/s-0041-1724784

**Citation:** de Sousa Magalhães R, Sousa-Pinto B, Boal Carvalho P et al. eP290 CC-CLEAR (COLON CAPSULE CLEANSING ASSESSMENT AND REPORT): THE NOVEL SCALE TO EVALUATE THE QUALITY OF BOWEL PREPARATION IN CAPSULE COLONOSCOPY – A PROSPECTIVE VALIDATION STUDY. *Endoscopy* 2021; 53: S193.

**Aims:** CC-CLEAR (Colon Capsule CLEansing Assessment and Report) is a novel quantitative bowel preparation scale for CC, recently developed by our department, that displays excellent interobserver and intraobserver agreement rates when compared to other current used scales.

**Aim:** Validation of CC-CLEAR.

**Methods** Consecutive CCs since 2015 until 2020. A cluster of 79 patients was followed prospectively since January 2019 (2 months minimum follow-up). Videos were reviewed by two experienced physicians, and post CC recommendations decided by a panel of experts. Age, gender, indication for CC, colonic transit time, findings, complications and recommendations (early CC repetition, CC in three years or need for early colonoscopy) were included, as well as data from colonoscopies performed following CC. CC-CLEAR (continuous and categorical) was assessed.

**Results** 128 patients, 90 (70.3%) females, with a mean age of 65 years old. Endoscopic findings were reported in 95 (74.2%) CCs, 48 (50.5%) of which were polyps. Twenty-five (19.5%) colonoscopies were recommended after CC, including 18 (72%) polypectomies and 5 (20%) other endoscopic treatments.

CC-CLEAR influenced the detection of CC findings (OR 1,26 95% IC [1,02-1,57] p-value 0,035) after adjusting for other covariables. CC-CLEAR affected the polyp detection rate (OR 1,26 95% IC [1,01-1,56] p-value 0,031), the need for colonoscopy treatment (OR 1.41 95% IC [1.02-1.94] p-value 0,03), the decision for early CC repetition (OR 0,27 95% IC [0.14-0.49] p-value <0,001), the suggestion for CC in three years' time (OR 1.43 95% IC [1.01-2.02] p-value <0,041) and presented a statistical trend for early colonoscopy recommendation (OR 1.20 95% IC [0.93-1.54] p-value 0,15).

**Conclusions:** CC-CLEAR is a new, reliable cleansing scale that impacts CC findings detection rate, the need for therapeutic colonoscopy and the recommendations regarding the timing of following colonoscopy.

## eP291 EFFECTIVENESS AND SAFETY OF 1L PEG-ASC PREPARATION FOR COLONOSCOPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES

**Authors** Maida M<sup>1</sup>, Morreale GC<sup>1</sup>, Sferrazza S<sup>2</sup>, Sinagra E<sup>3</sup>, Scalisi G<sup>4</sup>, Schillaci D<sup>5</sup>, Vitello A<sup>1</sup>, Vettori G<sup>2</sup>, Rossi F<sup>3</sup>, Catarella D<sup>4</sup>, Di Bartolo CE<sup>4</sup>, Pallio S<sup>6</sup>, Manganaro M<sup>1</sup>, Camilleri S<sup>1</sup>, FS Macaluso<sup>7</sup>

**Institute** 1 Gastroenterology and Endoscopy Unit, S. Elia-Raimondi Hospital, Caltanissetta, Italy; 2 Gastroenterology and Endoscopy Unit, Santa Chiara Hospital, Trento, Italy; 3 Gastroenterology and Endoscopy Unit, Fondazione Istituto San Raffaele Giglio, Cefalù, Italy; 4 Gastroenterology Unit, ARNAS Garibaldi, Catania, Italy; 5 Gastroenterology Unit, Basarocco Hospital, Niscemi, Italy; 6 Digestive Diseases Endoscopy Unit, Policlinico G. Martino Hospital, University of Messina, Messina, Italy; 7 IBD Unit, Villa Sofia-Cervello Hospital, Palermo, Italy

DOI 10.1055/s-0041-1724785

**Aims** The effectiveness of bowel cleansing is a key element for a quality colonoscopy, especially in patients with inflammatory bowel diseases (IBD), both for assessment of mucosal healing and for detection of pre-neoplastic lesions during surveillance.

Recently, a 1L polyethylene glycol plus ascorbate solution (Plenvu; Norgine, Harefield, UK) has been introduced on the evidence of three RCTs. Nevertheless, the effectiveness and safety of this preparation in IBD patients have not been assessed. This study aims to evaluate the effectiveness and safety of Plenvu in patients with IBD compared to controls.

**Methods** We retrospectively reviewed a prospective cohort of 411 in- and out-patients aged >18 years performing a colonoscopy after preparation with Plenvu, consecutively enrolled from November 2019 to February 2020 in 5 Italian centres.

**Results** Overall, 185/411 (45%) were IBD patients (51.4% with Ulcerative Colitis and 48.6% with Crohn's Disease), and 226/411 (55%) controls. A significantly higher bowel cleansing success was achieved in IBD patients (92.9% vs 85.4%, p=0.02), with a similar high-quality cleansing of the right colon (39.1% vs 40.5%, p=0.7) compared to controls.

At logistic multiple regression only split preparation (OR=3.97, 95% CI=1.08-14.53; P=0.037) was independently associated with overall bowel cleansing success in IBD patients.

The number of patients with any mild to moderate treatment-related adverse events (AEs) was lower in the IBD compared to the control group (8.6% vs 22.1%, p<0.001).

Days of low-fiber diet (OR=2.19, 95% CI=1.24-3.85; P=0.006), longer duration of disease (OR=1.09, 95% CI=1.02-1.16; P=0.005), and diabetes (OR=5.83, 95% CI=1.28-26.6; P=0.023) were independently associated with incidence of AEs in IBD patients at logistic multiple regression.

**Conclusions** Results from this study support the high effectiveness and the safety of Plenvu in IBD patients. The higher cleansing success rates achieved with this preparation may, therefore, contribute to a more accurate definition of endoscopic outcomes in patients with IBD.

Citation: Maida M, Morreale GC, Sferrazza S et al. eP291 EFFECTIVENESS AND SAFETY OF 1L PEG-ASC PREPARATION FOR COLONOSCOPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES. *Endoscopy* 2021; 53: S194.

## eP292 BOWEL PREPARATIONS REGIMENS FOR COLON CAPSULE ENDOSCOPY – A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Bjoersum-Meyer T<sup>1</sup>, Skonieczna-Zydecka K<sup>2</sup>, Cortegoso Valdivia P<sup>3</sup>, Stenfors I<sup>4</sup>, Lutakov I<sup>5</sup>, Rondonotti E<sup>6</sup>, Pennazio M<sup>7</sup>, Marlicz W<sup>2</sup>, Baatrup G<sup>1</sup>, Koulaouzidis A<sup>8</sup>, Toth E<sup>4</sup>

**Institute** 1 Odense University Hospital, Odense, Denmark; 2 Pomeranian Medical University, Szczecin, Poland; 3 University Hospital of Parma, University of Parma, Parma, Italy; 4 Skåne University Hospital, Lund University, Malmö, Sweden; 5 University Hospital "Tsaritsa Yoanna - ISUL", Medical University Sofia, Sofia, Bulgaria; 6 Valduce Hospital, Como, Italy; 7 City of Health and Science University Hospital, Turin, Italy; 8 The Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

DOI 10.1055/s-0041-1724786

**Citation:** Bjoersum-Meyer T, Skonieczna-Zydecka K, Cortegoso Valdivia P et al. eP292 BOWEL PREPARATIONS REGIMENS FOR COLON CAPSULE ENDOSCOPY – A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S194.

**Aims** Colon Capsule Endoscopy (CCE) is an alternative to colonoscopy in certain clinical settings. High completion rates (CR) and adequate colon cleanliness rates (ACR) are prerequisites if CCE is to be implemented as an equivalent diagnostic tool. To address this, we conducted a systematic review investigating the efficacy of different bowel preparation regimens on CR and ACR in CCE.

**Methods** We performed a systematic literature search in PubMed, Embase, Cinahl, Web of Science and the Cochrane Library. Data were independently extracted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The primary outcome measures (CR and ACR) were retrieved from the individual studies and pooled event rates were calculated. The initial search yielded 571 hits. We subjected 104 full-text articles to review and 46 studies were included in the meta-analysis.

**Results** Thirty-four observational (OBS) studies (n=3,789) and 12 (RCTs) (n=1,214) were included. The overall CR was 0.798 (95% CI, 0.764-0.828). Sodium Phosphate (NaP) was the most frequently used booster with a CR of 0.830 (N=24, 95% CI, 0.781-0.871). The highest CR was observed for NaP + Gastrografin booster (N=2, CR=0.931, 95% CI, 0.820 - 0.976). Overall ACR was 0.768 (95% CI, 0.735-0.797) with the highest observed for Polyethylene glycol (PEG) + Magnesium citrate (N=4, ER=0.953, 95% CI, 0.896 -0.979). ACR for PEG was 0.790 (N=37, 95% CI, 0.750-0.826).

**Conclusions** In the largest meta-analysis on CCE we found that both CR and ACR are suboptimal. PEG laxative and NaP booster were the most commonly used. We were not able to show any superiority concerning CR and ACR for any of the abundant laxatives or boosters at a level of statistical significance. Well-designed studies focusing on CR and ACR should be performed in order to find the optimal preparation regimen.

## eP293 CIELAB AUTOMATIC COLONOSCOPY POST-EVALUATION

**Authors** Ciobanu A<sup>1</sup>, Luca M<sup>1</sup>, Oltean A<sup>2</sup>, Barboi O<sup>2</sup>, Drug V<sup>2</sup>

**Institute** 1 Institute of Computer Science, Romanian Academy, Iasi, Romania; 2 "Gr. T. Popa" University of Medicine and Pharmacy, Institute of Gastroenterology and Hepatology, "Sf. Spiridon" Emergency Hospital, Iasi, Romania

DOI 10.1055/s-0041-1724787

**Citation:** Ciobanu A, Luca M, Oltean A eP293 CIELAB AUTOMATIC COLONOSCOPY POST-EVALUATION. *Endoscopy* 2021; 53: S194.

**Aims** Creating an automatic software tool to objectively review and evaluate colonoscopy images. By using CIELAB color space we may detect feces residues, artefacts, and clear intestinal mucosa at pixel level in each frame. By

computing pixel percentages, we propose an objective quantification of bowel preparation degree and colonoscopy uninterpretable images.

**Methods** We took samples of each kind of pixels as small image rectangles inside representative regions of frames. Then, some colorprints defining each type of pixels are build automatically. Based on these colorprints, colonoscopy images are automatically processed and pixel representing feces, artefacts and clear intestinal mucosa are labeled with different colors and counted accordingly. Using several empirical thresholds, frames can be classified as usable or not for diagnosis.

**Results** We ran our method on a 12 minutes and 50 seconds colonoscopy, consisting of 19,245 frames. The color samples were taken out of the first 800 frames. The computer software found 138 frames (0.72%) with feces residues over 15%, 794 frames (4.12%) with artefacts over 30% and only 1,665 very good frames (8.65%) with feces residues below 5%, artefacts below 10% and over 50% of pixels representing clear intestinal mucosa. The rest of 16,648 frames (86.5%) had less than 50% intestinal mucosa pixels and therefore were not classified as diagnosis interpretable.

**Conclusions** We proposed a method to automatically analyze colonoscopy images to classify them as suitable or not to reach a diagnosis. It can be used to post-evaluate colonoscopies. Using a deep-learning algorithm this method may be successful for automatic live or recorded evaluation of a colonoscopy quality.

## eP294 PROSPECTIVE OBSERVATIONAL STUDY OF 1L NER1006 COMPARED TO 2L POLYETHYLENE GLYCOL IN INPATIENTS AND OUTPATIENTS

**Authors** Schiefer T<sup>1</sup>, Hollenbach M<sup>1</sup>, Tünnemann J<sup>1</sup>, Feisthammel J<sup>1</sup>, Karlas T<sup>1</sup>, Holler B<sup>1</sup>, Heindl M<sup>1</sup>, Bielow T<sup>1</sup>, Beer S<sup>1</sup>, Böhlig A<sup>2</sup>, van Bömmel F<sup>2</sup>, Hoffmeister A<sup>1</sup>

**Institute** 1 University of Leipzig Medical Center, Division of Gastroenterology, Medical Department II, Leipzig, Germany; 2 University of Leipzig Medical Center, Division of Hepatology, Medical Department II, Leipzig, Germany  
DOI 10.1055/s-0041-1724788

**Citation:** Schiefer T, Hollenbach M, Tünnemann J et al. eP294 PROSPECTIVE OBSERVATIONAL STUDY OF 1L NER1006 COMPARED TO 2L POLYETHYLENE GLYCOL IN INPATIENTS AND OUTPATIENTS. *Endoscopy* 2021; 53: S195.

**Aims** Bowel preparation for colonoscopy by polyethylene glycole (PEG) is effective but requires high-volume intake. Low-volume NER1006 was non-inferior or, at least in part, superior to PEG in prior studies. However, cleansing efficacy has not been analyzed for inpatients and outpatients specifically. Therefore, we performed a monocentric prospective observational study to address this issue.

**Methods** Patients undergoing colonoscopy were included and received NER1006 (1l) or PEG (2l) in split-dose. Cleansing was analyzed using Boston Bowel Preparation Scale (BBPS). Primary endpoint was cleansing efficacy in inpatients compared to outpatients. Proportions were analyzed by means of chi-square-test or student's t-test.

**Results** Out of 598 screened individuals we could include 288 patients to the study. Main exclusion criteria were prior colon resection and emergency endoscopies. Outpatients (184) used more often NER1006 (130) compared to PEG (54) whereas inpatients (104) received mainly PEG (78) in relation to NER1006 (26). Baseline characteristics age (60.7 vs. 59.0 y,  $p=0.656$ ) and gender (m: 58.3% vs. 48.5%,  $p=0.095$ ) were comparable between NER1006 and PEG groups. Main indications for colonoscopy were surveillance and diagnostic endoscopy. Effective bowel cleansing ( $BBPS \geq 6$ ) was comparable between NER1006 and PEG in both inpatients (NER1006: 16 of 26, PEG: 53 of 78,  $p=0.549$ ) and outpatients (NER1006: 98 of 130, PEG: 40 of 54,  $p=0.852$ ). In addition, acceptable overall bowel preparation quality ( $BBPS \geq 6$ ) was not significantly different between inpatients (69 of 104) and outpatients (138 of 184,  $p=0.117$ ).

**Conclusions** NER1006 was non-inferior in effective bowel cleansing for colonoscopy-preparation in both inpatients and outpatients.

## eP295 EFFECTIVENESS AND TOLERABILITY OF VERY LOW VOLUME (PLEINVUE) PREPARATION FOR COLONOSCOPY IN THE ELDERLY. RESULT OF A PROSPECTIVE STUDY

**Authors** Rodriguez Muñoz S<sup>1</sup>, Esteban Fernandez-Zarza C<sup>1</sup>, Arberas Diez B<sup>1</sup>, Ibañez Pinto A<sup>1</sup>, Martínez-Alcalá García C<sup>1</sup>, Lanás Gimeno A<sup>1</sup>  
**Institute** 1 Hospital Ruber Juan Bravo, Digestive Diseases, Madrid, Spain  
DOI 10.1055/s-0041-1724789

**Citation:** Rodriguez Muñoz S, Esteban Fernandez-Zarza C Arberas Diez B et al. eP295 EFFECTIVENESS AND TOLERABILITY OF VERY LOW VOLUME (PLEINVUE) PREPARATION FOR COLONOSCOPY IN THE ELDERLY. RESULT OF A PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S195.

**Aims** The use of colonoscopy in the elderly is increasing. However, the indication is debatable, in this population can prevent the morbidity and mortality of late colorectal cancer. Colonoscopy it has been considered challenging because of the difficulty in preparing this population.

Our study aims are to assess de effectiveness and tolerability of a low volume preparation (Pleinvue) in patients over 65 years old and evaluate the diagnostic yield of colonoscopic in them.

**Methods** 223 consecutive patients older than 65 years were collected, all patient receive a split dose preparation, with a non-rsidue diet in the 48 previous hours and respecting the night break. They can drink clear liquids ad libitum. The Charlston and BBPS index was evaluated, and also the symptoms perceived by the patients during the preparation and the diagnostic findings in the colonoscopy. All patients were also interviewed at least 48 hours after the procedure.

**Results** The median age was 73.7y. The median Charlston fragility index was 0.65. The BBPS was 7.96, and 62% was classified as 9. Only 6.6% of patients have a preparation qualified as inadequate without difference between sexes. 95.5% of patients report a good tolerance without any symptoms in 90.6% to the first dose and 87.4% to the second one. 3.6% be nauseous, and 4.5% had vomitos and a 0.9% general discomfort without interference with the quality of the preparation. The multivariate analysis don does not demonstrate any variable that affects significatively to bowel cleansing. The patients with a  $BBPS < 4$  have a higher Charlston index: 1.83 ( $p=0.005$ ). The ADR was 43.9% with 5.8% of large resectable lessons and 0.9 of CRC. There are no perforations, adverse events nor non-programmed hospital income.

**Conclusions** In the elderly, a low volume split dose (Pleinvue) was well tolerated and resulted in good preparation and then followed by high efficacy colonoscopy.

## eP296 FACTORS ASSOCIATED WITH DURATION OF COLONOSCOPY IN AN ELECTIVE OUTPATIENT SETTING

**Authors** O'Mahony A<sup>1</sup>, Andrews E<sup>1</sup>, Fleming C<sup>1</sup>  
**Institute** 1 University College Cork, Cork University Hospital Department of Surgery, Cork, Ireland  
DOI 10.1055/s-0041-1724790

**Citation:** 'Mahony AO, Andrews E, Fleming C. eP296 FACTORS ASSOCIATED WITH DURATION OF COLONOSCOPY IN AN ELECTIVE OUTPATIENT SETTING. *Endoscopy* 2021; 53: S195.

**Aims** Identify specific risk factors for prolonged colonoscopy in an outpatient endoscopy unit. Correlate results to optimise time management in endoscopy units

**Methods** Prospective survey cohort: 45 patients (15 male, 30 female)

Data retrieval: 4 prong approach

- Patient questionnaire (identify patient specific risk factors)
- Quantitative analysis document (measure total procedure time (TPT), caecal intubation time (CIT), withdrawal time (WT), Number of polyps identified/resected), Number of biopsies
- Bowel preparation measurement tool (Boston Bowel Preparation Scale (BBPS))



- Endoscopist questionnaire (identify experience in colonoscopy i.e. Number of procedures conducted)

**Results** Endoscopist experience has an impact on TPT ( $P = 0.003$ ,  $Eta2 = 0.247$ ).

Experienced endoscopists had on average a TPT 50% shorter than their less experienced counterparts. Experience was segregated based on number of procedures performed (<100, 100-500, 500-1000, >1000)

The following were also identified as impacting on TPT

- Polyp detection ( $P = 0.001$ ,  $Eta2 = 0.233$ )
- Number of polypectomies per procedure ( $P = <0.0001$ ,  $Eta2 = 0.436$ ),
- Number of biopsies ( $P = 0.026$ ,  $Eta2 = 0.166$ ).

Bowel preparation grade (according to Boston Bowel Preparation Scale) has an impact on CIT ( $P = 0.03$ ,  $Eta2 = 0.241$ ) with an inverse relationship between duration and BP grade.

**Conclusions** To clear the backlog facing endoscopy units a transient change may be required. The single greatest modifiable risk factor is endoscopist experience. Therefore, movement of experienced endoscopists into a strict procedural role may be suitable temporarily or the employment/training of more nurse specialists to fulfil the gap. Also, strict bowel cleansing agent compliance must continue to be encouraged.

### eP297 IMPACT OF ANTHROPOMETRIC DATA ON THE TOLERANCE OF NON-SEDATED COLONOSCOPY

**Authors** Ben Farhat F<sup>1</sup>, Bellil N<sup>2</sup>, Sabbah M<sup>1</sup>, Trad D<sup>1</sup>, Bibani N<sup>1</sup>, Ouakaa A<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute** 1 Habib Thameur Hospital, Gastroenterology, Tunis, Tunisia; 2 Habib Thameur Hospital, Gastroenterology, tunis, Tunisia

DOI 10.1055/s-0041-1724791

**Citation:** Ben Farhat F, Bellil N, Sabbah M et al. eP297 IMPACT OF ANTHROPOMETRIC DATA ON THE TOLERANCE OF NON-SEDATED COLONOSCOPY. *Endoscopy* 2021; 53: S196.

**Aims** The aim of our study was to evaluate the relationship between anthropometric data and tolerance of non-sedated colonoscopy.

**Methods** This is a prospective study that included all colonoscopies performed by the same operator in our endoscopy unit over a period of 4 months from June 2020 to September 2020. The exclusion criteria were: history of abdominal surgery, presence of abdominal hernia and diverticular disease. Tolerance was assessed using the Visual Analog Scale (VAS). Poor tolerance was defined by a VAS greater than 7. Anthropometric data collected were weight, body mass index (BMI) and waist circumference.

**Results** Forty-two patients were included in our study. The mean age was 58.7 years [28.84]. The sex ratio (M/F) was 1.8. The two most frequent indications for colonoscopy were transit disorders such as constipation and diarrhea in 43% of cases and iron deficiency anemia in 22% of cases. The mean Boston score was 6/9. Six colonoscopies were incomplete due to poor tolerance. Catheterization of the last ileal loop was performed in 8 patients. Regarding anthropometric data, twenty-three patients had a BMI less than 25 kg/m<sup>2</sup> (54.7%). Waist circumference ranged from 70cm to 138cm with an average of 96cm. Poor tolerance was noted in 17 patients (40.4%). A BMI less than 25 was associated with poor tolerance of colonoscopy ( $p=0.006$ ) and a waist circumference less than 95 cm was also associated with poor tolerance ( $p=0.001$ ) with a sensitivity of 86% and a specificity of 64%. A BMI less than 21 kg/m<sup>2</sup> was associated with poor tolerance in 100% of cases.

**Conclusions** In order to limit incomplete colonoscopies and to ensure better exploration of the colon and the last ileal loop, patients with a BMI less than 21 kg/m<sup>2</sup> and a waist circumference less than 95 cm should be scheduled for colonoscopy under sedation from the outset.

### eP298 SYSTEMIC MASTOCYTOSIS THE GREAT MIMICKER - A RARE HAEMATOLOGICAL NEOPLASM PRESENTING WITH DIARRHOEA, ANAPHYLAXIS AND RASH

**Authors** Muller TL<sup>1</sup>, Van Der Merwe K<sup>1</sup>, Said A<sup>1</sup>, Steele C<sup>1</sup>, Crosnoi D<sup>1</sup>, Papanikolaou M<sup>2</sup>, O'Dowd G<sup>3</sup>, Parihar V<sup>1</sup>

**Institute** 1 Letterkenny University Hospital, Gastroenterology, Letterkenny, Ireland; 2 Letterkenny University Hospital, Haematology, Letterkenny, Ireland; 3 Letterkenny University Hospital, Histopathology, Letterkenny, Ireland  
DOI 10.1055/s-0041-1724792

**Citation:** Muller TL, Van Der Merwe K, Said A et al. eP298 SYSTEMIC MASTOCYTOSIS THE GREAT MIMICKER - A RARE HAEMATOLOGICAL NEOPLASM PRESENTING WITH DIARRHOEA, ANAPHYLAXIS AND RASH. *Endoscopy* 2021; 53: S196.

**Aims:** Background Eosinophilic Gastrointestinal Disorders (EGIDs) cause gastrointestinal symptoms with eosinophilia (biochemically and histologically). A history of anaphylaxis raises suspicion that Systemic Mastocytosis (SM) is the rare yet highly likely differential. In these rare cases, serum tryptase levels with tissue staining for c-kit (histological marker of mast cells) confirms the diagnosis since mast cells/eosinophils are indistinguishable on routine histological stains. SM, a haematological neoplasm characterized by accumulation of clonal mast cells in systemic tissues, causes debilitating symptoms.

**Methods: Case presentation** A 59-year-old caucasian female presented with acute bloody diarrhoea (ten episodes over two days). Her comorbidities included: eosinophilic enterocolitis and urticaria pigmentosa – previously diagnosed on colonic/skin biopsies for workup of chronic diarrhoea with generalized macular-papular rash. CT initially revealed enlarged (> 2cm) small bowel mesenteric lymph nodes non-specifically reactive on biopsy. Her past medical history included anaphylaxis to anti-inflammatories. Biochemically she had persistent peripheral eosinophilia. Recently, CT showed stable nodes, and colonoscopy revealed cobblestone mucosa suggestive of crohn's colitis. Histological impression, however, was in keeping with eosinophilic enterocolitis. Serum tryptase, requested to identify any unifying aetiology for cutaneous mastocytosis and systemic symptoms, was persistently elevated. To corroborate, restaining of histological specimens for mast cells showed c-kit positivity.

**Results: Diagnosis** SM, in this case, diagnosed by fulfilment of one minor (serum total tryptase >20ng/ml) and one major (> 15 mast cells in aggregates in extracutaneous tissues) criterion of the WHO guidelines.

**Discussion** EGIDs have protean manifestations and are diagnosed when symptoms of gastrointestinal dysfunction are accompanied by histological eosinophilia after exclusion of other differentials. Beyond the standard differentials for EGIDs, a history of anaphylaxis and skin manifestations might allude to the diagnosis of SM.

**Conclusions** Gastrointestinal manifestations of SM are a rare yet easily treated cause of persistent gastrointestinal dysfunction. Our patient had cessation of gastrointestinal symptoms on combined H1/H2 antihistamines.

### eP299 DIAGNOCTIC YIELD OF COLONOSCOPY IN CHRONIC CONSTIPATION: COMPARATIVE STUDY ACCORDING TO THE AGE

**Authors** Bradai S<sup>1</sup>, Khsiba A<sup>1</sup>, Medhioub M<sup>1</sup>, Mahmoudi M<sup>1</sup>, Ben mohamed A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

DOI 10.1055/s-0041-1724793

**Citation:** Bradai S, Khsiba A, Medhioub M et al. eP299 DIAGNOCTIC YIELD OF COLONOSCOPY IN CHRONIC CONSTIPATION: COMPARATIVE STUDY ACCORDING TO THE AGE. *Endoscopy* 2021; 53: S196.

**Aims** Constipation can be the expression of an organic or functional disease. A colonoscopy is required for patients with chronic constipation resistant to symptomatic treatments or with alarm symptoms. The aim of this work was to

assess the value of colonoscopy in the exploration of chronic constipation according to the patient's age.

**Methods** This is a comparative retrospective study including all patients who had a colonoscopy for the exploration of chronic constipation between 2017 and 2018. The patients were divided into two groups:

Groups 1 (G1): included patients less than 50 years old.

Groups 2 (G2): included patients over 50 years old

We compared the epidemiological, clinical and endoscopic data between the two groups.

**Results** A total of 190 cases were included. The mean age was 61.5 years (21-97 years). G1 included 44 patients (23%) while G2 included 146 patients (77%). A family history of colorectal cancer was found in 15 cases (G1: 5 vs G2: 10;  $p = 0.146$ ). Constipation as the sole symptom was more frequent in G2 (G1: 20.5% vs G2: 35%;  $p = 0.029$ ). Colonoscopy was normal in 54% (G1: 66% vs G2: 50%). When it was pathological, it showed: recto-colic polyps in 28% (G1: 18% vs G2: 31%), colonic diverticulosis in 14% (G1: 7% vs G2: 16%), colorectal neoplasia in 9% (G1: 7% vs G2: 10%), solitary rectal ulcer in 1% (G1: 0% vs G2: 1.3%) and angiodysplasia in 3% of cases (G1: 0% vs G2: 4%). In univariate analysis, we found an association between age > 50 years and a pathological colonoscopy ( $p = 0.025$ ). Rectal bleeding was associated with pathological colonoscopy ( $p = 0.011$ ). The presence of polyps was higher in G2 ( $p = 0.041$ ).

**Conclusions** In our study, colonoscopy indicated for chronic constipation in elderly (>50 years) is associated with high diagnostic yield especially when associated with rectal bleeding.

## eP300 CONTRIBUTION OF COLONOSCOPY AFTER AN EPISODE OF COMPLICATED DIVERTICULAR DISEASE

**Authors** Bradai S<sup>1</sup>, khsiba A<sup>1</sup>, Mahmoudi M<sup>1</sup>, Medhioub M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Hamzaoui I<sup>1</sup>, MM Azzouz<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724794

**Citation:** Bradai S, khsiba A, Mahmoudi M et al. eP300 CONTRIBUTION OF COLONOSCOPY AFTER AN EPISODE OF COMPLICATED DIVERTICULAR DISEASE. *Endoscopy* 2021; 53: S197.

**Aims** Computed tomography (CT) is commonly used for the diagnosis of complicated diverticular disease. However, colonoscopy is generally recommended after an episode of complicated diverticular disease to rule out an underlying malignancy. The aim of our study is to investigate the value of this examination in patients with complicated diverticular disease of the colon.

**Methods** This is a retrospective study including all patients explored by colonoscopy after an episode of complicated diverticular disease between January 2017 and December 2019. Patients with colonic diverticular bleeding were excluded from our study.

**Results** We included 42 patients with a mean age of 61.5 years (43-85 years). These patients were divided into 18 men and 24 women. Diverticulosis was complicated by diverticulitis in 29 cases (69%), perforation in 10 cases (24%) and deep abscess in 3 cases (7%). A favorable outcome was obtained after the introduction of antibiotic therapy in 76% of cases. The remaining patients underwent surgical treatment (34%). Colonoscopy was performed within 54 days after the acute episode (20 to 90 days). It showed diverticula in the sigmoid colon in 36 cases, the left colon in 25 cases, the transverse colon in 5 cases, the right colon in 5 cases and diffuse in 4 cases. Colonic polyps were present in 10 patients (24%) with a mean size of 8 mm (5 to 12 mm). Histological examination showed two tubular adenomas with low grade dysplasia and two tubular adenomas with high grade dysplasia. No case of malignancy was observed.

**Conclusions** In our study, after an episode of complicated diverticulosis, colonoscopy was pathological in 24% of cases. No cases of malignancy were observed.

## eP301V UTILITY OF THE OTSC-OVESCO SYSTEM FOR THE TREATMENT OF COLONIC PERFORATIONS DURING ENDOSCOPIC PROCEDURES

**Authors** Sábado F<sup>1,2</sup>, Silva Pomarino MP<sup>1</sup>, Pitarch García J<sup>1</sup>, Plana Campos L<sup>1</sup>, Martínez Tormo V<sup>1</sup>, García Bolós A<sup>1</sup>

**Institute** 1 Consorcio Hospitalario Provincial de Castellón, Gastroenterology/ Endoscopy Unit, Castellón, Spain; 2 Universitat Jaume I, Department of Medicine, Castellón, Spain

**DOI** 10.1055/s-0041-1724795

**Citation:** Sábado F, Silva Pomarino MP, Pitarch García J et al. eP301V UTILITY OF THE OTSC-OVESCO SYSTEM FOR THE TREATMENT OF COLONIC PERFORATIONS DURING ENDOSCOPIC PROCEDURES. *Endoscopy* 2021; 53: S197.

**Methods and Results** We present 3 endoscopic perforations produced during colonoscopy since OTSC-OVESCO became available in the endoscopy unit (January 2016 - October 2020)

- 63-year-old man in TAMIS´scar
- 88-year-old woman in a sigma diverticulum
- 66-year-old woman with a large rectal perforation

All three cases were resolved with the OVESCO system. All patients were admitted for control, being discharged after an average of 7 days without complications.

**Conclusions** Early detection and closure in case of perforation are the key factors for a favourable outcome. The use of OTSC-OVESCO clips allows immediate endoscopic treatment, early discharge, avoiding surgery.

## eP302 CAP ASSISTED ENDOSCOPIC MUCOSAL RESECTION FOR RECTAL NEUROENDOCRINE TUMOURS: AN EFFECTIVE OPTION

**Authors** João M<sup>1</sup>, Areia M<sup>1</sup>, Elvas L<sup>1</sup>, Alves S<sup>1</sup>, Saraiva S<sup>1</sup>, Brito D<sup>1</sup>, Cadime AT<sup>1</sup>

**Institute** 1 Portuguese Oncology Institute of Coimbra, Gastroenterology, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724796

**Citation:** João M, Areia M, Elvas L et al. eP302 CAP ASSISTED ENDOSCOPIC MUCOSAL RESECTION FOR RECTAL NEUROENDOCRINE TUMOURS: AN EFFECTIVE OPTION. *Endoscopy* 2021; 53: S197.

**Aims** The incidence of rectal neuroendocrine tumours (NETs) is increasing and most small rectal NETs can be treated endoscopically. The optimal endoscopic approach is still under discussion. Conventional (inject and cut) endoscopic mucosal resection (EMR) leads to frequent incomplete resection. Endoscopic submucosal dissection allows higher complete resection rates but is also associated with higher complication rates. Some studies suggested modified (cap assisted) EMR as an effective and safe alternative. This study aimed to evaluate the efficacy and safety of a type of cap assisted EMR for rectal NETs < 10mm without *muscularis propria* invasion or lymphovascular infiltration.

**Methods** Single centre prospective study including consecutive patients with rectal NETs ≤ 10mm without *muscularis propria* invasion or lymphovascular invasion confirmed by endoscopic ultrasound, submitted to cap assisted EMR between 2017 and 2020. Demographic, endoscopic, histopathologic and follow-up data was retrieved from medical records.

**Results** A total 12 patients (male: 58.3%; n = 7) with a median age of 61 (44-76) years were included. Most lesions were located at the lower rectum (75%, n = 9) and median lesion size was 6 (4-10) mm. On endoscopic ultrasound evaluation, 75% (n = 9) tumours were limited to *muscularis mucosa*. Overall, 16.7% (n = 2) were recurrent NETs and had been pre-treated by conventional EMR. Resection was macroscopically and histologically complete in all cases. Histologic analysis revealed grade 1 tumour in 9 (75%) and grade 2 tumour in 3 (25%). Ki-67 index was inferior to 2% in 83.3% (n = 12). No immediate or delayed adverse events were reported. Follow up was available in 75% (n = 9)

cases with median follow-up of 12 (6–36) months and no evidence of residual or recurrent lesion on endoscopic or endoscopic ultrasound evaluation

**Conclusions** Cap assisted EMR is fast, safe and effective for resection of small rectal NETs without risk factors. Prospective comparative trials are needed to define the best endoscopic approach.

### eP303 COLONIC BIOPSIES IN PATIENTS WITH NORMAL COLONOSCOPIES: INDICATIONS AND CONTRIBUTION

**Authors** Bradai S<sup>1</sup>, Mahmoudi M<sup>1</sup>, khsiba A<sup>1</sup>, Nakhli A<sup>1</sup>, Ben mohamed A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz Mm<sup>1</sup>

**Institute 1** Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724797

**Citation:** Bradai S, Mahmoudi M, khsiba A et al. eP303 COLONIC BIOPSIES IN PATIENTS WITH NORMAL COLONOSCOPIES: INDICATIONS AND CONTRIBUTION. *Endoscopy* 2021; 53: S198.

**Aims** Colonic biopsies in patients with normal colonoscopy are indicated essentially during chronic diarrhea but may find their place in other situations. The aim of our work is to determine the different indications for colonic biopsies with normal mucosa and assess their utility.

**Methods** This is a retrospective, descriptive, single-center study during 5 years including all patients having a normal colonoscopy with multiple colonic biopsies.

**Results** During the study period, 217 patients were collected. These were 123 men (56.68%) and 94 women (43.31%). The mean age of our patients was 47.8 years [12–84 years]. The indications of colonoscopy were dominated by chronic diarrhea in 139 cases (64%). Other indications were found: colonic thickening (n = 27), recurrent perianal suppurations (n = 21), alternating diarrhea and constipation (n = 17), staging of gastric lymphoma (n = 9) and primary sclerosing cholangitis (n = 4). Ileocolic biopsies were normal in 148 cases (68.2%). Histological examination was conclusive in 39 cases (18%) and shows lesions compatible with: microscopic colitis in 27 cases (12.44%), eosinophilic colitis in 9 cases (4.14%) and Crohn's disease in 3 cases. In 34 cases (15.66%), colonic biopsies were not contributory and they find a non-specific inflammatory infiltrate.

**Conclusions** In our study, colonic biopsies with normal colonoscopy made it possible to establish a diagnosis in 18% of our patients. These results clearly demonstrate that multiple biopsies of the rectum and colon are useful in patients with abdominal symptoms, particularly in the case of diarrhea, and normal endoscopy.

### eP304 THE RELATIONSHIP BETWEEN DIVERTICULAR DISEASE AND NEOPLASTIC COLORECTAL LESIONS

**Authors** Jlassi H<sup>1</sup>, Sabbah M<sup>1</sup>, Bellil N<sup>1</sup>, Trad D<sup>1</sup>, Bibani N<sup>1</sup>, Ouakaa A<sup>1</sup>, Elloumi H<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute 1** Faculty of Medicine of Tunis, Habib Thameur Hospital, Tunis, Tunisia  
**DOI** 10.1055/s-0041-1724798

**Citation:** Jlassi H, Sabbah M, Bellil N et al. eP304 THE RELATIONSHIP BETWEEN DIVERTICULAR DISEASE AND NEOPLASTIC COLORECTAL LESIONS. *Endoscopy* 2021; 53: S198.

**Aims** Evolving data suggested that diverticulosis and neoplastic colorectal lesions share a common epidemiological trends and risk factors related to lower fiber diet and increasing age. However, the data on a relationship between diverticular disease (DD) and neoplastic colorectal lesions (NCL) are conflicting.

The aim is to determine the association between diverticulosis and NCL in a Tunisian population.

**Methods** We conducted a retrospective study on patients who underwent colonoscopic examination between January 2019 and December 2019 in a

university hospital in Tunisia. The presence of diverticulosis and neoplastic colorectal lesions was recorded using colonoscopy reports. Diverticulosis was defined as the presence of one or more colonic diverticula. NCL constitutes advanced adenoma (polyps greater than 1cm with villous histology or adenoma with high grade of dysplasia or invasive cancer) as well as colorectal cancer. The prevalence of NCL between individuals with and those without DD was compared. Multiple logistic regression was done to analyze the relationship between DD and NCL.

**Results** During the study period, 708 colonoscopies were performed. The prevalence of colonic diverticulosis was 0.1% (70/708). Colonic diverticula predominated in the left colon and the sigmoid colon in 60% and 53% of cases, respectively. Bilateral localization was found in 34.3% of cases. NCL were found in 77 patients; 31 patients (40%) had colorectal cancer and 46 patients (60%) had advanced adenomas (including 7 cases with high grade dysplasia adenomas). The left colon was the most frequent location of NCL (38%). Diverticular disease was not associated with increased odds of NCL (OR=0.7, 95% CI[0.4–1.5], p=0.47). Multivariable logistic regression analysis indicated that left-sided diverticulosis was not associated with an increased risk of NCL (OR 1.33; 95% CI[0.14–12.6]; p=0.8). Although, there was a positive correlation between diverticulosis and adenomas (p=0.008, Spearman = 0.3).

**Conclusions** In our study, colonic diverticulosis does not appear to be associated with an increased risk of neoplastic colorectal lesions.

### eP305 CONFOCAL LASER ENDOMICROSCOPY IN THE COLONIC MUCOSA OF PATIENTS WITH DIVERTICULAR DISEASE: INTERIM RESULTS

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Cifuentes C<sup>1</sup>, Alvarado H<sup>1</sup>, Del Valle R<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute 1** Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

**DOI** 10.1055/s-0041-1724799

**Citation:** Robles-Medranda C, Oleas R, Puga-Tejada M et al. eP305 CONFOCAL LASER ENDOMICROSCOPY IN THE COLONIC MUCOSA OF PATIENTS WITH DIVERTICULAR DISEASE: INTERIM RESULTS. *Endoscopy* 2021; 53: S198.

**Aims** We aimed to describe the role of peri-diverticular and colonic mucosal in patients with colonic diverticular disease using confocal laser endomicroscopy.

**Methods** An observational, prospective, single-center trial. Consecutive patients evaluated with colonoscopy for screening and diagnostic colonoscopy were invited to participate. Patients were evaluated with a high-definition colonoscopy and scored using the Diverticular Inflammation and Complication Assessment (DICA) score. The peri-diverticular and colonic mucosa were evaluated via pCLE for crypt fusion and distortion, bright epithelium, and dilated-prominent branching vessels. Complicated diverticular disease will be evaluated in a 24-month follow-up.

**Results** We included sixty-three patients for analysis. The median age was 64 years, 50.8% were female. 47/63 (74.6%) of patients have at least one peridiverticular inflammation criteria on pCLE in comparison 16/63 (25.9%) patients without inflammation. The most common presenting symptom was abdominal pain in 73% of patients. Overall, 53/63 (84.1%) of patients had a DICA I score, whereas 15.9% of patients had a DICA II score. Peridiverticular pCLE inflammation predicts a complicated diverticular disease based on a DICA score of II, with a sensitivity >80% in the ascending, transverse, descending, and sigmoid colon; and a 100% negative predictive value (NPV) in all colonic segments. In terms of colonic mucosal inflammation, the pCLE inflammation criteria have an NPV >80% in all colonic segments. 56/63 of patients exhibited colonic mucosal inflammation based on pCLE criteria, demonstrating a significant increase in the detection of inflammatory findings in patients with diverticular disease (Table 1). Patients will be follow-up up to twenty-four months for

the complicated diverticular occurrence and evaluate the role of these inflammatory findings (NCT04173182).

**Conclusions** Confocal laser endomicroscopy is a promising marker to detect inflammation in diverticular disease, even in those patients without inflammation on colonoscopy. Peri-diverticular inflammation may play role in predicting a complicated disease that should be evaluated in the follow-up study.

► **Tab. 1**

	Present on white light colonoscopy and pCLE	Absent at white light colonoscopy but present on pCLE	p-value
Edema or hyperemia, n (%)	4 (7.1)	52 (92.9)	<0.001
Erosions, n (%)	1 (1.8)	55 (98.2)	<0.001
Segmental colitis associated with diverticulosis	5 (8.9)	51 (91.1)	<0.001

### eP306 DIVERTICULOSIS AND COLORECTAL ADENOMAS: ANY RELATIONSHIP?

**Authors** Laabidi S<sup>1</sup>, Ennaifer R<sup>1</sup>, Kefi M<sup>1</sup>, Ghribi M<sup>1</sup>, Bouchabou B<sup>1</sup>, Bougassas W<sup>1</sup>, Ben Nejma H<sup>1</sup>

**Institute 1** Faculty of Medicine of Tunis/Mongi Slim La Marsa, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0041-1724800

**Citation:** Laabidi S, Ennaifer R, Kefi M et al. eP306 DIVERTICULOSIS AND COLORECTAL ADENOMAS: ANY RELATIONSHIP? Endoscopy 2021; 53: S199.

**Aims** Colonic diverticulosis and colorectal adenomas share the same risk factors such as advanced age, physical inactivity, and western diet. Our study aimed at exploring the association between diverticulosis and colorectal adenomas.

**Methods** This is a cross-sectional study of patients who have had a colonoscopy. Two groups were identified: Group 1: Patients with diverticulum on colonoscopy and group 2: Patients without diverticulum on colonoscopy. Data about patient's demographic characteristics, colonoscopy, polypectomy and pathological examination were collected. Patients with chronic inflammatory bowel disease, colorectal neoplasia, complicated colonic diverticulosis as well as those with incomplete or poorly prepared colonoscopy (Boston score <7) were excluded.

**Results** A total of 114 patients were included 60 (52%) patients=Group 1, 54 (48%) patients=Group 2. Patient's demographic and clinical features were comparable in both groups attested by: median age (63 y. vs. 59 y.; p=0.9), gender (sex ratio M/F=1.2 vs. 0.74; p=0.15), body mass index (27 kg/m<sup>2</sup> vs. 28 kg/m<sup>2</sup>; p=0.6) as well as for diabetes mellitus (37% vs. 25%; p=0.27) and high blood pressure (39% vs. 40%; p=0.9). There was a higher prevalence of colorectal polyps (50% vs. 30%; p=0.04, OR =1.6; 95% CI: 1-1.27) and adenomas (96% vs. 77%; p=0.02, OR = 2; 95% CI: 1-5) in the diverticular vs. non diverticular patients. However, no significant association between diverticulosis and high-grade dysplasia or carcinoma in situ was revealed.

**Conclusions** In our series, diverticulosis was significantly associated with a higher risk of polyps and adenomas, which is consistent with the results of Western populations.

### eP307 LIKE A THIEF IN THE NIGHT: A RARE CASE OF ANORECTAL TUBERCULOSIS IN AN HIV-POSITIVE FILIPINO FEMALE

**Author** Guevarra TP<sup>1</sup>

**Institute 1** The Doctors' Hospital, Inc., Internal Medicine, Bacolod City, Philippines

DOI 10.1055/s-0041-1724801

**Citation:** Guevarra TP. eP307 LIKE A THIEF IN THE NIGHT: A RARE CASE OF ANORECTAL TUBERCULOSIS IN AN HIV-POSITIVE FILIPINO FEMALE. Endoscopy 2021; 53: S199.

**Aims** This report aims to discuss a case of a 39-year old HIV positive Filipino female who presented with purulent anal discharges, painful anal swelling, and fistula-in-ano. It also aims to highlight the importance of including anorectal tuberculosis in the differential diagnoses of patients presenting with anal discharges and fistula-in-ano. Specifically, it aims to discuss the clinical manifestations, diagnosis and management of anorectal tuberculosis.

**Methods** Laboratories revealed anemia and leukocytosis with neutrophilic predominance. Patient had no evidence of active tuberculosis on admission. Colonoscopy revealed thickened rectal mucosa with pseudo polyps, narrowing and thickening of the rectal mucosa. CT scan of the abdomen showed rectal wall thickening. Further workup showed AFB positive anal discharges and fistula tract biopsy suggestive of tuberculosis.

**Results** After Fistulotomy and Sigmoid Loop Colostomy and treatment with anti-Koch's medications, anal discharges lessened, and leukocytosis resolved.

**Conclusions** Anorectal tuberculosis should be included in the differential diagnosis of ulcerative lesions of the anal and perianal regions even when no primary pulmonary focus is found, especially in regions endemic for TB and the immunocompromised population, since treatment with antituberculosis therapy can prevent its complications such as obstruction and sepsis.

### eP308V SNARE MODIFICATION FACILITATES HUGE COLONIC FOREIGN BODY EXTRACTION AND AVOIDS SURGERY

**Authors** Amer H<sup>1</sup>, Afify S<sup>2</sup>, Amer A<sup>3</sup>, Erfan M<sup>4</sup>, Afifi M<sup>5</sup>

**Institute 1** Misr University for Science and Technology, Internal Medicine, Giza, Egypt; **2** National Hepatology and Tropical Medicine Research Institute, Gastroenterology and Hepatology, Cairo, Egypt; **3** Amerscope Endoscopy Centre, Giza, Egypt; **4** Misr University for Science and Technology, General Surgery, Giza, Egypt; **5** Al Azhar University, Gastroenterology and Hepatology and infectious disease, Cairo, Egypt

DOI 10.1055/s-0041-1724802

**Citation:** Amer H, Afify S, Amer A et al. eP308V SNARE MODIFICATION FACILITATES HUGE COLONIC FOREIGN BODY EXTRACTION AND AVOIDS SURGERY. Endoscopy 2021; 53: S199.

A 56 years old male presented with abdominal distension and absolute constipation, X-ray showed a huge foreign body and PR showed empty rectum. Colonoscopy was done under surgical observation, it was seen at 35 cm from the anal orifice. Since, it had a wide diameter, multiple trials of gripping it failed because of the slippery surface and the straight forward opening snare, modification of the mega snare was done by pending the neck of the snare to open in right angle to be perpendicular to the sheath which grasped and extracted it successfully from the colon from the first trial.



## eP309V DIFFUSE CAVERNOUS HAEMANGIOMA OF SIGMOID AND RECTUM (DCHR) CASE REPORT

**Authors** Moutzoukis M<sup>1</sup>, Foussekis F<sup>1</sup>, Lamouri C<sup>1</sup>, Mousavere I<sup>1</sup>, Theopistos V<sup>1</sup>, Mitselos I<sup>2</sup>, Christodoulou D<sup>1</sup>

**Institute** 1 University Hospital of Ioannina, Department of Gastroenterology, Ioannina, Greece; 2 General Hospital of Ioannina, Department of Gastroenterology, Ioannina, Greece

**DOI** 10.1055/s-0041-1724803

**Citation** Moutzoukis M, Foussekis F, Lamouri C et al. eP309V DIFFUSE CAVERNOUS HAEMANGIOMA OF SIGMOID AND RECTUM (DCHR) CASE REPORT. *Endoscopy* 2021; 53: S200.

A 38 years old female patient came to our hospital with recurrent painless rectal bleeding episodes. She reported intermittent episodes of rectal bleeding for about 6 months attributed to hemorrhoids. She underwent a colonoscopy and big vascular lesions with bleeding elements on them were found. There were no other significant findings from the rest of the colon. Gastroscopy and endoscopic capsule were normal. The lesion was about 15 cm long in the sigmoid. After a multidisciplinary meeting surgical resection was decided. Pathology of the lesion revealed a DCHR and after the resection she remains asymptomatic with no recurrence of bleeding.

## eP310 ENDOSCOPIC RESECTION OF COLONIC LIPOMAS: A SINGLE TERTIARY CENTRE EXPERIENCE

**Authors** Chong L<sup>1</sup>, Hebbar S<sup>1</sup>

**Institute** 1 Royal Stoke University Hospital, Gastroenterology, Stoke-on-Trent, United Kingdom

**DOI** 10.1055/s-0041-1724804

**Citation** Chong L, Hebbar S. eP310 ENDOSCOPIC RESECTION OF COLONIC LIPOMAS: A SINGLE TERTIARY CENTRE EXPERIENCE. *Endoscopy* 2021; 53: S200.

**Aims** Endoscopic resection of colonic lipomas is warranted if lesions are large (> 2 cms) and symptomatic. We aimed to report the patient characteristics, technical outcomes and clinical improvement in patients who underwent endoscopic resection of colonic lipomas at our tertiary institution.

**Methods** A retrospective review of a prospective database of consecutive patients who underwent endoscopic resection of colonic lipomas between December 2013 and November 2019 was conducted. All resections were performed by a single experienced endoscopist.

**Results** 28 patients (15 females) with a mean age of 63.5 years old (range 41 – 81 years) were identified. The indications for resection were diarrhoea (n = 10), constipation (n = 6), alternating bowel habit (n = 10) and PR Bleeding (n = 2). The mean size of the lipoma was 3.3 cm (range 1.5 – 6.5cm). The locations of the lipoma were caecum/ileocaecal valve (n = 9), right colon (n = 8), and left colon (n = 11). The method of resection was by strangulation of the lipomatous lesion for 5-10 mins with a dedicated endoscopic ligation device (PolyLoop). This was followed by needle knife mucosal incision in select cases to help the fat extrude out. Follow-up endoscopy was performed in 13 of 28 patients which demonstrated complete resection of the lipoma and scarring in 7 patients. The 30-day adverse event rate was 3.5% (1 patient with ileo caecal valve lipoma developed sub acute bowel obstruction requiring laparotomy). 1 year follow-up clinical data regarding symptom profile was available for 27 patients and 70% of patients (n = 19) had improvement of symptoms post resection.

**Conclusions** In our cohort of patients, majority of symptomatic colonic lipomas were managed endoscopically irregardless of the size and location of the lesion. Symptom improvement occurred in the majority of patients. Careful patient selection to identify appropriate patients for endoscopic resection is paramount.

## eP311V ENDOSCOPIC DIAGNOSIS OF HISTOLOGY TYPE OF COLON POLYP BY USING ACETO ACID CHROMOENDOSCOPY

**Author** Ageykina N<sup>1</sup>

**Institute** 1 Lomonosov Moscow State University, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724805

**Citation** Ageykina N. eP311V ENDOSCOPIC DIAGNOSIS OF HISTOLOGY TYPE OF COLON POLYP BY USING ACETO ACID CHROMOENDOSCOPY. *Endoscopy* 2021; 53: S200.

**Aim and background** to improve of optical diagnosis of colon polyp histology during colonoscopy.

**Methods** During colonoscopy, 1.5%-acetic acid, 5ml, was sprayed onto the identified polyps. Polyps and surrounding mucosa were observed endoscopically for 2 minutes. Then polyps were removed and sent for pathology. Use of acetic acid leads to fast acetowhitening reaction of polyps and surrounding mucosa. 2 groups were distinguished:

1. Loss of acetowhitening (LAW) of polyps occurs earlier than LAW of surrounding mucosa
2. LAW of polyps occurs later than LAW of surrounding mucosa

**Conclusion** acetic acid chromoendoscopy is an effective clarifying method for diagnosis of histological type.

## eP312 PREDICTORS OF FAILURE OF PAPILLA CANNULATION DURING ERCP FOR COMMON BILE DUCT STONES

**Authors** Nakhli A<sup>1</sup>, Sabbah M<sup>1</sup>, Bellil N<sup>1</sup>, Trad D<sup>2</sup>, Ouakaa A<sup>1</sup>, Elloumi H<sup>1</sup>, Bibani N<sup>1</sup>, Gargouri D<sup>1</sup>

**Institute** 1 Faculté de Médecine de Tunis, Gastroenterologie, Habib Thameur Hospital, Tunis, Tunisia; 2 Faculté de Médecine de Tunis, Gastroenterologie, Habib Thameur Hospital, TUNIS, Tunisia

**DOI** 10.1055/s-0041-1724806

**Citation** Nakhli A, Sabbah M, Bellil N et al. eP312 PREDICTORS OF FAILURE OF PAPILLA CANNULATION DURING ERCP FOR COMMON BILE DUCT STONES. *Endoscopy* 2021; 53: S200.

**Aims** Duodenal papilla cannulation is the first step in endoscopic retrograde cholangiopancreatography (ERCP). When cannulation of the papilla is difficult, it increases the risk of post-ERCP complications. In this case, the use of second-line endoscopic techniques should be considered (precut, infundibulotomy). The objective of this study was to determine the predictors of failure of papilla cannulation during ERCP for common bile duct (CBD) stones.

**Methods** This is a retrospective study that included all patients who had ERCP for common bile duct stones between January 2014 and December 2017. Patients with bilio-pancreatic tumor or with coagulation disorders were not included in the study. Epidemiological, clinical and para-clinical data were collected and predictive factors for failure of papilla catheterization were sought by univariate analysis (SPSS software, p significant if <0.05).

**Results** We included 181 patients whose mean age was 64 years [22-103 years] with a sex ratio M/W = 0.41. The main indications for ERCP were residual or recurrent lithiasis (69%, n = 129) or sequential treatment (18%, n = 33). Cannulation of the papilla by standard techniques could be performed in 127 patients (70.1%). In patients whose papilla could not be cannulated by standard techniques, a precut was successfully performed in 15 patients. Eleven patients had infundibulotomy and five patients had CBD cannulation through a bilio-digestive fistula. In univariate analysis, the predictors of failure of papilla cannulation (before precut or infundibulotomy) were: a small papilla (p = <10-3), an eccentric papilla (p = 0.001) and a papilla hidden by a fold (p = 0.025).

**Conclusions** In our series, cannulation of the papilla by standard techniques was performed in 70% of cases. Predictors of failure were a small papilla, an eccentric papilla, and a papilla hidden by a fold.

## eP313 DIFFICULT BILIARY CANNULATION: WHAT TO DO?

**Authors** Aoula SE<sup>1</sup>, Borahma M<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

**Institute** 1 Mohammed V University, Ibn Sina Hospital, Gastroenterology C, Rabat, Morocco

**DOI** 10.1055/s-0041-1724807

**Citation** Aoula SE, Borahma M, Lagdali N et al. eP313 DIFFICULT BILIARY CANNULATION: WHAT TO DO? *Endoscopy* 2021; 53: S201.

**Aims** Biliary cannulation (BC) failure can occur in 5-10% of cases, but before concluding to cannulation failure, some techniques can be attempted (double guidewire technique (DGT), the precut, and the Trans pancreatic sphincterotomy...). BC rate >85% is the goal of any endoscopist involved in Endoscopic Retrograde Cholangiopancreatography (ERCP).

The purpose of this work was to report different techniques used in case of difficult BC.

**Methods** it was a single-center, retrospective, descriptive study, from May 2019 to July 2020, including all patients who underwent ERCP with difficult BC.

**Results** Out of 183 ERCPs, 42 patients had a difficult cannulation (28.37%), and 3 patients (1.6%) had failure of cannulation. The mean age of patients was 54.2 years with a female predominance of 66.6%. cholecystectomy was noted in 14.2%. Patients were admitted for hepatic colic in 35.7%, cholestatic jaundice in 33.3%, and pancreatitis in 16.6%. The ERCP indications were common bile duct stones in 73.8%, palliative drainage for pancreatic head cancer in 16.6%, and post-cholecystectomy biliary injury in 1 case. Unintended pancreatic duct cannulation occurred in 64.28% of cases, while the number of contacts with papilla >5 happened in 23.8%, and the duration of cannulation >5 min recorded in 12%. Difficult BC causes were the anatomy of the papilla in 14 cases (bulky papilla, low position, sclerous, small papilla, paradiverticular), impacted stone in 7.14%, while no cause was recognized in 71.42% of cases. The techniques used to succeed BC were DGT in 54.7%, precut in 4.7%, forceps assisted technique (FAT) in 2.38%, Burdick technique in 4.7%, and hybrid techniques (DGT+precut, and DGT+precut+FAT) in 5.76%.

**Conclusions** Successful cannulation of the papilla is the first step in all biliary catheterism which guarantees a successful ERCP. The DGT with precut were the most techniques practiced in our center and allowed in more than 60% an efficient cannulation.

## eP314V PANCREATIC ERCP WITH A FRONTAL VIEW ENDOSCOPE IN A PATIENT WITH PRESERVED DUODENAL ANATOMY WITHOUT PREVIOUS SURGERY

**Authors** Ubieto V<sup>1</sup>, Zabalza L<sup>1</sup>, Martínez de Acitores D<sup>1</sup>, Gomez M<sup>1</sup>, Uribarri L<sup>1</sup>, Saldaña C<sup>1</sup>, Estremera F<sup>1</sup>, Albeniz E<sup>1</sup>, Vila JJ<sup>1</sup>

**Institute** 1 Complejo Hospitalario de Navarra. Endoscopy Unit, Gastroenterology Dpt., Pamplona, Spain

**DOI** 10.1055/s-0041-1724808

**Citation** Ubieto V, Zabalza L, Martínez de Acitores D et al. eP314V PANCREATIC ERCP WITH A FRONTAL VIEW ENDOSCOPE IN A PATIENT WITH PRESERVED DUODENAL ANATOMY WITHOUT PREVIOUS SURGERY. *Endoscopy* 2021; 53: S201.

Patient with alcoholic chronic pancreatitis under endoscopic therapy with stents for pancreatic stenosis (PS). After one year treatment is admitted for definitive removal of the stent. An inflammatory stenosis is found in the upper duodenal flexure preventing duodenoscopy progression. Access to the papillary area is achieved with a gastroscope and the stent is removed. Worsening of the duodenal inflammatory process raised the suspicion of concurrent worsening of the PS so the papilla is laterally and proximally approached with the gastroscope and cannulation is achieved using a rotatory sphincterotome. Pancreatography confirmed worsening of the PS so another stent was inserted laboriously.

## eP315 AMPULLARY RADIOFREQUENCY ABLATION FOR THE TREATMENT OF RESIDUAL AND RECURRENCE NEOPLASIA AFTER ENDOSCOPIC PAPILLECTOMY: REPORT OF A TERTIARY CENTER

**Authors** Dahel Y<sup>1</sup>, Giovannini M<sup>1</sup>, Pesenti C<sup>1</sup>, Ratone JP<sup>1</sup>, Hoibian S<sup>1</sup>, Caillol F<sup>1</sup>

**Institute** 1 Paoli-Calmettes Institute, Endoscopy Unit, Marseille, France

**DOI** 10.1055/s-0041-1724809

**Citation** Dahel Y, Giovannini M, Pesenti C et al. eP315 AMPULLARY RADIOFREQUENCY ABLATION FOR THE TREATMENT OF RESIDUAL AND RECURRENCE NEOPLASIA AFTER ENDOSCOPIC PAPILLECTOMY: REPORT OF A TERTIARY CENTER. *Endoscopy* 2021; 53: S201.

**Aims** Endoscopic papillectomy is the recommended treatment for adenoma, CIS and intramucosal adenocarcinoma of ampulla but incomplete margin and recurrence are common. Radiofrequency ablation (RFA) as a complementary treatment of papillectomy margin is an emerging technique. The goal of this study was to evaluate retrospectively feasibility and efficiency of this technique in our center.

**Methods** All patients who had a first ampullary RFA following papillectomy were included, between October 2015 and October 2019. Operable patients with adenocarcinoma on margin accepting surgery and intraductal extension longer than 5mm were excluded.

Primary endpoint was the clinical success defined by the absence of recurrence at papillectomy site macroscopically and/or histologically at 3, 6 and 12 months. Secondary endpoints were number of sessions needed for clinical success, the early (<30 days) and late (> 30 days) complications. Eradication failure was defined by the use of more than 2 sessions.

**Results** Twelve patients (mean age 64.8 years), with a median follow up of 31 months (12–57) were included. RFA was performed on margin with low grade (5) or high-grade dysplasia (5), (CIS) (1) and pT1R1 adenocarcinoma for one patient refusing surgery.

At 3, 6 and 12 months, clinical success was 92%, 83% and 83% (11/12, 10/12 et 10/12) with a median of 1.1 sessions of RFA (1-2). Two early complications (moderate pancreatitis and bleeding requiring new endoscopy), 5 (41.6%) late complications (biliary stenosis managed endoscopically) were reported. Two stenosis occurred in patients with 2 and 3 EMR sessions.

**Conclusions** RFA is an effective treatment to eradicate residual ampulloma (83% at 12 months) with few session required (1.1 on average). Late stenosis are the main complication (41%) managed endoscopically. Additional mucosectomy may be a risk factor of stenosis.

## eP316V ENDOSCOPIC RESECTION IN CASE OF TUMOR OF DISTAL COMMON BILE DUCT

**Authors** Nedoluzhko I<sup>1</sup>, Grishina E<sup>1</sup>, Khon E<sup>1</sup>, Shishin K<sup>1</sup>, Kurushkina N<sup>1</sup>, Shumkina L<sup>1</sup>

**Institute** 1 Moscow Clinical Scientific Center, Operative Endoscopy, Moscow, Russian Federation

**DOI** 10.1055/s-0041-1724810

**Citation** Nedoluzhko I, Grishina E, Khon E et al. eP316V ENDOSCOPIC RESECTION IN CASE OF TUMOR OF DISTAL COMMON BILE DUCT. *Endoscopy* 2021; 53: S201.

Patient 56 y.o. In anamnesis single attack of acute cholangitis. According to the examination, an intra-ampullar tumor without signs of invasion of the muscular wall of the duodenum was found.

Endoscopic papillectomy and removal of the villous adenoma of the distal part of the bile duct was performed. The post-resection defect was closed using hemostatic clip.

The postoperative period was uneventful. The patient was discharged on the 2nd day after surgery. Histological examination: a villous adenoma with focus of high-grade dysplasia without signs of invasive growth was revealed.

## eP319 IMPACT OF ESGE CRITERIA IN EVALUATION OF PATIENTS WITH SUSPECTED COMMON BILE DUCT STONES. REAL LIFE EXPERIENCE IN A HIGH-VOLUME CENTER

**Authors** Balzarini M<sup>1</sup>, Mariotto E<sup>1</sup>, Parravicini M<sup>1</sup>, Cortellezzi C<sup>1</sup>, Grassi E<sup>1</sup>, Segato S<sup>1</sup>

**Institute** 1 ASST Sette-Laghi, Gastroenterology unit, Varese, Italy

**DOI** 10.1055/s-0041-1724811

**Citation** Balzarini M, Mariotto E, Parravicini M et al. eP319 IMPACT OF ESGE CRITERIA IN EVALUATION OF PATIENTS WITH SUSPECTED COMMON BILE DUCT STONES. REAL LIFE EXPERIENCE IN A HIGH-VOLUME CENTER. *Endoscopy* 2021; 53: S202.

**Aims** According to ESGE guidelines ERCP should be performed in patients without cholangitis only when common bile duct stones are visible on imaging modalities.

Our aim was to determine the performance characteristics of the ESGE guidelines in selecting patients in whom ERCP is justified and to analyze their impact in a real-life clinical practice setting.

**Methods** Consecutive patients hospitalized with suspected choledocholithiasis at Gastroenterology Unit ASST Sette-Laghi Varese from April 2019 to April 2020 were included in the study.

Patients with features of cholangitis or choledocholithiasis on abdominal US were considered high risk. Patients with abnormal liver function tests and/or common bile duct dilation were considered intermediate risk and ERCP was performed only after positive EUS or MRCP. Patients with normal liver function tests and US were considered low risk.

**Results** Of 146 patients with suspected choledocholithiasis, 3 (2 %) met low-risk criteria, 114 (78 %) met intermediate risk and 29 (20 %) met High-risk. In patients with low-risk ERCP wasn't performed and follow-up was negative for choledocholithiasis. Imaging testing (EUS in 2 and MRCP 109) revealed choledocholithiasis in 38 (34%) patients. ERCP was performed in 37 patients and revealed presence of common bile duct stones in 27 (73%) of these patients, no other case of choledocholithiasis was found during follow-up. The specificity of the ESGE intermediate-risk criteria was 88 % and positive predictive value was 73 %, 111 imaging test were performed to find out 27 cases of choledocholithiasis. 22 ERCP were performed in patient at high-risk and common bile duct-stones were present in 17.

**Conclusions** ESGE intermediate risk criteria showed good probability of the patient having choledocholithiasis and reduce risk of performing unnecessary ERCP but more than a half of the patients received imaging test that were negative and this could have an impact on costs and logistic issues.

## eP320 ENDOSCOPIC PAPILLARY LARGE BALLOON DILATATION WITHOUT PRECEDING SPHINCTEROTOMY FOR REMOVAL CHOLEDOCHOLITHIASIS IN PATIENTS WITH ROUX-EN-Y SURGERY

**Authors** Espinel J<sup>1</sup>, Pinedo E<sup>2</sup>

**Institute** 1 Hospital Universitario de León, Endoscopy Unit, León, Spain; 2 Hospital Universitario de León, Radiology, León, Spain

**DOI** 10.1055/s-0041-1724812

**Citation** Espinel J, Pinedo E. eP320 ENDOSCOPIC PAPILLARY LARGE BALLOON DILATATION WITHOUT PRECEDING SPHINCTEROTOMY FOR REMOVAL CHOLEDOCHOLITHIASIS IN PATIENTS WITH ROUX-EN-Y SURGERY. *Endoscopy* 2021; 53: S202.

**Aims** We retrospectively evaluated the feasibility and safety of endoscopic papillary large balloon dilatation without preceding sphincterotomy for the removal of choledocholithiasis.

**Methods** Large balloon Papillary dilation for the removal of choledocholithiasis was performed on the intact papilla in 11 patients with Roux-en-Y surgery (8 men and 3 women, mean age 82 years, age range 60-91 years), between

January 2018 and July 2020, at our institution. ERCP was performed with a 200-cm length and a 2.8 mm diameter working channel, Single Balloon Enteroscopy system (SIF Q180; Olympus Medical Systems, Tokyo, Japan), and ST-SB1 overtube. To facilitate the identification and cannulation of the papilla, a "rigid" transparent cap was attached to the tip of the enteroscope, in most procedures. All procedures were performed in the supine position. Cannulation, cholangiography, and sphincteroplasty were always attempted and carried out using a conventional esophageal/pyloric/colonic dilation balloon catheter (CRE Microvasive, Boston Scientific, Ireland). Balloon dilation sphincteroplasty was adapted to the duct diameter and stone size. The size of large balloon used ranged from 12 mm to 13.5 mm. The stones were then removed from the common bile duct with a basket or a retrieval balloon. All patients received NSAIDs after the procedure.

**Results** Complete clearance of choledocholithiasis was achieved in all cases. Only two patients underwent the procedure twice to achieve papilla cannulation. A mechanical lithotripter was not required. Mild pancreatitis did occur in a patient.

**Conclusions** Large balloon papillary dilation without preceding sphincterotomy appears to be an effective and safe treatment for the removal of choledocholithiasis in patients with Roux-en-Y surgery.

## eP321 CHOLEDOCIAN EMPIERREMENTS: WHAT ARE THE FACTORS OF FAILURE OF STONE EXTRACTION?

**Authors** Temani MK<sup>1</sup>, Mahmoudi M<sup>1</sup>, Laabidi S<sup>1</sup>, Medhioub M<sup>1</sup>, Khsiba A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz M<sup>1</sup>

**Institute** 1 Faculty of Medicine of Tunis/Mohamed Taher Maamouri Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724813

**Citation** Temani MK, Mahmoudi M, Laabidi S et al. eP321 CHOLEDOCIAN EMPIERREMENTS: WHAT ARE THE FACTORS OF FAILURE OF STONE EXTRACTION? *Endoscopy* 2021; 53: S202.

**Aims** To assess the rate of stone extraction failure during choledocian empierelements (CE) and the associated factors.

**Methods** We conducted a retrospective study [2013 - 2020], collecting patients who had had an endoscopic retrograde pancreatography ERCP for MBD stone. CE was defined by the presence of multiple calculations (more than 3). Patients with difficult or impossible MDB catheterization were excluded. A single varied then multi-varied study using binary logistic regression was carried out (p significant if <0.05).

**Results** One hundred and seventy-one ERCP were carried out. The average age of patients was 64 [18-98] and sex ratio M/F was 0.54. The indication for ERCP was represented by: residual lithiasis of the MBD in 54% of the cases, sequential treatment in 18% of the cases, acute biliary pancreatitis in 16% of the cases and acute cholangitis in 11% cases. The diagnosis of CE was made by per cholangiography in 11% of the cases. Extraction failure was noted in 19% of patients, 75% of whom had a biliary stent inserted. Five percent of patients presented with acute pancreatitis as the main complication. In single study, factors related to stone extraction failure were; female gender (p = 0.04), severe acute cholangitis (p<(10<sup>-4</sup>)), residual MBD lithiasis (p<(10<sup>-4</sup>)) and acute biliary pancreatitis (p <(10<sup>-4</sup>)). In multi-varied study, two factors have been identified; severe acute cholangitis (OR = 5) and acute biliary pancreatitis (OR = 3).

**Conclusions** In our series, the rate of stone extraction failure was 19%. The factors associated with the extraction failure were severe cholangitis and acute biliary pancreatitis.

## eP322 DUODENAL DIVERTICULUM: A PREDICTOR OF FAILURE OF ENDOSCOPIC COMMON BILE DUCT STONE EXTRACTION?

Authors Nakhli A<sup>1</sup>, Sabbah M<sup>1</sup>, Trad D<sup>2</sup>, Bellil N<sup>2</sup>, Elloumi H<sup>2</sup>, Ouakaa A<sup>2</sup>, Bibani N<sup>2</sup>, Gargouri D<sup>2</sup>

Institute 1 Faculté de Médecine de Tunis, Gastroenterologie, Habib Thameur Hospital, Tunis, Tunisia; 2 Faculté de Médecine de Tunis, Gastroenterologie, Habib Thameur Hospital, Tunis, Tunisia

DOI 10.1055/s-0041-1724814

Citation Nakhli A, Sabbah M, Trad D et al. eP322 DUODENAL DIVERTICULUM: A PREDICTOR OF FAILURE OF ENDOSCOPIC COMMON BILE DUCT STONE EXTRACTION? *Endoscopy* 2021; 53: S203.

**Aims** An intra or para diverticular papilla can be a cause of endoscopic retrograde cholangiopancreatography (ERCP) failure during the treatment of common bile duct (CBD) stones. The objective of this study was to determine the impact of an intra or paradiverticular papilla on the cannulation of the papilla and on the extraction of stones.

**Methods** This is a retrospective study that included all patients who had ERCP for common bile duct stones between January 2014 and December 2017. Epidemiological, clinical and para-clinical data were collected. Univariate analysis was performed to determine whether an intra or para diverticular papilla was a cause of failure of papilla cannulation and stone extraction (SPSS software, p significant if <0.05).

**Results** We included 181 patients whose mean age was 64 years [22-103 years] with a sex ratio M/W = 0.41. The main indications for ERCP were residual or recurrent lithiasis (69%, n = 129) or sequential treatment (18%, n = 33). The papilla was intra-diverticular in 4.4% of cases and para-diverticular in 14.9% of cases. Cannulation of the papilla by standard techniques could be performed in 127 patients (70.1%). In univariate analysis an intra diverticular papilla (p = 0.807) and a para-diverticular papilla (p = 0.411) were not associated with a failure of the cannulation of the papilla. The clearance of the CBD was obtained in 61.5% of cases. An intra-diverticular papilla was significantly associated with failure of stone extraction (p = 0.010). A para-diverticular papilla (p = 0.687) was not associated with failure of stone extraction.

**Conclusions** In our series, the intra or para-diverticular papilla was present in 19.3% of cases. An intra-diverticular papilla is associated with failure of stone extraction. The use of second-line endoscopic techniques should be considered straight away in these patients

## eP323 LAPAROSCOPIC-ENDOSCOPIC RENDEZVOUS (LERV) IN PATIENTS UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY FOR STONES IN THE GALLBLADDER AND BILE DUCT

Authors Broglia F<sup>1</sup>, Leoni P<sup>1</sup>, Lumachi V<sup>1</sup>, Luraghi M<sup>2</sup>, Romano S<sup>2</sup>, Armao FT<sup>2</sup>, Bisagni PAC<sup>2</sup>

Institute 1 ASST Lodi, Department of Surgery Digestive Endoscopy Unit, Lodi, Italy; 2 ASST Lodi, Department of Surgery General Surgery Unit, Lodi, Italy

DOI 10.1055/s-0041-1724815

Citation Broglia F, Leoni P, Lumachi V et al. eP323 LAPAROSCOPIC-ENDOSCOPIC RENDEZVOUS (LERV) IN PATIENTS UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY FOR STONES IN THE GALLBLADDER AND BILE DUCT. *Endoscopy* 2021; 53: S203.

**Aims** The management of gallbladder stones concomitant with bile duct (BD) stones is controversial. The usual approach is a two-stage procedure, with endoscopic sphincterotomy and stone removal from the BD followed by laparoscopic cholecystectomy. The laparoscopic-endoscopic rendez-vous combines the two techniques in a single-stage operation.

Retrospective review of patients who underwent LERV was performed. Patient characteristics, pre/postoperative laboratory values, complications and readmissions were reviewed. LERV was conducted during laparoscopic

cholecystectomy for evidence of choledocholithiasis with or without preoperative biliary pancreatitis or cholangitis. Following confirmatory intraoperative cholangiogram, a flexible tip guidewire was inserted antegrade into the cystic ductotomy, through the BD across the ampulla in the duodenum and retrieved with a duodenoscope. Standard ERCP maneuvers to clear the bile duct are then performed.

**Methods** Retrospective review of patients who underwent LERV was performed. Patient characteristics, pre/postoperative laboratory values, complications and readmissions were reviewed. LERV was conducted during laparoscopic cholecystectomy for evidence of choledocholithiasis with or without preoperative biliary pancreatitis or cholangitis. Following confirmatory intraoperative cholangiogram, a flexible tip guidewire was inserted antegrade into the cystic ductotomy, through the BD across the ampulla in the duodenum and retrieved with a duodenoscope. Standard ERCP maneuvers to clear the bile duct are then performed.

**Results** From March 2018 to October 2020 sixty one patients (31 female/30 male, mean age 70,1) underwent intraoperative ERCP using LERV technique. Only one patient underwent LERV for acute biliary pancreatitis, in two cases for acute cholecystitis with cholangitis, the other cases were treated in election setting (90%). Only in five cases (8%) the LERV was not successfully completed and traditional intraoperative ERCP was performed. Of all cases successfully treated with LERV technique two were gastrectomy with Roux-en-Y gastrojejunostomy, only in three cases (4,9%) biliary clearance was not completed so temporarily a pigtail prosthesis was positioned and in 13 cases (about 21%) a peripapillary duodenal diverticulum was found. There were no cannulations or injections of the pancreatic duct. There were no intraoperative complications associated with the ERCP and no patients developed post ERCP pancreatitis. Average length of the hospital stay was 9 days.

**Conclusions** LERV procedure is at par with two-stage technique in terms of CBD clearance, may lead to longer operating times but may reduce the length of the hospital stay, the incidence of post-operative pancreatitis and overall morbidity.

## eP324 BILIARY STENTING IN THE MANAGEMENT OF DIFFICULT COMMON BILE DUCT STONES: A SINGLE TERTIARY CENTER EXPERIENCE

Authors Amalou K<sup>1</sup>, Belghanem F<sup>1</sup>, Bousselob A<sup>1</sup>

Institute 1 Algiers University of Medicine, Gastroenterology, Military Central Hospital, Algiers, Algeria

DOI 10.1055/s-0041-1724816

Citation Amalou K, Belghanem F, Bousselob A. eP324 BILIARY STENTING IN THE MANAGEMENT OF DIFFICULT COMMON BILE DUCT STONES: A SINGLE TERTIARY CENTER EXPERIENCE. *Endoscopy* 2021; 53: S203.

**Aims** If common bile duct (CBD) stones (choledocholithiasis) are left untreated, they may cause increases in morbidity and mortality due to several conditions.

In this study, using transient biliary stenting following the failure of an initial endoscopic retrograde cholangiopancreatography (ERCP) session, we aimed to show the effects of making the CBD stones smaller and easier to remove in the following session.

**Methods** In 126 of 900 (14%) patients with CBD stones, who underwent balloon screening and/or basket lithotripsy following ERCP and CBD cannulation, it was not possible to remove the stones in the first session. They were further followed and tested following transient biliary stenting.

**Results** A biliary stent was placed in 103 of 126 patients. While the plastic biliary stent was placed in patients, the mean stone size after the 1st ERCP was 20 mm and the bile duct size was 18 mm. At the time of the 2nd ERCP conducted approximately 83.9 days later, the mean stone size was found to be 14 mm and the bile duct size was 13 mm. With recurrent ERCPS, the CBD stone was successfully removed in 98 patients but could not be removed in 5 patients. Among the 98 successful cases, 59 removals were successful in the 2nd ERCP



session, 25 were successful in the 3rd session, 9 were successful in the 4th session, 4 was successful in the 5th session and 1 was successful in the 6th.

**Conclusions** For CBD stones that cannot be removed by standard methods, temporary plastic stenting may an alternative method. It increases the chance of success in the next session of ERCP.

### eP325 DIFFICULT COMMON BILE DUCT STONES: WHAT TO DO?

**Authors** Ouardi wEl<sup>1</sup>, Borahma M<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

**Institute 1** Hospital IBN Sina, Mohammed V University, Department of Medicine C, Rabat, Morocco

**DOI** 10.1055/s-0041-1724817

**Citation** Ouardi wEl, Borahma M, Lagdali N et al. eP325 DIFFICULT COMMON BILE DUCT STONES: WHAT TO DO? *Endoscopy* 2021; 53: S204.

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is the treatment of choice of common bile duct (CBD) stones, providing a complete clearance of the CBD in more than 90% of cases. However, the presence of difficult stones can limit its results. Our work aimed to evaluate different techniques for managing difficult CBD stones as well as their results.

**Methods** It was a retrospective study, from March 2019 to October 2020, including all patients with difficult CBD stones, defined as a stone diameter  $\geq$  15mm, multiple stones, barrel-shaped stones, and tapering or tortuosity of the distal common bile duct, and scheduled for ERCP.

**Results** Out of 221 ERCPs, 31 patients (14.02%) were admitted for difficult CBD stones. The mean age of the patient was 62.8 +/- 18 years, with a sex-ratio F/M of 1.8. The median diameter of the CBD and stones were 20 mm [16-25] and 16 mm [15-20], respectively. We notified 6 cases (19.4%) of barrel-shaped stones. The tapering of the distal CBD was recorded in 5 patients, and it was identified as a limit of stone extraction when it exceeded 2 cm. We performed an endoscopic papillary large balloon dilation (EPLBD) after an endoscopic sphincterotomy (EST) in 19 patients (61.3%) with a mean diameter balloon of 15.8 +/- 1.8 mm, and a large sphincterotomy (LS) alone was performed in 10 patients (32.3%) associated to endoscopic mechanical lithotripsy in 02 patients.

The success of the ERCP was obtained in 90.3% of patients (N = 28) and was guaranteed by EPLBD and LS. The hospital stay varied between 24-48 hours and no complication of EPLBD or LS was reported.

**Conclusions** EPLBD after EST and LS alone are two simple and effective techniques for endoscopic extraction of difficult CBD stones. In our series, they represent the two most used techniques with a success rate that exceeds 90%.

### eP326 OUTCOMES OF THE ENDOSCOPIC TREATMENT IN BILIARY PANLITHIASIS

**Authors** Temani MK<sup>1</sup>, Mahmoudi M<sup>1</sup>, Bradai S<sup>1</sup>, Khsiba A<sup>1</sup>,

Ben Mohamed A<sup>1</sup>, Medhioub M<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute 1** Mohamed Taher Maamouri Hospital, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724818

**Citation** Temani MK, Mahmoudi M, Bradai S et al. eP326 OUTCOMES OF THE ENDOSCOPIC TREATMENT IN BILIARY PANLITHIASIS. *Endoscopy* 2021; 53: S204.

**Aims** Biliary panlithiasis (BP) is defined by the presence of multiple lithiasis (more than 3) in the main bile duct (MDB). The aim of our work was to assess the rate of lithiasis extraction failure during BP and the associated factors.

**Methods** During a period of 5 years, all patients with a BP who underwent a therapeutic ERCP were collected. Patients with difficult or impossible MDB catheterization were excluded. A univariate then multivariate analysis using binary logistic regression was performed (p significant if  $<0.05$ ).

**Results** Among 861 patients who underwent an ERCP during the period of the study, 582 patients were referred for lithiasis of the MDB; 171 had BP (29.3%). The average age of our patients was 64 [18-98] and the sex ratio M/F was 0.54. The indication for ERCP was: residual lithiasis of the MDB in 54% of the cases, sequential treatment in 18% of the cases, acute biliary pancreatitis in 16% of

the cases and acute cholangitis in 11% cases. The diagnosis of BP was made by per cholangiography in 11% of the cases. Extraction failure was noted in 19% of patients, 75% of whom had a biliary prosthesis inserted. Acute pancreatitis was the main complication noted in 5% of cases. In a univariate analysis, the factors related to stone extraction failure were; female gender (p = 0.04), severe acute cholangitis (p $<$ 0.001), residual MDB lithiasis (p $<$ 0.001) and acute biliary pancreatitis (p $<$ 0.001). In a multivariate analysis, two factors have been identified; severe acute cholangitis (OR = 5) and acute biliary pancreatitis (OR = 3).

**Conclusions** Although ERCP seems to be a safe and effective technique for the treatment of BP, it remains a challenge in a 1/5 of cases. The factors associated with the extraction failure were severe cholangitis and acute biliary pancreatitis.

### eP327 IMPACT OF INDWELLING ENDOPROSTHESES IN MANAGEMENT OF UNEXTRACTABLE COMMON BILE DUCT STONES: 2-YEAR, TERTIARY-CENTER, EXPERIENCE

**Authors** Papastergiou V<sup>1</sup>, Giannakopoulos A<sup>1</sup>, Pantelakis E<sup>1</sup>, Kivelou E<sup>1</sup>,

Kaxtsidou M<sup>1</sup>, Paraskeva K<sup>1</sup>

**Institute 1** Konstantopouleio - Patision General Hospital, Gastroenterology, Athens, Greece

**DOI** 10.1055/s-0041-1724819

**Citation** Papastergiou V, Giannakopoulos A, Pantelakis E et al. eP327 IMPACT OF INDWELLING ENDOPROSTHESES IN MANAGEMENT OF UNEXTRACTABLE COMMON BILE DUCT STONES: 2-YEAR, TERTIARY-CENTER, EXPERIENCE. *Endoscopy* 2021; 53: S204.

**Aims** Placement of a biliary stent is often performed in patients with unextractable common bile duct (CBD) stones, although supported by moderate-quality evidence. We aimed to assess the role of biliary stenting in the management of unextractable CBD stones.

**Methods** We retrospectively analyzed a prospective database (1/2018-12/2019) including consecutive patients (n = 190, 53.7% females, mean age: 75.4  $\pm$  11.2) who underwent ERCP for the management of CBD stones.

**Results** Successful stone clearance at the initial ERCP was 82.1% (156/190), whereas 34/190 (17.9%) patients with CBD stones that were unextractable by conventional endoscopic means underwent placement of a 7-10 Fr plastic stent. The mean CBD diameter (14.2 $\pm$ 2.4 vs 13 $\pm$ 2.2mm, p=0.01), largest stone diameter (13.1 $\pm$ 1.9 vs 8.5 $\pm$ 4.2mm, p=0.0001) and the rate with multiple ( $\geq$ 3) stones (41.2% vs 14.1%, p=0.001) were significantly higher in patients with unextractable CBD stones. Thirty-three of these patients underwent a second ERCP with attempt to stone removal, following a range of 2-6 months. The diameter of the CBD (mean difference: -1.76mm, p=0.0001) and diameter of the largest stone (mean difference: -2.57mm, p=0.0001) were significantly reduced at the second ERCP, whereas in 6/14 patients with  $\geq$ 3 stones initially the number of stones was reduced to  $<$ 3. At the second ERCP, 54.5% (18/33) patients had complete stone clearance by conventional endoscopic techniques and 15.2% (5/33) by cholangioscopy-guided electrohydraulic lithotripsy. Among the remaining 10 patients, 6 (18.2%) underwent additional ERCP sessions (up to 4 sessions) and 4 (12.1%) underwent alternative therapeutic approaches (percutaneous or surgical), and all of them achieved complete stone clearance.

**Conclusions** Temporary biliary stenting has a very positive effect on the size or fragmentation of unextractable CBD stones and serves as bridge to secondary intervention, thereby leading to high CBD clearance rates.

## eP328 ERCP-GUIDED TISSUE ACQUISITION IN INTRINSIC BILIARY STRICTURES: STILL A LONG WAY TO GO!

**Authors** Puscasu CI<sup>1</sup>, Voiosu T<sup>1,2</sup>, Stoian G<sup>1</sup>, Marica D<sup>1</sup>, Rimbasi M<sup>1,2</sup>, Rouhani F<sup>1</sup>, Voiosu A<sup>1</sup>, Bengus A<sup>1</sup>, Mateescu B<sup>1,2</sup>

**Institute** 1 Colentina Clinical Hospital, Gastroenterology, Bucharest, Romania; 2 Carol Davila School of Medicine, Internal Medicine, Bucharest, Romania

**DOI** 10.1055/s-0041-1724820

**Citation** Puscasu CI, Voiosu T, Stoian G et al. eP328 ERCP-GUIDED TISSUE ACQUISITION IN INTRINSIC BILIARY STRICTURES: STILL A LONG WAY TO GO!. *Endoscopy* 2021; 53: S205.

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) is essential in the workup of intrinsic bile duct strictures, allowing both tissue sampling and drainage of the bile duct. However, the diagnostic yield of ERCP in this setting is suboptimal. We aimed to evaluate the yield of ERCP-guided tissue acquisition in distinct clinical scenarios according to the pre-test probability of malignancy.

**Methods** We conducted a retrospective, single tertiary center study of patients that underwent ERCP procedures with tissue acquisition in the setting of intrinsic bile duct strictures of unknown etiology. We collected clinical data and used the cross-sectional imaging of the lesions prior to ERCP to classify patients as high probability (visible mass, suspicious nodes or metastases) or low probability of malignancy (none of the above). A final diagnosis of malignancy was established based on pathology reports from endoscopy or surgery or based on clinical evolution at 6 months follow-up.

**Results** We included 55 procedures in 39 patients with intrinsic bile duct strictures. Based on initial imaging, 34 (61.8%) cases were classified as highly suspicious of malignancy and 21 cases were classified as low risk. ERCP-guided tissue acquisition was performed via X-ray guided biopsy (25), brushing (23), cholangioscopy-guided (3) or a combination of methods (4). Only 20 (36.4%) of the samples were confirmed as malignant, although a diagnosis of malignancy was ultimately established in 50 patients (90.9%). There was no significant difference in diagnostic yield with respect to pre-procedural imaging data (high versus low probability,  $p=0.77$ ), type of stricture (proximal vs distal,  $p=0.55$ ), preprocedural bilirubin levels ( $p=0.93$ ) or type of tissue acquisition method used.

**Conclusions** The sensitivity of ERCP-guided tissue acquisition remains suboptimal for confirming malignancy in a cancer-rich patient population, irrespective of clinical, biochemical and imaging predictors. Alternative diagnostic strategies beyond intraductal tissue sampling should be explored in this patient population.

## eP329 A REFINED TECHNIQUE OF APPROACH FOR BILE DUCT BIOPSY IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

**Authors** Lee KW<sup>1</sup>, Lee JM<sup>1</sup>, Choi HS<sup>1</sup>, Kim ES<sup>1</sup>, Keum B<sup>1</sup>, Jeon YT<sup>1</sup>, Chun HJ<sup>1</sup>, Lee HS<sup>1</sup>

**Institute** 1 Korea University Anam Hospital, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Seoul, Korea, Republic of

**DOI** 10.1055/s-0041-1724821

**Citation** Lee KW, Lee JM, Choi HS et al. eP329 A REFINED TECHNIQUE OF APPROACH FOR BILE DUCT BIOPSY IN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY. *Endoscopy* 2021; 53: S205.

**Aims** Tissue sampling at endoscopic retrograde cholangiopancreatography (ERCP) can be challenging due to low diagnostic yield and high technical demands. Although biopsy is one of the most common techniques, ERCP doctors has frequently difficulty to approach a biopsy forceps for biliary lesions. The aim of this study was to describe an easy technique for biliary biopsy, assisted by looped guidewire in beginner ERCP doctors.

**Methods** A prospective observational study was performed at a tertiary medical center. Between August 2019 and January 2020, 13 patients with proximal biliary duct stricture underwent ERCP with a new biopsy technique. The new technique 'loop-guidewire assisted forceps approaching' was as follows;

1. insert the first guidewire through biliary lesion,
2. grasp the tip of another loop tip guidewire by forceps,
3. slowly proceed the loop guidewire through the pre-positioned guidewire until approaching biliary lesion.

This procedure was performed by one beginner ERCP doctor and supervised by one experienced ERCP doctor. We evaluated the usefulness and efficiency by successful rate, diagnostic yield and complication.

**Results** The success rate of tissue sampling by beginner ERCP doctor was 100% (13/13). All sample had the adequate quality and volume for histopathology analysis. As a result of biopsy by loop-guidewire assisted forceps biopsy, 11 specimens were confirmed as adenocarcinoma. All patients were finally diagnosed as malignant cancer after that 2 patients were re-examined (Common hepatic duct cholangiocarcinoma 9, Recurred intrahepatic duct cholangiocarcinoma 1, pancreatic cancer with liver metastasis 1, hepatocellular carcinoma 1 and gallbladder cancer 1). The sensitivity was 84.6% (11/13). There was a mild hyperamylasemia in 2 patients, but no other severe complication.

**Conclusions** This new technique could reduce the risk of failure and shorten procedure time in ERCP. Especially for beginner ERCP doctors, this technique is useful to perform a safe procedure and minimize the expert's intervention during ERCP forceps biopsy.

## eP330 DIAGNOSTIC YIELD OF PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY (pCLE) IN BILIARY STRICTURE OF UNDEFINED ORIGIN

**Authors** Rizzi F<sup>1</sup>, Bruno M<sup>1</sup>, Sacco M<sup>1</sup>, Rizza S<sup>1</sup>, Gesualdo M<sup>1</sup>, Cravero F<sup>1</sup>, Fimiano F<sup>1</sup>, Castellano F<sup>1</sup>, Mauriello A<sup>1</sup>, De Angelis CG<sup>1</sup>

**Institute** 1 AOU Città della Salute e della Scienza, University of Turin, Gastroenterology and Digestive Endoscopy Unit, Turin, Italy

**DOI** 10.1055/s-0041-1724822

**Citation** Rizzi F, Bruno M, Sacco M et al. eP330 DIAGNOSTIC YIELD OF PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY (pCLE) IN BILIARY STRICTURE OF UNDEFINED ORIGIN. *Endoscopy* 2021; 53: S205.

**Aims** Biliary strictures often represent a diagnostic challenge. Their nature can be investigated with trans-papillary brushing and biopsies, cholangiography, cholangioscopy-guided biopsies, EUS-FNA and intraductal ultrasound (IDUS) but none of these techniques has an optimal diagnostic yield. Probe-based Confocal Laser Endomicroscopy (pCLE) is a promising tool in this setting. Our aim was to evaluate the diagnostic value of pCLE in detecting malignant biliary strictures.

**Methods** We enrolled patients with biliary strictures who underwent ERCP + pCLE in our Center from March to November 2019. All procedures were performed by a single operator. The pCLE procedure was recorded and reviewed afterwards by the same operator. The final diagnosis was based on histology (biopsies or surgical report) or on a follow-up of at least 12 months.

**Results** 9 patients (4 males, 5 females), aged from 47 to 83 years (median age 63) were included. 3 strictures were in common bile duct, 6 in common hepatic duct; the length varied between 9 and 25 mm (median length 16 mm). 4 out of 9 patients had undergone a previous ERCP, with unrevealing biopsies or brushing; in all case a biliary stent had been left in place. 7 patients received a final diagnosis of malignant stricture and 2 of benign one. pCLE recognized malignancy in 6 out of 7 cases and a benign lesion in 1 out of 2 cases. The only case with a false-positive pCLE had undergone a previous biliary stenting. Sensitivity was 86%, specificity 50%, PPV 86%, NPV 50% and accuracy 78%.

**Conclusions** pCLE showed a good diagnostic yield and can be helpful in patients with undefined biliary strictures, potentially reducing delays in diagnosis and expensive reiteration of endoscopic procedures. Larger studies are needed to assess its value in this scenario and the interobserver agreement. High costs and a long learning curve are the foreseen main limitations.

## eP331 MALIGNANT BILIARY OBSTRUCTION SECONDARY TO METASTATIC BLADDER CANCER - AN UNCOMMON PRESENTATION OF CHOLANGITIS

Authors Buckley D<sup>1</sup>, O'Neill RS<sup>2,3</sup>

Institute 1 The University of Notre Dame, The School of Medicine, Sydney, Australia; 2 The Sutherland Hospital, The Department of Medical Oncology, Sydney, Australia; 3 Faculty of Medicine, The University of New South Wales, St George and Sutherland Clinical School, Sydney, Australia

DOI 10.1055/s-0041-1724823

Citation Buckley D, O'Neill RS. eP331 MALIGNANT BILIARY OBSTRUCTION SECONDARY TO METASTATIC BLADDER CANCER - AN UNCOMMON PRESENTATION OF CHOLANGITIS. *Endoscopy* 2021; 53: S206.

**Aims** Intrahepatic metastasis is a rare phenomenon with the vast majority of causes being attributable to colorectal, lung or kidney primary. Bladder carcinoma metastasising to the biliary tree is a rare entity. The case of intrahepatic metastasis with subsequent biliary stenosis and cholangitis in a patient with metastatic bladder cancer is reported.

**Methods** A 62-year old male patient with metastatic bladder urothelial cancer presented to a metropolitan emergency department with fevers, decreased oral intake, increasing lower limb oedema and progressive lethargy. Clinical examination demonstrated abdominal distension with significant lower limb oedema. Blood tests on admission demonstrated hyperbilirubinaemia with liver function test derangement in a predominantly cholangitic pattern. Low grade biliary dilatation was reported on computed tomography of the patients abdomen with tapering to the duodenum. Endoscopic retrograde cholangiopancreatography (ERCP) was performed due to concern malignant biliary obstruction.

**Results** ERCP was performed which revealed a partial deformity of the second part of the duodenum. Cholangiogram demonstrated a distal common bile duct stricture with upstream dilatation to 15 mm. A 10 x 16mm partially covered metal stent was inserted and dilated to 4mm using a hurricane balloon with biliary flow achieved post insertion. Common bile duct brushings demonstrated occasional atypical epithelial cells with increased nucleus:cytoplasm ratio and vesicular chromatin pattern with cells showing irregular nuclear outline suspicious for malignancy. The patient tolerated the post-procedure period well and was discharged home for consideration of chemotherapy.

**Conclusions** Bladder cancer rarely metastasises to distal sites, with the most common sites being lymph nodes, bone, lung, liver and the peritoneum. Metastasis to the biliary tree is a rare entity with sporadic case reports published in the literature. This report highlights a rare presentation of metastatic urothelial bladder cancer with ascending cholangitis treated with ERCP and biliary stenting. It highlights the importance of consider metastasis as a cause of biliary obstruction.

## eP332V ERCP BY RENDEZ-VOUS TECHNIQUE

Authors Tammouch Z<sup>1</sup>, Zazour A<sup>1</sup>, El Mekkaoui A<sup>1</sup>, Khannoussi W<sup>1</sup>, Kharrasse G<sup>1</sup>, Ismaili Z<sup>1</sup>

Institute 1 Mohammed the First University, Digestive Disease Research Laboratory, Hepato-Gastroenterology, Mohammed VI University Hospital, Oujda, Morocco

DOI 10.1055/s-0041-1724824

Citation Tammouch Z, Zazour A, El Mekkaoui A et al. eP332V ERCP BY RENDEZ-VOUS TECHNIQUE. *Endoscopy* 2021; 53: S206.

A 87-year-old woman, followed for suspicion of cholangiocarcinoma of the middle part of the CBD. Admitted for the management of cholangitis evolving for 2 weeks. Clinically she was altered, febrile and icteric with epigastric tenderness. Abdominal CT scan show a dilatation of CBD and IHBD at 19 mm upstream of a locally advanced lesion in biliopancreatic area. Liver tests were perturbed with an inflammatory syndrome. The patient underwent 3 failed ERCP due to the presence of a very tight stenosis in the middle CBD not

crossed by ERCP material. Thus, we performed an endoscopic drainage using the Rendezvous technique.

## eP333 ENDOSCOPIC PALLIATION OF MALIGNANT HILAR BILIARY STRICTURES: A SINGLE CENTRE EXPERIENCE AND USEFULNESS OF GLASGOW PROGNOSTIC SCORE

Authors On W<sup>1</sup>, Saleem MA<sup>1</sup>, Hegade VS<sup>1</sup>, Huggett MT<sup>1</sup>, Parandhi B<sup>1</sup>, Everett S<sup>1</sup>

Institute 1 Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom

DOI 10.1055/s-0041-1724825

Citation On W, Saleem MA, Hegade VS et al. eP333 ENDOSCOPIC PALLIATION OF MALIGNANT HILAR BILIARY STRICTURES: A SINGLE CENTRE EXPERIENCE AND USEFULNESS OF GLASGOW PROGNOSTIC SCORE. *Endoscopy* 2021; 53: S206.

**Aims** The optimum approach to palliation of malignant hilar biliary strictures (MHBS) is unclear. UK HES data demonstrates 30-day mortality of >20% following endoscopic and percutaneous stenting. We aimed to describe outcomes and predictive factors in patients undergoing ERCP and stenting for MHBS in a single tertiary hepatopancreatobiliary centre.

**Methods** All patients undergoing index palliative endoscopic stenting for MHBS from February 2015 to September 2020 were identified from a prospective database. Cross-sectional imaging was reviewed and stenting intention planned (left or right unilateral; bilateral) to optimise drainage. All patients received single dose antibiotic prophylaxis. Glasgow Prognostic Score (GPS, a validated tool for prognostication in various malignancies calculated with a 3 point scale based on serum albumin and CRP) was calculated retrospectively.

**Results** 95 patients (53 male, mean age 70 years old (range 30-92)) were included. Commonest aetiology was cholangiocarcinoma in 42.7% followed by metastatic hilar obstruction in 33.7%. Metal stents were placed in 87.4%, plastic in 10.3%, and both in 2.3%. Stenting intention was achieved in 83.2% (84.6% unilateral intent and 81.4% bilateral intent). Clinical success (reduction of serum bilirubin to ≤50% its original value within 30 days) was achieved in 84.8%. 30-day adverse event rate was 31.6% (24.2% cholangitis). 30-day mortality was 24.2%; mortality stratified by GPS (available in 89/95 patients) was: 0% in GPS0 (n=4), 27.8% in GPS1 (n=18) and 25.4% in GPS2 (n=67). Neither serum albumin (<35 g/L vs ≥ 35 g/L; 24.4% vs 26.7%, p=0.85) nor CRP (<10 vs ≥10 mg/L; 16.7% vs 26%, p=0.49) were significant predictors of 30-day mortality.

**Conclusions** Despite high technical and clinical success, short term mortality is high in this group of patients. GPS, albumin and CRP do not predict outcomes. Further research to optimise patient selection for biliary intervention and strategies to reduce post-procedural cholangitis is warranted.

## eP334 MALIGNANT HILAR BILIARY STRICTURES: EFFICIENCY OF ENDOSCOPIC DRAINAGE

Authors El Mountassir M<sup>1</sup>, Borahma M<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

Institute 1 Mohammed V University, Ibn Sina Hospital, Department of Gastroenterology C, Rabat, Morocco

DOI 10.1055/s-0041-1724826

Citation El Mountassir M, Borahma M, Lagdali N et al. eP334 MALIGNANT HILAR BILIARY STRICTURES: EFFICIENCY OF ENDOSCOPIC DRAINAGE. *Endoscopy* 2021; 53: S206.

**Aims** The endoscopic drainage (ED) of malignant hilar biliary strictures (MHBS) is often a challenge for the endoscopist with a significant failure rate. Our objective was to evaluate the efficacy of (ED) in (MHBS).

**Methods** The endoscopic drainage (ED) of malignant hilar biliary strictures (MHBS) is often a challenge for the endoscopist with a significant failure rate. Our objective was to evaluate the efficacy of (ED) in (MHBS).

**Results** Out of 240 EDs, 33 patients with MHBS were identified. The mean age of patients was 55.8 ±13.7 years, with a female predominance (sex-ratio F/M of

2.3). Clinically all patients had obstructive jaundice and pruritus. Strictures were due to perihilar cholangiocarcinoma in 16 cases (48.5%), hepatic metastasis in 7 cases (30.4%), extrinsic hilar invasion in 7 cases (3 pancreatic neck cancers, 6 gallbladder cancers and 1 gastric cancers). BD was successful in 87.7% and failure was recorded in 4 cases. BD failure causes were the inability to negotiate the guidewire through the stenosis in 2 cases, the lack of opacifying of the bile duct upstream of the stenosis in one case, and the failure of passing a dilation balloon in one case. The drainage failure rate was 9.5% in case of bilirubin < 25 mg/dl and 28.6% while >25 mg/dl, this difference was not statistically significant ( $p=0.25$ ). The drainage success rate regarding the Bismuth classification was 100% for stage I, 88.9% for type II, 83% for type III, and 66.7% for type IV. This difference was not statistically significant ( $p=0.65$ ). At postoperative, 3 patients (9%) presented mild cholangitis with good outcomes under medical treatment.

**Conclusions** ED is the gold standard for treatment of MHBS with a success rate that exceeds 80% in our experience, the tumor stage and the bilirubin level might not affect the success of the drainage but a large study with a high number of patients is necessary to assess the impact of these two factors.

### eP335 SEQUENTIAL ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE BILIARY STRICTURES: SHORT AND LONG-TERM RESULTS

**Authors** Budzinskiy S<sup>1,2</sup>, Shapovalianz S<sup>1,2</sup>, Zakharova M<sup>3</sup>, Fedorov E<sup>1,2</sup>  
**Institute** 1 N.I. Pirogov Russian National Research Medical University, Moscow, Russian Federation; 2 Moscow University Hospital № 31, Moscow, Russian Federation; 3 A.V. Vishnevsky National Medical Research Center of Surgery, Moscow, Russian Federation  
**DOI** 10.1055/s-0041-1724827

**Citation** Budzinskiy S, Shapovalianz S, M. Zakharova et al. eP335 SEQUENTIAL ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE BILIARY STRICTURES: SHORT AND LONG-TERM RESULTS. *Endoscopy* 2021; 53: S207.

**Aims** To evaluate short and long-term results of endoscopic treatment of post-operative biliary strictures (POBS).

**Methods** Retrospective follow-up single center study was held from January 1991 to October 2020. Endoscopic transpapillary interventions for POBS were performed in 89 patients (f-63/89-70.8%, m-26/89-29.2%), mean age 53.2 ±21,3 years (range 21–88). Total 412 procedures were performed. In anamnesis patients had cholecystectomy in 67(75.3%), hemihepatectomy-6(8.7%), EPT and stone extraction-4(4.5%), liver transplantation-12(13.5%) cases. The main manifestation of POBS was jaundice 82(92.1%), including cholangitis/liver abscess - 29(32.6%)pts. Common bile duct (CBD) stones were observed in 39(43.9%)pts.

**Results** There were 4 lines of endoscopic treatment of POBS (Table).

Planned interventions were performed every 2-6 months. Median period of treatment lasted 18 months (range 12-28). Good immediate and short-term results (resolution of jaundice, cholangitis and initiation of staged endoscopic treatment) were obtained in 72/89 (80.9%) pts. Another 9(10.1%) pts. underwent EB, but complete drainage of CBD above POBS was unsuccessful, so planned surgery was performed. It wasn't possible to pass above stricture and eliminate jaundice in 8(9%) pts. (urgent surgical treatment – 7, death – 1). Complications occurred in 6(6.7%) cases (bleeding - 2, postoperative pancreatitis - 2, perforation – 2). Five of them were successfully eliminated endoscopically, one (bleeding from EPT area) was operated on (lethal outcome), so mortality level was 1.1% (1).

Long-term outcomes were investigated in 53/72(73.6%) available for control patients. Mean follow-up time was 8.5 years (range 1-25). Good results were obtained in 47/53(88.7%) patients; satisfactory (recurrent CBD stones) – in 4/53(7.5%); poor (POBS relapse in 6 and 19 months after endoscopic treatment) in 2/53(3.8%) patients.

**Conclusions** The first line management for POBS is sequential endoscopic treatment; immediate technical success of it was 80.9% (72/89). Staged

endoscopic treatment allows achieving good and satisfactory long-term results in 96.2% (51/53) of patients who started staged treatment.

Intervention	N pts.(%)
EPT	6(6.7%)
EPT+endoscopic bouginage (EB)	11(12.4%)
EPT+EB+multiple endoscopic stenting	36(38.5%)
EPT+EB+balloon dilation+multiple endoscopic stenting	32(36%)

### eP336 ENDOSCOPIC MANAGEMENT OF POST LIVER TRANSPLANT ANASTOMOTIC BILIARY STRICTURES - THE IRISH EXPERIENCE

**Authors** Storan D<sup>1,2</sup>, Fennessy S<sup>1,2</sup>, Doherty GA<sup>1,2</sup>, Cullen G<sup>1,2</sup>, Mulcahy HE<sup>1,2</sup>

**Institute** 1 St. Vincent's University Hospital, Department of Gastroenterology, Dublin 4, Ireland; 2 University College Dublin, School of Medicine, Dublin, Ireland

**DOI** 10.1055/s-0041-1724828

**Citation** Storan D, Fennessy S, Doherty GA et al. eP336 ENDOSCOPIC MANAGEMENT OF POST LIVER TRANSPLANT ANASTOMOTIC BILIARY STRICTURES - THE IRISH EXPERIENCE. *Endoscopy* 2021; 53: S207.

**Aims** Anastomotic biliary strictures (ABS) are a common complication following orthotopic liver transplant (OLT) occurring in 4.5-15% after deceased donor LT. ERCP and stent placement has become the preferred initial treatment although a standard approach has not been established with regards to stent type, single vs. multiple stent placement, and the role of dilation.

**Methods** All OLTs performed from 1/1/2012 to 1/2/2020 in the Irish National Liver Transplant Centre were correlated with ERCPs performed in the same unit to identify patients who developed ABS requiring endoscopic intervention. Type of intervention and long-term outcomes were analysed retrospectively.

**Results** 459 OLTs, including 28 re-transplants, were performed during the study period. 16 patients (3.5%) were referred for ERCP due to ABS after a median of 93 days (IQR 17.5-148) post OLT. At initial ERCP, 15/16 procedures (94%) were technically successful (1 dilatation, 3 FC-SEMS, 11 PS) while 1/16 failed and required PTC and later hepaticojejunostomy. 2/15 subsequently died prior to stent removal due to chronic rejection and recurrent cholangiopathy. In the remaining 13 patients who had successful ERCP and had follow-up data available, 7/13 (53%) had stricture resolution and stent removal after a median of 3 procedures (IQR 3-5). The use of FC-SEMS was associated with significantly improved rates of stricture resolution ( $p$ -value 0.026). All 7 cases of stricture resolution had FC-SEMS insertion, 1 at index ERCP and 6 following initial PS insertion. 2 procedure-related complications were observed, 1 biliary perforation and 1 proximally migrated plastic stent requiring PTC. No complications were observed with the use of FC-SEMS.

**Conclusions** ERCP and stenting resulted in stricture resolution in over half of patients with ABS, and only in cases where FC-SEMS was placed. FC-SEMS is safer and significantly more effective than PS in the treatment of post-OLT ABS. Larger, prospective studies are required to further support these findings.



## eP337 HEMOSUCCUS PANCREATICUS (HP), AN UNCOMMON CASE REPORT OF UPPER GASTROINTESTINAL BLEEDING (UGIB)

Authors Labianca O<sup>1</sup>, Sica M<sup>1</sup>, Zulli C<sup>1</sup>, Maurano A<sup>1</sup>

Institute 1 AOU San Giovanni di Dio e Ruggi d'Aragona, Gaetano Fucito Hospital - Digestive Endoscopy Unit, Mercato San Severino, Italy

DOI 10.1055/s-0041-1724829

Citation Labianca O, Sica M, Zulli C et al. eP337 HEMOSUCCUS PANCREATICUS (HP), AN UNCOMMON CASE REPORT OF UPPER GASTROINTESTINAL BLEEDING (UGIB). *Endoscopy* 2021; 53: S208.

**Aims** Hemosuccus pancreaticus (HP) is a rare and potentially life-threatening upper gastrointestinal bleeding (UGIB) from the ampulla of Vater, usually caused by rupture of a visceral pseudoaneurysm of a peripancreatic vessel through the main pancreatic duct, or by a pancreatic pseudocyst in the context of acute or chronic pancreatitis.

**Methods** In January 2020, we observed a 67 years-old male admitted to our Digestive Endoscopy Unit, with a medical history of chronic liver disease and chronic pancreatitis secondary to alcohol dependence, owing epigastric pain and recurrent episodes of profuse melena. On examination, the patient showed hemodynamic instability with hypotension, tachycardia and a severe anemia. After resuscitation using rehydration and 2 units of red blood cell transfusions, an emergency upper GI endoscopy was performed and revealed a blood oozing from ampulla of Vater. Contrast-enhanced CT-scan showed multiple calcifications of pancreas, pancreatic duct dilatation and a 3,5 cm. x 2,8 cm. large pseudocyst at the pancreas head. CT angiography revealed a 20 mm. saccular pseudoaneurysm originating in the gastroduodenal artery, abutting the head of the pancreas, thus establishing the diagnosis of HP. A percutaneous angiographic coil embolization was carried out successfully, without any complication and with no evidence of further episodes of GI rebleeding.

**Results** Reports on HP have been quite limited and its diagnosis proved difficult and often delayed. Upper GI endoscopy is frequently non-diagnostic. The development of a pseudoaneurysm occurs by proteolytic enzymatic autodigestion and determines a vessel wall erosion caused in turn by pseudocyst formation and cyst-induced pressure necrosis. This kind of complication is more common in chronic pancreatitis.

**Conclusions** HP is a very rare cause of UGIB and represents one of the most challenging diagnostic and management dilemmas to physicians. HP caused by arterial aneurysm is conventionally treated surgically, but often it is managed by selective angio-embolization with endovascular procedure effectively and securely.

## eP338 ENDOSCOPIC TRANSMURAL DRAINAGE OF PANCREATIC PSEUDOCYSTS

Authors Bradai S<sup>1</sup>, Mahmoudi M<sup>1</sup>, Khsiba A<sup>1</sup>, Medhioub M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Nakhli A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz Mm<sup>1</sup>

Institute 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

DOI 10.1055/s-0041-1724830

Citation Bradai S, Mahmoudi M, Khsiba A et al. eP338 ENDOSCOPIC TRANSMURAL DRAINAGE OF PANCREATIC PSEUDOCYSTS. *Endoscopy* 2021; 53: S208.

**Aims** Pancreatic pseudocysts (PPC) are collections of fluids containing pancreatic juice and can occur as a result of acute pancreatitis or in patients with chronic pancreatitis. They are most often asymptomatic and resolve spontaneously, but in some cases, endoscopic or surgical treatment is indicated. The aim of this work was to identify methods of endoscopic drainage of pancreatic pseudocysts and to evaluate their results.

**Methods** This is a retrospective study including all patients who underwent endoscopic drainage of PPC in our department between November 2001 and June 2019. Epidemiological, clinical and therapeutic features were studied.

**Results** We included 16 patients. The average age was 38 years (5-68 years). PPC had appeared after acute pancreatitis in all cases with a mean time to discovery of 4 weeks (2 - 8 weeks). PPC was symptomatic in 8 cases. It was unique in most cases (n = 15) and its average size was 12 centimeters in diameter (range: 7 - 20 centimeters). One or more complications were noted in 11 cases: digestive compression in 8 cases, vascular compression in 3 cases and surinfection in one case. The endoscopic drainage technique consisted of the confection by the sphincterotome of a cysto-gastric fistula with an average diameter of 10 mm, then a pigtail transmural stent was placed. The cysto-gastrostomy allowed efficient drainage of PPC in 13 patients. No complications were observed during or following endoscopic drainage except for a single case of moderate bleeding that resolved spontaneously. The cysto-gastrostomy failed in three patients who had to be operated.

**Conclusions** Endoscopic PPC drainage is a simple and effective method of treating large symptomatic PPC, making it possible to reserve surgery for cases of endoscopic failure. However, a larger-scale study is needed to determine the predictors of endoscopic drainage failure and thus early select patients for surgery.

## eP339 SELF-EXPANDABLE METAL STENTING FOR ESOPHAGEAL FISTULA CLOSURE: INCREASING THE ODDS OF SUCCESS

Authors de Sousa Magalhães R<sup>1,2,3</sup>, Capela T<sup>1,2,3</sup>, Cúrdia Gonçalves T<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

Institute 1 Hospital Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Guimarães/Braga, Portugal

DOI 10.1055/s-0041-1724831

Citation de Sousa Magalhães R, Capela T, Cúrdia Gonçalves T et al. eP339 SELF-EXPANDABLE METAL STENTING FOR ESOPHAGEAL FISTULA CLOSURE: INCREASING THE ODDS OF SUCCESS. *Endoscopy* 2021; 53: S208.

**Aims** Esophageal self-expanding metal stent (SEMS) can be considered for treatment of anastomotic leaks and fistulas.

**Aim** To assess predictors for SEMS success in the closure of fistulas and anastomotic leaks.

**Methods** Retrospective cohort study, including consecutive patients submitted to esophageal stenting for fistula or anastomotic leaks closure, from 2012 to 2020. The outcome variable was fistula closure evaluated 8 weeks after stent placement. Univariate analysis tested the statistical significance towards the outcome. Logistic regression models quantified the correlation.

**Results** We included 30 patients, 18 (60%) were men, and the mean age was 60 years old. We report 26 (87%) anastomotic leaks, mainly in the post-operative of total (n = 21) and partial gastrectomies (n = 5). Eleven gastrectomies were bariatric and 15 for gastric neoplasia. Only 4 fistulas appeared (13.3%) in the scenario of esophageal neoplasia. Twenty-three (76.7%) patients achieved fistula/anastomotic leak resolution. From the other 7 patients (24.6%), 5 died after the 8-week period and 2 lost follow-up. Twenty (66%) SEMS were partially covered, and 10 (33%) fully covered. The "stent-in-stent" technique was performed in 10 (33%) cases for stent removal. Minor complications occurred in 14 (46%) cases and major complications in 1 patient (3.3%), a case of esophageal perforation. The variables smoking (*odds ratio* 0.059; *CI* 95% [0.006-0.594]; *p* value 0.016), a neoplastic cause of fistula/anastomotic leak (*odds ratio* 0.061; *CI* 95% [0.005-0.739]; *p* value 0.028) and oral systemic corticotherapy (*odds ratio* 0.034; *CI* 95% [0.003-0.416]; *p* value 0.008) were statistically associated with lower fistula/anastomotic leaks closure.

**Conclusions** Temporary esophageal SEMS placement is a safe and effective endoscopic procedure to ensure esophageal fistula/anastomotic leaks closure. Smoking, corticosteroid use and malignancy significantly decrease the odds of fistula/anastomotic leak closure. Optimizing the selection of patients for SEMS placement might increase the chances of procedure's success.

## eP340V OVER-THE-SCOPE CLIP CLOSURE OF GASTROCUTANEOUS FISTULA

**Authors** Marques de Sá I<sup>1</sup>, Pita I<sup>1</sup>, Ortigão R<sup>1</sup>, Pimentel-Nunes P<sup>1,2</sup>

**Institute** 1 Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal; 2 Faculty of Medicine, University of Porto, CINTESIS/Department of Biostatistics and Medical Informatics, Porto, Portugal

**DOI** 10.1055/s-0041-1724832

**Citation** Marques de Sá I, Pita I, Ortigão R et al. eP340V OVER-THE-SCOPE CLIP CLOSURE OF GASTROCUTANEOUS FISTULA. *Endoscopy* 2021; 53: S209.

A 54-year-old male under surveillance in our centre due to oropharyngeal carcinoma treated with radical chemoradiotherapy was submitted to percutaneous endoscopic gastrostomy (PEG), that was uneventful. After treatment completeness, he removed the PEG tube. Despite acid suppression and prokinetics, a persistent gastrocutaneous fistula developed. Therefore, he underwent endoscopy, that revealed an orifice at the anterior gastric wall between the gastric body and the antrum. After denudation of the fistulous tract with cytology brush and argon plasma coagulation, a 9mm over-the-scope-clip (OTSC) was placed, with endoscopic and clinical resolution.

The classical indication for OTSC should be broadened to gastrocutaneous fistula after PEG tube.

## eP342 PROGNOSTIC SCORES IN POST-ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY ACUTE PANCREATITIS: IS THERE A BETTER OPTION?

**Authors** Macedo Silva V<sup>1,2,3</sup>, Freitas M<sup>1,2,3</sup>, Sousa Magalhães R<sup>1,2,3</sup>, Cúrdia Gonçalves T<sup>1,2,3</sup>, Boal Carvalho P<sup>1,2,3</sup>, Rosa B<sup>1,2,3</sup>, Cotter J<sup>1,2,3</sup>

**Institute** 1 Hospital da Senhora da Oliveira, Gastroenterology Department, Guimarães, Portugal; 2 School of Medicine - University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 3 ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarães, Portugal

**DOI** 10.1055/s-0041-1724833

**Citation** Macedo Silva V, Freitas M, Sousa Magalhães R et al. eP342 PROGNOSTIC SCORES IN POST-ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY ACUTE PANCREATITIS: IS THERE A BETTER OPTION? *Endoscopy* 2021; 53: S209.

**Aims** Acute pancreatitis (AP) is the most commonly observed complication after endoscopic retrograde cholangiopancreatography (ERCP). Precocious risk stratification is crucial in the management of these patients, in order to avoid adverse outcomes. Multiple prognostic scores are already commonly used in AP, regardless of its etiology. Scarce data is available upon their use specifically on post-ERCP AP. We aimed to compare the acuity of different prognostic scores at post-ERCP AP diagnosis for prediction of a moderate to severe course.

**Methods** We analyzed every ERCP performed in our center between January 2010 and June 2020. Patients with AP diagnosed previously to the ERCP were excluded. Final sample included patients with post-ERCP AP criteria, with the respective severity graded according to Atlanta classification. For each patient, different prognostic scores were calculated: Acute Physiology and Chronic Health Evaluation (APACHE II), Marshall, Balthazar, Glasgow-Imrie, Bedside Index for Severity of Acute Pancreatitis (BISAP), Harmless Acute Pancreatitis Score (HAPS), PANC3 and Ranson's criteria upon admission. Each score acuity for prediction of a moderate to severe course was analyzed.

**Results** From a total of 2012 ERCPs, 102 (5.1%) were complicated by AP. From these, 34 (1.7% of all ERCPs) were classified as moderate to severe according to Atlanta classification. The scores with best acuity upon predicting a moderate to severe course were the BISAP (AUC=0.92;  $p < 0.01$ ), Glasgow-Imrie (AUC=0.909;  $p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Balthazar (AUC=0.9;  $p < 0.01$ ) scores, with excellent acuity. PANC3 (AUC=0.807;  $p < 0.01$ ), APACHE II (AUC=0.809;  $p < 0.01$ ) and Marshall score (AUC=0.778;  $p < 0.01$ ) revealed good acuity. HAPS classification (AUC=0.671;  $p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) and Ranson's criteria upon admission (AUC=0.647;  $p < 0.01$ ) presented less accurate results.

$p < 0.01$ ) presented less accurate results.

**Conclusions** BISAP, Glasgow-Imrie and Balthazar classifications presented excellent acuities upon predicting moderate to severe post-ERCP AP, and must represent the most useful prognostic scores for risk stratification in this population.

## eP343 POST-ERCP PANCREATITIS IS NOT INFLUENCED BY THE TIME TO ERCP IN NON-ERCP EMERGENCIES

**Authors** Moga T<sup>1</sup>, Miutescu B<sup>1</sup>, Ghiuchici AM<sup>1</sup>, Foncea C<sup>1</sup>, Tripcea R<sup>1</sup>, Popescu A<sup>1</sup>, Sporea I<sup>1</sup>, Ratiu I<sup>1</sup>

**Institute** 1 University of Medicine and Pharmacy "Victor Babes" Timisoara, Gastroenterology, Timisoara, Romania

**DOI** 10.1055/s-0041-1724834

**Citation** Moga T, Miutescu B, Ghiuchici AM et al. eP343 POST-ERCP PANCREATITIS IS NOT INFLUENCED BY THE TIME TO ERCP IN NON-ERCP EMERGENCIES. *Endoscopy* 2021; 53: S209.

**Aims** The aim of this study was to assess if time to ERCP (TtE) is a risk factor for post-ERCP pancreatitis (PEP) or if TtE is influencing hospitalization days in patients with biliary obstruction.

**Methods** We analyzed patients that undergone ERCP during a period of 12 months in our Gastroenterology department. The TtE was quantified per each patient and analyzed if the TtE influenced the PEP development or the patient hospitalization time in patients without acute cholangitis. We excluded from our study patients with acute cholangitis and those with previous ERCP.

**Results** Out of 251 patients ERCP's, 67.3% had benign causes of biliary obstruction. Overall incidence of PEP was 6.8% (17/251). 43% (108/251) of the patients had TtE at 24-48 h, out of which 5.5% (6/108) developed PEP. TtE at 48-72 h were 37.5% (94/251) patients, out of which 6.4% (6/94) developed PEP. TtE at >72h were 16.7% (42/251) out of which 12% (5/42) developed PEP. Odds ratio for performing ERCP after 24-48 h showed increased risk of developing PEP, OR=1.5, 95% CI (0.53-4.18)  $p=0.447$ . If we take a cut off value for common hospitalization days after ERCP of 3 days, there was a significant difference between groups according to TtE, 26% (28/108) (ERCP <24h) had >3 days of hospitalization vs. 84% (114/136) (ERCP >24h,  $p < 0.0001$ ). Delaying time to ERCP leads to a prolonged time of hospitalization days with an OR=14.8, 95% CI (7.9-27),  $p < 0.0001$ . The etiology of obstruction did not influence the risk of PE, 58.8% of cases had a benign cause of obstruction and 41.2% had a malignant cause  $p=0.3120$ .

**Conclusions** The odds ratio for TtE after 24h for developing PEP was of low significance but the hospitalization days were statistically significant if we delay TtE for more than 24h. The etiology of obstruction did not influence the PEP.

## eP344 TIMING OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN PATIENTS WITH ACUTE GALLSTONE PANCREATITIS DURING THE FIRST WAVE OF COVID-19 PANDEMIC, ARE WE FOLLOWING THE GUIDELINES!

**Authors** Gadour E<sup>1</sup>, Musharaf M<sup>1</sup>, Hafeez S<sup>1</sup>, Shafiq Y<sup>1</sup>

**Institute** 1 University Hospitals of Morecambe Bay NHS Foundation Trust, Gastroenterology, Lancaster, United Kingdom

**DOI** 10.1055/s-0041-1724835

**Citation** Gadour E, Musharaf M, Hafeez S et al. eP344 TIMING OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN PATIENTS WITH ACUTE GALLSTONE PANCREATITIS DURING THE FIRST WAVE OF COVID-19 PANDEMIC, ARE WE FOLLOWING THE GUIDELINES! *Endoscopy* 2021; 53: S209.

**Aims** Introduction Gallstone is well known, among other aetiologies, cause of Acute pancreatitis<sup>1</sup>. It is crucial to make early diagnosis as different treatment approached is recommended which includes early ERCP and cholecystectomy<sup>2</sup>.

In a proven or suspected gallstone pancreatitis, patients should undergo a therapeutic ERCP within 72 hours as per BSG guidelines<sup>3</sup>.

**Methods** We retrospectively studied all ERCP procedures done during the first wave of Covid-19 between Jan-Jun 2020. Data were retrieved using electronic patient records as well as endoscopic reporting applications.

**Results** 113 ERCP had been performed in our hospital during the first wave of Covid-19. Among them, they was only 8 patients who had ERCP for Acute Gallstone Pancreatitis. 5 patients only had ERCP during the 72 hours of the onset of pain occurred in 60% (n=3). 2 patients did not have their ERCP within the recommended time and one patient received medical treatment.

**Conclusions** 60% adherence is not adequate. We recommend development of local standard of procedure, pathway, or enhancement of early referral to Endoscopy unit. We recommend that all referral to ERCP will need to be reviewed with more urgency. Feedback to the acute medical team and emergency department to make more urgent referral to hepatobiliary team when gallstone pancreatitis is suspected.

### eP345 IMPACT OF CHRONIC STATIN-USE ON THE RISK OF POST-ERCP PANCREATITIS WITH OR WITHOUT RECTAL NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS)

**Authors** Bota S<sup>1</sup>, Razpotnik M<sup>1</sup>, Edlinger D<sup>1</sup>, Essler G<sup>1</sup>, Weber-Eibel J<sup>1</sup>, Peck-Radosavljevic M<sup>1</sup>

**Institute** 1 Klinikum Klagenfurt am Wörthersee, Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology, Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klagenfurt, Austria

**DOI** 10.1055/s-0041-1724836

**Citation** Bota S, Razpotnik M, Edlinger D et al. eP345 IMPACT OF CHRONIC STATIN-USE ON THE RISK OF POST-ERCP PANCREATITIS WITH OR WITHOUT RECTAL NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS). *Endoscopy* 2021; 53: S210.

**Aims** To assess impact of preexisting statin-use on the pancreatitis risk after endoscopic retrograde cholangio-pancreatography (ERCP) with or without rectal NSAIDs.

**Methods** Our retrospective study included all ERCPs performed between 01/2019-10/2020.

Cases with missing information were excluded from the final analysis.

Hyperlipasemia was defined as an increase of lipase  $\geq 3 \times$  upper limit of normal (ULN) after ERCP.

Post-ERCP pancreatitis was defined as abdominal pain with lipase  $\geq 3 \times$  ULN after ERCP and/or characteristics radiological signs.

The use of rectal NSAIDs and chronic use of statins prior to the ERCP were extracted from the patient's files.

**Results** We identified 928 ERCP interventions. The final analysis included 836 interventions (49.4% males), after the exclusion of 92 interventions performed in patients on an outpatient basis that were returned to the referring hospital immediately after ERCP.

Overall, 24.1% of patients had statins in their premedication.

Elevated lipase  $\geq 3 \times$  ULN was 19.8% in our cohort of patients, and was similar for those with and without chronic use of statins: 20.7% vs. 19.5%,  $p=0.78$ .

Post-ERCP pancreatitis was observed in 4.1% of cases and was similar regardless of the statin therapy: 3.9% vs. 4.2%,  $p=0.98$ .

The incidence of hyperlipasemia and post-ERCP pancreatitis was similar in chronic statin users and patients not on statins, irrespective of the combination with rectals NSAIDs (Figure)

**Conclusions** Chronic use of statins was not associated with hyperlipasemia and post-ERCP pancreatitis, irrespective of the combination with NSAIDs.

Hyperlipasemia and post-ERCP pancreatitis rate according to the prophylactic use of NSAID rectally and preexisting statin therapy.

Therapy	Statins	Without statins	p-value
<b>Hyperlipasemia</b>			
NSAD rectal	15/85 (17.6%)	41/209 (19.6%)	0.79
Without NSAR rectal	27/117 (23.1%)	83/425 (19.5%)	0.46
<b>Post-ERCP pancreatitis</b>			
NSAD rectal	4/85 (4.6%)	10/209 (4.7%)	0.78
Without NSAR rectal	5/117 (4.2%)	83/425 (3.7%)	0.98

Fig.1

### eP346 ENDOSCOPIC THERAPY IN A COHORT OF PATIENTS WITH CHRONIC PANCREATITIS FROM A PORTUGUESE REFERENCE CENTER

**Authors** Martins Figueiredo L<sup>1</sup>, Alexandrino G<sup>1</sup>, Rafael MA<sup>1</sup>, Carvalho Lourenço L<sup>1</sup>, Graça Rodrigues C<sup>1</sup>, Horta D<sup>1</sup>, Canena J<sup>1</sup>, Martins A<sup>1</sup>

**Institute** 1 Hospital Professor Doutor Fernando Fonseca, Gastroenterology, Amadora, Portugal

**DOI** 10.1055/s-0041-1724837

**Citation** Martins Figueiredo L, Alexandrino G, Rafael MA et al. eP346 ENDOSCOPIC THERAPY IN A COHORT OF PATIENTS WITH CHRONIC PANCREATITIS FROM A PORTUGUESE REFERENCE CENTER. *Endoscopy* 2021; 53: S210.

**Aims** Chronic pancreatitis (CP) is defined by progressive inflammatory and fibrotic changes in the pancreas, resulting in permanent structural damage. When medical therapy fails, endoscopic therapies (ET) may be required. The aim of this study is to evaluate the ET of a cohort of patients with CP.

**Methods** Retrospective observational study of CP patients undergoing ET between January/2010-December/2017. Demographic characteristics, used techniques, results and complications were evaluated.

**Results** Of a cohort of 92 patients with CP, 37 (40.2%) underwent ET and 13 (14.1%) surgery. Regarding the former, male: 83.8%, average age: 61.3 years. Alcoholic pancreatitis was the most common form of pancreatitis (81.1%), followed by idiopathic (16.2%) and autoimmune (2.7%). 54.1% (n=20) had smoking habits and 56.8% (n=21) had diabetes mellitus. 13.5% (n=5) had chronic pain. 102 ET were performed (endoscopic retrograde cholangiopancreatography: n=99, endoscopic ultrasound: n=3). Number of sessions per patient: 1 (n=9), 2 (n=8), 3 (n=8), 4 (n=7), 5 (n=5). Indications for ET: wirsung stricture (n=45), common bile duct (CBD) stricture (n=41), pancreatic stones (n=18), bile duct stones (n=6), mass/nodule (n=2), pseudocysts (n=2), bile duct obstruction (n=2), infected walled-off necrosis with CBD obstruction (n=1). Main ET procedures: placement of pancreatic (n=52) and biliary (n=45) plastic stents, biliary/pancreatic sphincterotomy (n=26), stricture dilation (n=18), stone extraction (n=13), lithotripsy (n=4; laser n=2; electrohydraulic n=1; mechanical with trapezoid basket n=1), placement of biliary metallic stents (n=5), transgastric cystotomy with pig-tail plastic stents (n=2) or HotAxios stent placement with 2 necrosectomy sessions (n=1). There were no complications. Of those submitted to ET, 16.2% (n=6) underwent surgery, 4 due to CBD stricture and 2 because of solid mass. There were 9 deaths during follow-up (24.3%), 2 due to pancreatic cancer and 7 not related to CP.

**Conclusions** According to our study, ET showed good results and safety profile, preventing surgical approach in the majority of cases during follow-up.

## eP347V MINOR PAPANILLA SPHINCTEROTOMY AND BIODEGRADABLE PANCREATIC STENT IN THE MANAGEMENT OF PANCREAS DIVISUM WITH RECURRENT PANCREATITIS IN A PATIENT

**Authors** Espinel J<sup>1</sup>, Pinedo E<sup>2</sup>, Cano V<sup>1</sup>, Pérez R<sup>1</sup>, Jiménez M<sup>1</sup>

**Institute** 1 Hospital Universitario de León, Endoscopy Unit, León, Spain; 2 Hospital Universitario de León, Radiology, León, Spain

**DOI** 10.1055/s-0041-1724838

**Citation** Espinel J, Pinedo E, Cano V et al. eP347V MINOR PAPANILLA SPHINCTEROTOMY AND BIODEGRADABLE PANCREATIC STENT IN THE MANAGEMENT OF PANCREAS DIVISUM WITH RECURRENT PANCREATITIS IN A PATIENT. *Endoscopy* 2021; 53: S211.

Endoscopic therapeutic papilla minor intervention (sphincterotomy/stenting) is challenging and reserved for patients with recurrent pancreatitis. We report our experience in an 80-year-old man with symptomatic Pancreas Divisum (10 previous episodes of acute pancreatitis). It is shown images of the cannulation technique, minor papilla sphincterotomy, placement of a new biodegradable stent, and finally, mucosal tattooing close to the minor papilla. The intervention was made successfully. So far, we have not found other publications using this biodegradable stent for that purpose. This stent could achieve to reduce post-ERCP pancreatitis and restenosis rate, keep the minor papilla open, and avoid removing the stent.

## eP348 CONTRIBUTION OF RETROGRADE CHOLANGIOPANCREATOGAPHY IN THE TREATMENT OF THE COMPLICATIONS OF THE PANCREAS DIVISUM

**Authors** Bradai S<sup>1</sup>, Mahmoudi M<sup>1</sup>, Khsiba A<sup>1</sup>, Medhioub M<sup>1</sup>, Ben Mohamed A<sup>1</sup>, Hamzaoui L<sup>1</sup>, Azzouz MM<sup>1</sup>

**Institute** 1 Taher Maamouri University Hospital, Gastroenterology, Nabeul, Tunisia

**DOI** 10.1055/s-0041-1724839

**Citation** Bradai S, Mahmoudi M, Khsiba A et al. eP348 CONTRIBUTION OF RETROGRADE CHOLANGIOPANCREATOGAPHY IN THE TREATMENT OF THE COMPLICATIONS OF THE PANCREAS DIVISUM. *Endoscopy* 2021; 53: S211.

**Aims** Pancreas divisum is the most common congenital malformation of the pancreas. It is secondary to the absence of fusion of the ventral duct and dorsal duct of the pancreas during the first weeks of embryogenesis. Retrograde cholangiopancreatography (ERCP), previously used as a diagnostic tool, currently plays a role in the treatment of symptomatic forms. The aim of our study was to assess the efficacy of ERCP in the management of symptomatic pancreas divisum.

**Methods** This is a retrospective study that included all patients who had ERCP for symptomatic pancreas divisum in our department between 2014 and 2019.

**Results** Six patients were collected: Four men and two women. The average age was 43,5 years. Pancreas divisum was revealed in all patients by flare-ups of acute pancreatitis. These were recurrent in 3 cases. The accessory papilla could only be catheterized in 4 patients. It allowed the extraction of microlithiasis in three cases. A pigtail pancreatic stent was placed in another patient due to the presence of a 12 mm stone. No severe complications were noted in all patients.

**Conclusions** Despite the technical difficulties of ERCP in cases of symptomatic pancreas divisum, it remains the first-line therapeutic tool.

## eP349 ERCP IN MANAGEMENT OF CONGENITAL BILIARY DILATATION IN ADULTS

**Authors** Taiymi A<sup>1,2</sup>, El Moutaouakkil N<sup>1</sup>, Kamaoui I<sup>1,3</sup>, El Mekkaoui A<sup>1,2</sup>, Kharrasse G<sup>1,2</sup>, Zazour A<sup>1,2</sup>, Ismaili Z<sup>1,2</sup>, Khannoussi W<sup>1,2</sup>

**Institute** 1 Mohammed 1st University, Digestive Disease Research Laboratory, Oujda, Morocco; 2 Mohammed VI University Hospital, Hepato Gastro

Enterology, Oujda, Morocco; 3 Mohammed VI University Hospital, Radiology, Oujda, Morocco

**DOI** 10.1055/s-0041-1724840

**Citation** Taiymi A, El Moutaouakkil N, Kamaoui I M et al. eP349 ERCP IN MANAGEMENT OF CONGENITAL BILIARY DILATATION IN ADULTS. *Endoscopy* 2021; 53: S211.

**Aims** To determine the role of ERCP in Treatment of CBD in adult patients.

**Methods** A retrospective descriptive study, including all adult patients presenting with CBD for a period of 4 years (March 2016- July 2020). Data regarding clinical presentation, investigations and management were analysed by SPSS. The type of cyst was classified according to Todani classification. All ERCP indications were validated in a multidisciplinary meeting.

**Results** 28 patients were included, median age was 64 years [38-89] with female predominance (Sex Ratio 4.5:1). Main symptoms were abdominal pain in 85.7%, acute pancreatitis in 10.7% and acute cholangitis in 10.7% of cases. 78.9% of pts had cholecystectomy for symptomatic Cholelithiasis. Elevated Liver tests were present in 46.4% with increase bilirubin level in 32.1%. Various imaging modalities (CT scan, MRCP) combined with endoscopic ultrasound allowed the diagnosis of CBD according to Todani classification: type I in 42%, type III in 7.1%, type IV in 32.1%, and type V in 17.8%. ERCP was performed in 46.4%. Indications were: acute cholangitis in 92, 3% and choledochocoele treatment in 7, 1%. CBD stones were found in 92, 3%. Endoscopic Clearance of CBD was performed in 80%. Endoscopic treatment of choledochocoele was performed by endoscopic sphincterotomy after multidisciplinary discussion. No post-ERCP complications were reported and the mean follow-up was 2,5 years. Surgical management was performed in 42.8%. 66% had cyst resection and roue en -Y- hepatico jejunostomy. 33.3% had cholecystectomy alone. Pathological results found no malignancies or premalignant lesion in all patients.

**Conclusions** In our study, indications of ERCP in patients with CBD were mainly acute cholangitis and choledochocoele treatment. It remains a safe procedure with no complications in patients with CBD. No malignancies or premalignant lesions were found after CBD surgery.

## eP350V CHOLANGIOSCOPIC FOLLOW-UP OF A SURGICALLY RESECTED INTRAHEPATIC BILIARY TYPE INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM (BT-IPMN)

**Authors** Sioulas A<sup>1</sup>, Kravari Z<sup>1</sup>, Pagkratis S<sup>2</sup>, Papadaki K<sup>1</sup>, Tzimas G<sup>2</sup>, Scotiniotis I<sup>1</sup>

**Institute** 1 Hygeia Hospital, 3rd Gastroenterology Department, Athens, Greece; 2 Hygeia Hospital, Hepatobiliary Surgery Department, Athens, Greece

**DOI** 10.1055/s-0041-1724841

**Citation** Sioulas A, Kravari Z, Pagkratis S M et al. eP350V CHOLANGIOSCOPIC FOLLOW-UP OF A SURGICALLY RESECTED INTRAHEPATIC BILIARY TYPE INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM (BT-IPMN). *Endoscopy* 2021; 53: S211.

A 54-year-old woman with episodes of acute cholangitis secondary to a mucus containing liver cyst communicating with the biliary system, underwent right hepatectomy (segments IVb-VIII) with hepaticojejunostomy to the common hepatic duct.

Histology revealed a BT-IPMN with high grade dysplasia and suspicion of positive margins. Therefore, cholangioscopy with the SpyGlass<sup>TM</sup> DS system to assess possible residual disease was indicated.

The common bile duct, the hepatic ducts (common, right and left) and the hepaticojejunal anastomosis were visualized. Neither papillary lesions nor intraductal mucus were noted. Of note, the cholangioscope gained easily access into the intestinal loop through the anastomosis.



## eP351V CHOLANGIOSCOPY WITH ELECTROHYDRAULIC LITHOTRIPSY (EHL) FOR POST-CHOLECYSTECTOMY MIRIZZI SYNDROME

**Authors** Sioulas A<sup>1</sup>, Spinou M<sup>1</sup>, Papadaki K<sup>1</sup>, Scotiniotis I<sup>1</sup>

**Institute** 1 Hygeia Hospital, 3rd Gastroenterology Department, Athens, Greece  
**DOI** 10.1055/s-0041-1724842

**Citation** Sioulas A, Spinou M, Papadaki K et al. eP351V CHOLANGIOSCOPY WITH ELECTROHYDRAULIC LITHOTRIPSY (EHL) FOR POST-CHOLECYSTECTOMY MIRIZZI SYNDROME. *Endoscopy* 2021; 53: S212.

A 48-year-old man with a history of laparoscopic cholecystectomy presented with right upper quadrant pain and jaundice. Magnetic Resonance Cholangiopancreatography showed a cystic duct stump stone causing proximal dilation of the biliary system, with normal distal common bile duct (CBD) diameter.

Endoscopic Retrograde Cholangiopancreatography confirmed the diagnosis of Mirizzi syndrome. However, removal of the stone with the conventional methods was unfeasible.

Subsequently, a cholangioscope (SpyGlass™ DS system) was advanced into the CBD revealing a stone impacted at the opening of the cystic duct stump. The stone was fragmented into multiple pieces by EHL, allowing complete removal with a balloon-catheter.

## eP352V FORGOTTEN BILIARY STENT TRAPPED IN AN IMPACTED STONE: SUCCESSFUL EXTRACTION AFTER COMBINED ELECTROHYDRAULIC LITHOTRIPSY AND BASKET RETRIEVAL BY CHOLANGIOSCOPY

**Authors** O'Neill C<sup>1</sup>, Bana e Costa T<sup>1</sup>, Figueiredo P<sup>1</sup>, Chagas C<sup>1</sup>

**Institute** 1 Centro Hospitalar Lisboa Ocidental, Department of Gastroenterology, Lisboa, Portugal  
**DOI** 10.1055/s-0041-1724843

**Citation** O'Neill C, Bana e Costa T, Figueiredo P et al. eP352V FORGOTTEN BILIARY STENT TRAPPED IN AN IMPACTED STONE: SUCCESSFUL EXTRACTION AFTER COMBINED ELECTROHYDRAULIC LITHOTRIPSY AND BASKET RETRIEVAL BY CHOLANGIOSCOPY. *Endoscopy* 2021; 53: S212.

77-years-old woman with obstructive jaundice. Five-years earlier, underwent ERCP with plastic stent placement due to incomplete removal of bile stones and was lost to follow-up. Presently, abdominal-CT identified dilated CBD with stones and a stent. During ERCP the stent fragmented and was not retrieved. Cholangioscopy with SpyGlassDS revealed a plastic stent encased in stones impacted on the CBD. Electrohydraulic lithotripsy(EHL) followed by complete removal of the stent and stones was performed using the SpyGlass Retrieval Basket.

The video illustrates the effectiveness and safety of cholangioscopic-guided-EHL for difficult bile duct stones with high clearance rates; and the usefulness of Spyglass devices.

## eP353 ENDOSCOPIC TREATMENT OF BILIOPANCREATIC PATHOLOGY IN PATIENTS WITH PREVIOUS WHIPPLE'S DUODENOPANCREATECTOMY: LESSONS LEARNED FROM SINGLE-BALLOON ENTEROSCOPY-ASSISTED ERCP

**Authors** Garcés-Duran R<sup>1</sup>, Monino L<sup>1</sup>, Deprez P<sup>1</sup>, Piessevaux H<sup>1</sup>, Moreels T<sup>1</sup>

**Institute** 1 Cliniques Universitaires Saint Luc, Hepato-gastroenterology Department, Brussels, Belgium  
**DOI** 10.1055/s-0041-1724844

**Citation** Garcés-Duran R, Monino L, Deprez P et al. eP353 ENDOSCOPIC TREATMENT OF BILIOPANCREATIC PATHOLOGY IN PATIENTS WITH PREVIOUS WHIPPLE'S DUODENOPANCREATECTOMY: LESSONS LEARNED FROM SINGLE-BALLOON ENTEROSCOPY-ASSISTED ERCP. *Endoscopy* 2021; 53: S212.

**Aims** Endoscopic treatment of subsequent biliopancreatic pathology is challenging due to altered anatomy in Whipple's duodenopancreatectomy. To evaluate

feasibility and safety of single-balloon enteroscopy-assisted ERCP (SBE-ERCP) to treat biliary and/or pancreatic pathology after Whipple's duodenopancreatectomy.

**Methods** Retrospective analysis of 41 patients with Whipple's anatomic variations who underwent SBE-ERCP from October 2014 to October 2020. Technical and clinical success rates and adverse events were evaluated.

**Results** There were 29 patients with a biliary indication, 8 pancreatic and 4 both biliary and pancreatic. Biliary ERCP was performed in 33 (73%) and pancreatic ERCP in 12 (27%) patients. In the biliary group male/female ratio was 23/10 with mean age of 66 (32-84) years. A total of 71 ERCP procedures were performed with a technical success rate in 63/71 (88.7%) of the procedures and a clinical success rate in 30/33 (90.9%) of the patients. Mild adverse events were self-limiting cholangitis and abdominal pain in 9/71 (13.7%) procedures. There were no serious adverse events. In the pancreatic group male/female ratio was 5/7 with mean age of 63 (53-80) years. A total of 19 ERCP procedures were performed with a technical success rate in 13/19 (68.4%) of the procedures (p=0.030 Chi-square vs. biliary ERCP) and a clinical success rate in 7/12 (58.3%) of the patients (p=0.012 Chi-square vs. biliary ERCP). Mild adverse events were self-limiting pancreatitis or abdominal pain in 5/19 (26.3%) procedures (p=0.145 Chi-square vs. biliary ERCP). There were no serious adverse events.

**Conclusions** Biliopancreatic pathology in patients with Whipple's duodenopancreatectomy can be dealt with using SBE-ERCP. Technical and clinical success rates are high (±90%) for biliary indications, whereas they are lower (<70%) for pancreatic indications. It is a very safe procedure with only mild adverse events. SBE-ERCP can be considered to treat biliopancreatic pathology in patients with Whipple's duodenopancreatectomy.

## eP354V SOLVING TWO PROBLEMS WITH ONE LOOK: SUCCESSFUL DIAGNOSIS OF AN INDETERMINATE BILIARY STRICTURE AND REMOVAL OF A MIGRATED BILIARY STENT BY CHOLANGIOSCOPY

**Authors** O'Neill C<sup>1</sup>, Bana e Costa T<sup>1</sup>, Neves J<sup>2</sup>, Queirós P<sup>2</sup>, Chagas C<sup>1</sup>

**Institute** 1 Centro Hospitalar Lisboa Ocidental, Department of Gastroenterology, Lisboa, Portugal; 2 Centro Hospitalar Universitário do Algarve, Department of Gastroenterology, Faro, Portugal  
**DOI** 10.1055/s-0041-1724845

**Citation** O'Neill C, Bana e Costa T, Neves J et al. eP354V SOLVING TWO PROBLEMS WITH ONE LOOK: SUCCESSFUL DIAGNOSIS OF AN INDETERMINATE BILIARY STRICTURE AND REMOVAL OF A MIGRATED BILIARY STENT BY CHOLANGIOSCOPY. *Endoscopy* 2021; 53: S212.

57-years-old man with obstructive jaundice. Abdominal-CT identified two biliary strictures. ERCP performed for plastic stent placement and cytology of the stricture(negative). During subsequent ERCP the stent fragmented and was not retrieved. Cholangioscopy with SpyGlassDS revealed: migrated stent fragment in right hepatic duct, CBD stenosis with ulceration and a vegetative lesion, suspicious for malignancy(biopsies showed low-grade-dysplasia). The stent was captured using the SpyGlass Snare. Due to high endoscopic suspicion, performed right hepatectomy confirmed Klatskin tumour.

SpyGlass-cholangioscopy enhances diagnosis of malignant strictures based on visual characteristics, allows guided-biopsies and impacts patient management. Novel Spyglass devices are useful for biliary foreign bodies removal.

## eP355V CHOLANGIOSCOPY WITH LASER LITHOTRIPSY IN THE TREATMENT OF A PATIENT WITH TYPE II MIRIZZI SYNDROME

**Authors** Moreira M<sup>1</sup>, Fernandes J<sup>2</sup>, Araújo T<sup>1</sup>, Canena J<sup>3,4</sup>, Lopes L<sup>1,5,6</sup>

**Institute** 1 Santa Luzia Hospital - Unidade Local de Saúde Alto Minho, Department of Gastroenterology, Viana do Castelo, Portugal; 2 Santa Luzia Hospital - Unidade Local de Saúde do Alto Minho, Department of Gastroenterology, Viana do Castelo, Portugal; 3 Professor Doutor Fernando Fonseca Hospital, Department of Gastroenterology, Amadora,

Portugal; 4 Nova Medical School/Faculty of Medical Sciences, Department of Gastroenterology, Lisbon, Portugal; 5 Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; 6 ICVS/3B's - PT Government Associate Laboratory, Braga, Portugal  
DOI 10.1055/s-0041-1724846

**Citation** Moreira M, Fernandes J, Araújo T et al. eP355V CHOLANGIOSCOPY WITH LASER LITHOTRIPSY IN THE TREATMENT OF A PATIENT WITH TYPE II MIRIZZI SYNDROME. *Endoscopy* 2021; 53: S212.

87 year-old patient with acute colangitis. In ERCP, a 5 mm stenosis was observed in the distal common bile duct, with upstream dilation. A 12 mm stone appeared to be impacted on the cystic duct. The cholangio-MRI confirmed the diagnosis of Mirizzi syndrome.

Given the patient's co-morbidities, it was decided to perform laser lithotripsy. In cholangioscopy, a 20 mm stone impacted on a fistula between the cystic duct and the common hepatic duct was observed. Laser lithotripsy was performed. A fistulous path involving less than one third of the hepatic duct (Mirizzi type II) was evident.

### eP356V AN UNCOMMON DIAGNOSIS IN SUSPECTED CBD STRICTURE - A VIDEO CASE PRESENTATION

**Authors** Elimeleh Y<sup>1</sup>, Zeina A-R<sup>2</sup>, Gralnek I<sup>2</sup>, Awadie H<sup>2</sup>

**Institute** 1 Bnai Zion Medical Center, Internal Medicine, Haifa, Israel; 2 Emek Medical Center, Gastroenterology and Hepatology Institute, Afula, Israel  
DOI 10.1055/s-0041-1724847

**Citation** Elimeleh Y, Zeina A-R, Gralnek I et al. eP356V AN UNCOMMON DIAGNOSIS IN SUSPECTED CBD STRICTURE - A VIDEO CASE PRESENTATION. *Endoscopy* 2021; 53: S213.

A 41-year-old morbidly obese female with isolated elevated alkaline phosphatase noted during preoperative bariatric assessment was referred for hepatobiliary evaluation. Cross sectional imaging and magnetic resonance cholangiopancreatography (MRCP) demonstrated a common hepatic duct (CHD) stricture with malignancy suspected. An endoscopic retrograde cholangiography confirmed CHD stricture. Brush cytology was benign. Due to malignancy suspicion and the planned bariatric surgery (gastric bypass surgery), direct cholangioscopy using SpyGlass was performed confirming a normal appearing CHD epithelium. However, cholangioscopy further demonstrated extrinsic compression of the CHD with arterial pulsations noted. Compression of the CHD secondary to right hepatic artery impingement was diagnosed.

### eP357 STRICTURE ASSESSMENT USING CHOLANGIOSCOPY IN PRIMARY SCLEROSING CHOLANGITIS

**Authors** Martin H<sup>1</sup>, Potts J<sup>2</sup>, Thorburn D<sup>2</sup>, El Menabawey T<sup>1</sup>, Webster G<sup>1</sup>

**Institute** 1 University College Hospital, Pancreatobiliary Medicine, London, United Kingdom; 2 Royal Free Hospital, Department of Hepatology, London, United Kingdom  
DOI 10.1055/s-0041-1724848

**Citation** Martin H, Potts J, Thorburn D et al. eP357 STRICTURE ASSESSMENT USING CHOLANGIOSCOPY IN PRIMARY SCLEROSING CHOLANGITIS. *Endoscopy* 2021; 53: S213.

**Aims** PSC carries a 15-20% lifetime risk of developing cholangiocarcinoma (CCA). The distinction between benign and malignant strictures in this patient cohort is uniquely challenging. A 2016 meta-analysis has shown that single operator cholangioscopy (SOC) with targeted biopsies appears to be the most accurate method(1). We report our experience of SOC and PSC stricture assessment.

**Methods** In 2 tertiary UK referral centres all patients who had a Spyglass DS™ SOC for stricture assessment in PSC were retrospectively enrolled. From clinical records and the endoscopy reporting tool patient demographics, degree of suspicion on referral, degree of suspicion during the endoscopy, histological diagnosis, and eventual diagnosis were assessed. Pre-test suspicion of malignancy was judged as high or low.

**Results** Data on 49 patients who had undergone 52 ERCs and Spyglass DS™ SOC was analysed.

Four cases of malignancy were confirmed; 3 had a high level of suspicion at SOC and 1 had a low level of suspicion. Nine cases (17.3%) had prior suspicious brushings locally which warranted further investigation. Three of these had CCA confirmed and 6 had no evidence of malignancy on SOC. Three of those with histological confirmed malignancy had cytology highly suggestive of high-grade dysplasia or adenocarcinoma from previous ERCs. Another patient had negative histology at SOC but was referred for surgery on the basis of a mass lesion on imaging. One patient developed CCA within 1 year of negative SOC.

**Conclusions** The role of SOC in stricture assessment in PSC remains unclear. In this series SOC picked up 1 case of CCA not detected on standard ERCP as well as not detecting at least 1 case of CCA. Despite improved image quality using Spyglass DS™ SOC visual diagnosis remains challenging. However, SOC appears to have an important role in assessing strictures where brush cytology is indeterminate.

► Tab. 1

Pre-Test Level of Suspicion	Numbers	Endoscopic level of Suspicion	Numbers (Malignancy)	Level of suspicion unclear (Malignancy)
High	45	High	12 (3)	4 (0)
		Low	29 (1)	
Low	7	High	2(0)	2 (0)
		Low	3 (0)	

### eP358V EARLY CHOLANGIOSCOPY FOR THE EVALUATION OF INDETERMINATE BILIARY STRICTURE

**Authors** Agudo B<sup>1</sup>, González-Haba M<sup>1</sup>, Pons F<sup>1</sup>, Tormo B<sup>1</sup>, Reyero MdP<sup>2</sup>, Calleja JL<sup>1</sup>

**Institute** 1 Puerta de Hierro University Hospital, Gastroenterology, Majadahonda, Spain; 2 Puerta de Hierro University Hospital, Radiology, Majadahonda, Spain  
DOI 10.1055/s-0041-1724849

**Citation** Agudo B, González-Haba M, Pons F et al. eP358V EARLY CHOLANGIOSCOPY FOR THE EVALUATION OF INDETERMINATE BILIARY STRICTURE. *Endoscopy* 2021; 53: S213.

A 45-year-old man with cystic fibrosis and lung transplantation, underwent cholecystectomy 4 months ago. He was now admitted with obstructive jaundice. MRCP and abdominal CT showed a stricture of the common bile duct with proximal ductal dilatation, no etiology could be ascertained. EUS-FNA from a hilar lymph node and ERCP-cytology from the stricture were negative for malignancy. Peroral cholangioscopy revealed a diffuse smooth narrowing of the distal bile duct resulting in a focal stricture. Visual impression suggested ischemic injury and guided biopsy was consistent with the diagnosis.

Early implementation of cholangioscopy may reduce diagnostic delays of indeterminate biliary strictures.

### eP359V CHOLANGIOSCOPY- ASSISTED TRANSPAPILLARY GALLBLADDER DRAINAGE: AN ALTERNATIVE TO ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE

**Authors** Pijoan Comas E<sup>1</sup>, Torres Monclús N<sup>1</sup>, Albuquerque M<sup>2</sup>, Torres Vicente G<sup>1</sup>, Vargas García A<sup>2</sup>, Miguel Salas I<sup>1</sup>, Bayas Pastor DC<sup>1</sup>,

Zaragoza Velasco N<sup>1</sup>, Reñé Espinet JM<sup>1</sup>, González-Huix Lladó F<sup>2</sup>SEED Working Group on ERCP

**Institute 1** University Hospital Arnau de Vilanova, Lleida, Spain; **2** Clínica Girona, Girona, Spain

DOI 10.1055/s-0041-1724850

**Citation** Pijoan Comas E, Torres Monclús N, Albuquerque M et al. eP359V CHOLANGIOSCOPY- ASSISTED TRANSPAPILLARY GALLBLADDER DRAINAGE: AN ALTERNATIVE TO ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE. *Endoscopy* 2021; 53: S213.

An ASA IV, 85-year-old man underwent ERCP for acute calculous cholecystitis and sepsis. A dilated CBD=10mm, lithiasis and biliary sludge were found. Sphincterotomy and biliary tract cleaning with balloon catheter were performed. The balloon-occluded-cholangiography showed a high cystic-duct (CD) insertion with a weak gallbladder image. Despite multiple attempts, CD was not cannulated. A single-operator-digital-cholangioscopy (SpyGlass DS-II) allowed the CD location and guidewire insertion with simultaneous outflow of the small lithiasis that obstructed it. Finally, a 10cmx7Fr double pig-tail plastic stent was placed from gallbladder to duodenum. The stent was removed at 3 months after, when clinical improvement allowed laparoscopic cholecystectomy.

### eP360V ROLE OF CHOLANGIOSCOPY IN THE LONGITUDINAL SPREADING ASSESSMENT OF BILIAR INTRAEPITHELIAL NEOPLASIA

**Authors** Torres Monclús N<sup>1</sup>, Pijoan Comas E<sup>1</sup>, Albuquerque M<sup>2</sup>, Vargas García A<sup>2</sup>, Torres Vicente G<sup>1</sup>, Miguel Salas I<sup>1</sup>, Bayas Pástor DC<sup>1</sup>, Zaragoza Velasco N<sup>1</sup>, Reñé Espinet JM<sup>1</sup>, González-Huix Lladó F<sup>2</sup>SEED Working Group on ERCP

**Institute 1** University Hospital Arnau de Vilanova, Lleida, Spain; **2** Clínica Girona, Girona, Spain

DOI 10.1055/s-0041-1724851

**Citation** Torres Monclús N, Pijoan Comas E, Albuquerque M et al. eP360V ROLE OF CHOLANGIOSCOPY IN THE LONGITUDINAL SPREADING ASSESSMENT OF BILIAR INTRAEPITHELIAL NEOPLASIA. *Endoscopy* 2021; 53: S214.

A 67-year-old man underwent ERCP for choledocolithiasis and dilated CBD-10mm. A 6-7mm round defect in middle CBD, fixed and unremovable with balloon catheter, was found. Sphincterotomy and extraction of biliary sludge and adenomatous like tissue sphacelus were performed. Brush-citology and intraductal-forceps-biopsy reported intraepithelial adenocarcinoma with microinfiltration. A single-operator-digital-cholangioscopy (SpyGlass DS-II) showed affected CBD from 1cm into duodenal major-papilla until hepatic-bile-duct confluence. Complete CBD circumference was affected, observing adenomatous like mucosa, fibrosis, irregular vessels, friability and a nodular area with a 3mm diameter stricture, that was overcome with cholangioscope pressure. Due to this accurate diagnosis, a successful curative resection was performed.

### eP361 TECHNICAL OUTCOMES OF ERCP PROCEDURES IN PATIENTS WITH COVID-19

**Authors** Voiosu T<sup>1</sup>, Voiosu A<sup>2</sup>, Boşkoski I<sup>3,4</sup>, Arvanitakis M<sup>5</sup>, Bronswijk M<sup>6</sup>, Hollenbach M<sup>7</sup>, Benguş A<sup>8</sup>, Bălănescu P<sup>1</sup>, Orlandini B<sup>4</sup>, Blero D<sup>5</sup>, van der Merwe S<sup>6</sup>, Mateescu RB<sup>1</sup>, Devière J<sup>5</sup>, Costamagna G<sup>3,4</sup>

**Institute 1** Carol Davila Faculty of Medicine, Internal Medicine/ Gastroenterology, Bucharest, Romania; **2** Colentina Clinical Hospital, Gastroenterology, Bucharest, Romania; **3** Fondazione Policlinico Universitario Agostino Gemelli, Digestive Endoscopy Unit, Rome, Italy; **4** Centre for Endoscopic Research Therapeutics and Training (CERTT), Catholic University of Rome, Rome, Italy; **5** Department of Gastroenterology, Hepatopancreatology, and Digestive Oncology, CUB Hôpital Erasme, Université Libre de Bruxelles, Brussels, Belgium; **6** Department of Gastroenterology and Hepatology, University Hospitals Gasthuisberg, University of Leuven, Leuven, Belgium; **7** Division of Gastroenterology; Medical Department II (Oncology, Gastroenterology, Hepatology, Pulmonology, Infectious Diseases), University of

Leipzig, Leipzig, Germany; **8** Gastroenterology Department, Colentina Clinical Hospital, Bucharest, Romania

DOI 10.1055/s-0041-1724852

**Citation** Voiosu T, Voiosu A, Boşkoski I et al. eP361 TECHNICAL OUTCOMES OF ERCP PROCEDURES IN PATIENTS WITH COVID-19. *Endoscopy* 2021; 53: S214.

**Aims** The unprecedented situation caused by the COVID-19 pandemic has profoundly affected endoscopic practice in regard to access, volume, and workflow. We aimed to assess the potential changes in the technical outcomes of ERCP procedures carried out in patients with confirmed SARS-CoV-2 infection. **Methods** We conducted an international, multicenter, retrospective, matched case-control study of ERCP procedures carried out in patients with confirmed COVID-19. The main outcome was technical success of the procedure as assessed by the endoscopist, and the secondary outcome was the development of procedure-related adverse events. Each case was matched in a 1:4 ratio with controls extracted from each center's database in order to identify relevant changes in outcome measures compared to the pre-pandemic era.

**Results** Eighteen procedures performed in 16 COVID-19 patients (14 men, 65 years (9-82)) between the 15th of March and the 1st of July 2020 and 67 matched controls were included in the final analysis. Technical success was achieved in 14/18 procedures in COVID-19 cases, which was significantly lower as compared to the control group (14/18 vs. 64/67, p=0.034), with an endoscopic reintervention required in 9/18 cases. However, the rate of procedure-related adverse events was low in both groups (1/18 vs. 10/67, p=0.44). On multivariable analysis COVID-19 status remained the only risk factor for technical failure of the procedure (OR of 19.9 (95%CI 1.4-269)).

**Conclusions** The COVID-19 pandemic has affected the volume and practice of ERCP, without significantly impacting patient-related outcomes. Prioritizing cases and following recommendations on safety measures can ensure good outcome with minimal risk in dedicated centers.

► **Table 1** Comparison of technical characteristics and procedure-related outcomes between COVID-19 cases and the control group.

	COVID-19 cases	Control cases	p-value
<b>Cannulation method</b>			
GW	11/18	47/67	0.22
CG	3/18	7/67	
DGW	4/18	5/67	
DGW	4/18	5/67	
Precut	0/18	7/67	
Other	0/18	1/67	
Failed	0/18	0/67	
Technical success	14/18	64/67	0.034*
Need for reintervention	9/18	20/67	0.16
Procedure-related AE	1/18	10/67	0.44

### eP362 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY COMPLICATIONS: UNIT EXPERIENCE

**Authors** Chaimae A<sup>1</sup>, Mohamed B<sup>1</sup>, Nawal L<sup>1</sup>, Imane B<sup>1</sup>, Fatima Zahra A<sup>1</sup>  
**Institute 1** Mohammed V University, Gastroenterology C, Rabat, Morocco

DOI 10.1055/s-0041-1724853

**Citation** Chaimae A, Mohamed B, Nawal L et al. eP362 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY COMPLICATIONS: UNIT EXPERIENCE. *Endoscopy* 2021; 53: S214.

**Aims** Endoscopic retrograde cholangiopancreatography (ERCP) represents one of the major therapeutic advances in digestive endoscopy. The indications for ERCP, initially diagnostic, are now mainly therapeutic. An assessment of the risks and complications of this technique is essential and allows their prevention.

The aim of our work was to assess complications of ERCP in our practice.

**Methods** It was a retrospective single-center study, including patients who underwent ERCP, within the period from June 2019 to September 2020, and presented a complication related to ERCP.

**Results** We have recorded 200 CPRE during the study period. Seventeen patients (8.5 %) presented a post-CPRE complication. The average age was 51 years. There were 13 females (76.5 %) and 4 males (23.5 %) with a sex-ratio F/M of 3.25. The main symptoms were abdominal pain (hepatic colic and pancreatic pain) for 10 patients (59 %) and cholestatic jaundice for 7 patients (41 %). The indications of ERCP in our series were: common bile duct stone in 10 cases (59 %), malignant stenosis of the bile duct concerning 6 patients (35.2 %) (3 pancreatic head tumors and 3 hilar cholangiocarcinoma), and one patient had a liver hydatid cyst complicated of biliary fistula (5.8 %). Infection was the most common complication with 8 cases of acute cholangitis (4 %) including 6 patients with malignant biliary stenosis. Post-sphincterotomy bleeding occurred in 5 cases (1.5 %) which the ERCP indication was choledocholithiasis in 4 cases. Four patients (2 %) presented post-ERCP pancreatitis (PEP) which 3 of whom had choledocholithiasis. The outcome was favorable for all the patients who managed conservatively except for one patient who died due to septic shock.

**Conclusions** The complications of ERCP are now well known and mostly depend on the complexity of the procedure and patient features. Infection, bleeding post-ERCP, and PEP were the most frequent complications in our series. All ERCP-practitioner needs to recognize this kind of complication and manage it.

### eP363V BILIARY STENT MIGRATION WITH DUODENAL PERFORATION – HOW TO MANAGE?

**Authors** Marques de Sá I<sup>1</sup>, Küttner-Magalhães R<sup>2,3</sup>, Pereira Guedes T<sup>2,3</sup>, Silva J<sup>2,3</sup>, Ferreira D<sup>2,3</sup>, Ferreira JM<sup>2</sup>, Pedroto I<sup>2,4</sup>

**Institute** 1 Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal; 2 Santo António Hospital, Porto University Hospital Center, Gastroenterology, Porto, Portugal; 3 Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal; 4 Instituto de Ciências Biomédicas Abel Salazar, Porto, Portugal

DOI 10.1055/s-0041-1724854

**Citation** Marques de Sá I, Küttner-Magalhães R, Pereira Guedes T et al. eP363V BILIARY STENT MIGRATION WITH DUODENAL PERFORATION – HOW TO MANAGE?. *Endoscopy* 2021; 53: S215.

A 50-year-old man with liver transplant for hepatocellular carcinoma was admitted because of cholangitis and choledocholithiasis. He underwent endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy, stone extraction and a 10Fr x 12cm straight plastic stent was inserted due to doubt about completeness of stone removal. On D7 after ERCP, he maintained fever and hyperbilirubinemia. Computed tomography revealed distal biliary stent migration with duodenal perforation. Endoscopy was performed. The stent was extracted with foreign body forceps and the transmural defect closed with an over-the-scope-clip, uneventfully.

Biliary stent migration with duodenal perforation is rare. Although guidelines on management are lacking, endoscopy is an appropriate first-line treatment.

### eP364V RENAL EXCRETION OF CONTRAST AFTER A COMPLICATED ERCP: A RARE COMPLICATION?

**Authors** Garrido F<sup>1,1</sup>, Villa JC<sup>1</sup>, Martínez-Alcalá Á<sup>1</sup>, Zaera C<sup>1</sup>, Encinas A<sup>2</sup>, Mora AM<sup>1</sup>, Sacristán E<sup>2</sup>, Ponferrada Á<sup>1</sup>

**Institute** 1 University Hospital Infanta Leonor, Gastroenterology, Madrid, Spain; 2 University Hospital Infanta Leonor, Radiology-UCR., Madrid, Spain  
DOI 10.1055/s-0041-1724855

**Citation** Garrido F, Villa JC, Martínez-Alcalá Á et al. eP364V RENAL EXCRETION OF CONTRAST AFTER A COMPLICATED ERCP: A RARE COMPLICATION? *Endoscopy* 2021; 53: S215.

A 22 years old woman came to our Hospital with abdominal pain and choledocholithiasis in abdominal ultrasound. An ERCP was requested, seeing the flow of the contrast through the ureter during the procedure. A mild acute pancreatitis after ERCP was diagnosed.

The renal excretion of contrast during an ERCP is a complication described previously, due to over injection of contrast in the Wirsung, and the subsequent intravascular presence of this contrast.

It is associated with acute pancreatitis after ERCP, and it could be more frequent than we can imagine, but it is misdiagnosed in most of the cases.

### eP365 PROPHYLACTIC PANCREATIC STENTING IN ERC BILIARY CANNULATION. EFFECTIVITY AND STENT DURATION

**Authors** Stathopoulos P<sup>1</sup>, Astheimer P<sup>1</sup>, Lerner P<sup>1</sup>, Breitling L<sup>1</sup>, Denzer U<sup>1</sup>  
**Institute** 1 University Clinic Marburg, Clinic for Gastroenterology, Marburg, Germany

DOI 10.1055/s-0041-1724856

**Citation** Stathopoulos P, Astheimer P, Lerner P et al. eP365 PROPHYLACTIC PANCREATIC STENTING IN ERC BILIARY CANNULATION. EFFECTIVITY AND STENT DURATION. *Endoscopy* 2021; 53: S215.

**Aims** ERCP is the standard procedure for biliary access. In case of initial cannulation of the pancreatic duct a prophylactic pancreatic stent (PPS) declines the rate of post ERC pancreatitis (PEP). We have analyzed frequency, PEP rate and stent duration of PPS in the biliary cannulation of naive papilla in a tertiary care center.

**Methods** All ERCP interventions from 1-2017 to 12-2019 were analysed. Parameters registered were indication, kind of intervention, house classification, anatomy, success of cannulation, PPS and PEP rate.

**Results** 1610 ERCP interventions were undertaken (anatomy: 1564 normal, 46 postoperative (Roux-y or Bill). Indications in normal anatomy: Biliary (+/- pancreatic) 95.6 % (1495); pancreatic 4.4 % (69). Distribution of house classification: Biliary (+/- pancreatic): House I n = 842, House II n = 284, House III n = 363. Pancreatic: House II n = 55; House III N = 14.

40.5 % (633/1564) of interventions with biliary indication (Malign obstruction 26.4 %, CDL 59.9 %, benign stenosis 4.4 %, biliary leakage 3.6 %, others 8,6 %) had a naive papilla.

PPS after 1. or 2. guidewire cannulation of the pancreatic duct was inserted in 200/643 interventions (naive papilla/repeated ERC after precut). Removal of PPS after a means of 4.37 days (1-21). PEP rate: PPS +: 9 % (18/200) vs. PPS -: 4.5 % (20/443). PEP disease course: PPS +: Mild: 17; moderate 1; PPS -: Mild: 12; moderate: 4; severe: 4 (1 lethal with comorbidity).

Total ERCP's PEP rate: 3.1 % (48/1564) 36 mild, 8 moderate; 4 severe. After removal of the PPS no deterioration of PEP or new PEP occurred.

**Conclusions** Insertion of a PPS in case of accidentally guidewire cannulation of the pancreatic duct significantly drops the rate of severe and moderate PEP courses. Removal of PPS did not lead to complications.



## eP366 INCIDENCE OF POST-ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY PANCREATITIS (PEP) ACCORDING TO THE PROTOCOL OF PROPHYLAXIS USED. A RETROSPECTIVE, CROSS-SECTIONAL OBSERVATIONAL STUDY

**Authors** Iglesias-García J<sup>1</sup>, Parma Caputo LF<sup>1</sup>, Mejuto R<sup>1</sup>, Ureña Campos R<sup>1</sup>, De la Iglesia-García D<sup>1</sup>, Lariño-Noia J<sup>1</sup>, Iglesias-Canle J<sup>1</sup>, Domínguez-Muñoz JE<sup>1</sup>

**Institute** 1 Santiago de Compostela, Gastroenterology and Hepatology, Santiago de Compostela, Spain

**DOI** 10.1055/s-0041-1724857

**Citation** Iglesias-García J, Parma Caputo LF, Mejuto R et al. eP366 INCIDENCE OF POST-ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY PANCREATITIS (PEP) ACCORDING TO THE PROTOCOL OF PROPHYLAXIS USED. A RETROSPECTIVE, CROSS-SECTIONAL OBSERVATIONAL STUDY. *Endoscopy* 2021; 53: S216.

**Aims** Compare different protocols of PEP prophylaxis.

**Methods** A retrospective, observational and cross-sectional study was conducted. Patients undergoing ERCP for biliary diseases between 2013 and 2019 were included. Patients diagnosed with any pancreatic disease (pancreatic cancer, chronic pancreatitis, previous acute pancreatitis) and post-surgical altered bilio-pancreatic anatomy were excluded. Patients were divided in four cohorts depending on the type of PEP prophylaxis used in different periods. Group I: rectal diclofenac 100mg in high-risk patients of PEP; group II: rectal diclofenac + LR 500 mL in high-risk patients of PEP; group III: rectal diclofenac + LR 500 mL in every patient undergoing ERCP; group IV: rectal indomethacin + LR 500 mL in every patient undergoing ERCP. All patients were monitored for pain and serum pancreatic enzymes over 24h after ERCP. Incidence of PEP was calculated and compared by ANOVA. Risk factors for PEP were analysed by logistic regression.

**Results** 1,621 patients were included, mean age 71 ± 15 years, 832 males, 455 in group I, 254 in group II, 728 in group III and 184 in group IV. The global incidence of PEP was 3.86% (group I: 2.42%, group II: 3.94%, group III: 4.3% and group IV: 4.9%, p=0.3). Smoking (OR 9.0 CI 95% 1.9-42.1) and cannulation of the pancreatic duct (OR 9.1 CI 95% 1.8-46.0) were the most relevant risk factors for PEP in the era of routine prophylaxis.

**Conclusions** This study showed that any combination of either rectal indomethacin or diclofenac with hydration with LR in high-risk patients or in every patient undergoing ERCP are equally effective in preventing PEP. Smoking and cannulation of the pancreatic duct are risk factors of PEP in the era of routine prophylaxis.

## eP367 ACUTE CHOLANGITIS IN PATIENTS WITH SEVERE COMORBIDITIES: IS ERCP SAFE AND EFFECTIVE?

**Authors** Sequeira C<sup>1</sup>, Costa Santos I<sup>1</sup>, Coelho M<sup>1</sup>, Dantas E<sup>1</sup>, Mangualde J<sup>1</sup>, Freire R<sup>1</sup>, AP Oliveira<sup>1</sup>

**Institute** 1 Setubal Hospital Center, Gastroenterology, Setubal, Portugal

**DOI** 10.1055/s-0041-1724858

**Citation** Sequeira C, Costa Santos I, Coelho M et al. eP367 ACUTE CHOLANGITIS IN PATIENTS WITH SEVERE COMORBIDITIES: IS ERCP SAFE AND EFFECTIVE? *Endoscopy* 2021; 53: S216.

**Aims** Acute gallstone cholangitis (AGC) is a heterogeneous clinical entity. Patients with severe disease usually require urgent biliary decompression. Endoscopic retrograde cholangiopancreatography (ERCP) in patients with severe comorbidities is a significant challenge for endoscopists, however evidence about its safety and efficacy is still controversial.

**Aims** To determine the safety and efficacy of ERCP in patients with AGC and severe comorbidities.

**Methods** Retrospective review of AGC admissions who underwent ERCP, from January 2015 to December 2019. We defined patients with a Charlson Comorbidity Index score (CCIs) >3 as having severe comorbid status. Efficacy was evaluated through biliary cannulation success and complete stone clearance, and safety through registration of post-ERCP and anaesthesia-related complications.

**Results** 189 patients were included (108 with and 81 without severe comorbid status). There was a male preponderance (53%) and the average age was 74.1 ± 13.2 years. The proportion of severe disease (severe: 26% vs. non-severe 19%; p=0.130) and average timing of ERCP (4.14 ± 2.61 vs. 3.62 ± 2.31 days; p=0.187) were independent of comorbid status.

Technical success was similar in both groups with biliary cannulation possible in 182 patients and a successful stone extraction achieved in 175, in one session. Also, adverse events related to ERCP and anaesthesia were independent of CCIs, with a rate of 4.2% (2 pancreatitis and 6 haemorrhages) and 4.7%, respectively. Patients with CCIs >3 underwent ERCP under general anaesthesia more frequently (6.9% vs. 1.1%; p=0.015). The length of hospital stay of patients with severe comorbidities was significantly higher (9.44 ± 3.01 vs. 7.46 ± 5.33 days, p=0.02), however the proportion of intensive care admissions was comparable (4.3% vs. 3.2%, p=0.986). Procedure-related mortality was zero, but overall intrahospital mortality was significantly higher in patients with CCIs >3 (4.7% vs. 0% p=0.049).

**Conclusions** Our results show that ERCP can be safely and efficaciously performed on patients with severe comorbidities, although mortality should be taken into consideration when selecting therapeutic options.

## eP368V FOREIGN BODY IN THE BILIARY TREE: A NEW COMPLICATION ASSOCIATED WITH ERCP

**Authors** Florez-Diez P<sup>1</sup>, Rodriguez-Ferreiro N<sup>1</sup>, Beltran V<sup>1</sup>, Lopez-Mourelle A<sup>1</sup>, Lamas S<sup>1</sup>, Arguelles-Estrada P<sup>1</sup>, del Caño-Cerdan C<sup>1</sup>, Nieto-Jara A<sup>1</sup>, Suarez-Noya A<sup>1</sup>, Gejo A<sup>1</sup>, Celada-Sendino M<sup>1</sup>, Carballo-Folgozo L<sup>1</sup>, Fraile M<sup>1</sup>, Barreiro-Alonso E<sup>1</sup>, Garcia-Bernardo O<sup>1</sup>, Garcia-Menendez A<sup>1</sup>

**Institute** 1 Hospital Universitario Central de Asturias, Digestive Diseases, Oviedo, Spain

**DOI** 10.1055/s-0041-1724859

**Citation** Florez-Diez P, Rodriguez-Ferreiro N, Beltran V et al. eP368V FOREIGN BODY IN THE BILIARY TREE: A NEW COMPLICATION ASSOCIATED WITH ERCP. *Endoscopy* 2021; 53: S216.

A man with liver abscesses and choledocholithiasis. ERCP with sphincterotomy and stone extraction with balloon catheter. Once antibiotic was completed, a CT showed a liver abscesses improvement, identifying a metallic foreign body of 20 mm in liver segment VIII, suggestive of balloon catheter fragment. Extraction was attempted with a new ERCP and percutaneously, without success. At the same time as open cholecystectomy, it was attempted surgical extraction, but intraoperative ultrasound showed an intimate relationship with a large portal branch, giving up the attempt. Subsequent radiological controls have been carried out, without alterations, so an expectant attitude has been maintained.

## eP369 IGG4 RELATED HEPATOBILIARY DISEASE: A ROLE FOR ERCP

**Authors** Ahmed W<sup>1</sup>, Karim S<sup>1</sup>, Sidhu B<sup>1</sup>, Wadsworth C<sup>1</sup>, Vlavianos P<sup>1</sup>, Bansi D<sup>1</sup>, Phillips N<sup>1</sup>

**Institute** 1 Imperial College Healthcare NHS Trust, Hepato-Pancreato-Biliary Unit, London, United Kingdom

**DOI** 10.1055/s-0041-1724860

**Citation** Ahmed W, Karim S, Sidhu B et al. eP369 IGG4 RELATED HEPATOBILIARY DISEASE: A ROLE FOR ERCP. *Endoscopy* 2021; 53: S216.

**Aims** IGG4 related hepatobiliary disease can present with symptomatic biliary obstruction alongside cholangiopathy and pseudotumours. We describe a cohort of patients undergoing Endoscopic Retrograde Cholangiopancreatography (ERCP) prior to diagnosis of IGG4 related hepatobiliary disease (IGG4-RD) and report on their clinical course.

**Methods** Consecutive patients with IGG4-RD who underwent ERCP over a five year period were identified. Patients were diagnosed based on histology, imaging and serum IGG4 levels.

**Results** Thirteen patients were identified. The median age at diagnosis was 64 years old (range 28-85 years old). None had sites of IGG4 involvement outside the hepatobiliary system. Nine (69.2%) had both intra and extrahepatic involvement, two (15.4%) each had intrahepatic strictures or common bile duct strictures alone. Four (30.8%) presented with pseudo-tumours.

Histology was obtained via endoscopic ultrasound (EUS) in 10 patients (76.9%) and via ERCP with intraductal biopsies in three (23.1%). Median IGG4 levels at diagnosis was 4.54 (range 0.73 -12.48). All had fully covered self-expanding metal stents (FC-SEMS) inserted.

Eleven (84.6%) patient received Prednisolone for induction therapy. Three (23.1%) patients had Prednisolone monotherapy for maintenance, four (30.8%) had dual therapy with Azathioprine and one received Rituximab (intolerant of Prednisolone and Azathioprine due to side effects). Four (30.8%) were not on maintenance immunosuppression and two (15.4%) patients had stricture resolution with placement of FC-SEMS alone. All are still under follow up. All had marked improvement in biliary strictures following treatment and are currently in remission.

**Conclusions** We describe a cohort of patient with IGG4 related hepatobiliary disease. We show that in this setting EUS guided biopsy alongside ERCP is an effective method of tissue acquisition. We corroborate previous findings of improvement with medical therapy and show that ERCP can be a useful adjunct.

## eP370 ACUTE CHOLANGITIS: ETIOLOGICAL AND THERAPEUTIC ASPECTS

**Authors** Essadni Y<sup>1</sup>, Borahma M<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

**Institute** 1 Mohammed V University, Ibn Sina Hospital, Gastroenterology C, Rabat, Morocco

**DOI** 10.1055/s-0041-1724861

**Citation** Essadni Y, Borahma M, Lagdali N et al. eP370 ACUTE CHOLANGITIS: ETIOLOGICAL AND THERAPEUTIC ASPECTS. *Endoscopy* 2021; 53: S217.

**Aims** Acute cholangitis (AC) is an infection of the bile duct system. The main etiologies are biliary stones and malignant obstructions. The ultimate treatment is the endoscopic drainage (ED). Our work aimed to assess the etiological and therapeutic aspects of cholangitis in our center.

**Methods** This was a retrospective descriptive study including all patients hospitalized for AC according to Tokyo 2018 guidelines, over one year, and who underwent an ED.

**Results** Out of 148 EDs, 42 patients had AC. The average age was 62.8 years with feminine predominance (62%) and sex ratio (F/M) of 0.62. Regarding etiologies, we recorded 50% of AC had biliary stones (choledocholithiasis in 40.5%, cystic duct stones in 2.4%, and multiple common bile duct stones in 7.1%), malignant obstructions represented 43% of AC (pancreatic head tumor in 12%, ampulloma in 9.5%, hilar cholangiocarcinoma in 9.5%, a gallbladder tumor in 4.8%, 1 case of hepatic metastasis, 1 case of gastric tumor invading the CBD and 1 case of stent obstruction). Other etiologies were a case of liver hydatid cyst fistulized in the bile duct, one case of stenosing odditis, and one case with Sump syndrome. All patients received intravenous antibiotics as well as ED. Purulent cholangitis was found in 75% of patients with cholangitis grade III, 25% with grade II, and 10% with grade I. Patients with biliary lithiasis underwent stones extraction, and a plastic stent was deployed in case of incomplete drainage or in case of purulent cholangitis (5 cases). For patients with malignant obstructions, a metallic stent was inserted. For infectious and inflammatory causes, patients underwent endoscopic sphincterotomy alone.

**Conclusions** AC is a serious complication of biliary obstruction. The etiologies remain dominated by lithiasis and tumors. ED is the treatment of choice and the management depends on the etiology and the grade of the cholangitis.

## eP371 EMERGING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN SEVERE ACUTE CHOLANGITIS

**Authors** Macedo C<sup>1</sup>, Sant'anna M<sup>1</sup>, Gomes D<sup>1,2</sup>, Elvas L<sup>3</sup>, Almeida N<sup>1,2</sup>, Gravito-Soares M<sup>1,2</sup>, Mendes S<sup>1</sup>, Perdigoto D<sup>1,2</sup>, Camacho E<sup>1</sup>, Narra Figueiredo P<sup>1,2</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Gastroenterology, Coimbra, Portugal; 2 University of Coimbra, Faculty of Medicine, Coimbra, Portugal; 3 Instituto Português de Oncologia de Coimbra, Gastroenterology, Coimbra, Portugal

**DOI** 10.1055/s-0041-1724862

**Citation** Macedo C, Sant'anna M, Gomes D et al. eP371 EMERGING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN SEVERE ACUTE CHOLANGITIS. *Endoscopy* 2021; 53: S217.

**Aims** Acute cholangitis with organ failure has a mortality rate of around 100% if rapid decompression of the bile duct does not occur. The aim of the present study was to evaluate the role of endoscopic retrograde cholangiopancreatography (ERCP) in emergent drainage at a tertiary referral center.

**Methods** Retrospective study including ERCP performed on an emergent basis (<48h of admission) due to acute cholangitis between 2014 and 2019. Recorded demographic characteristics of patients, severity of cholangitis, endoscopic findings and procedures performed as well as mortality at 30 days.

**Results** Included 109 procedures, successful catheterization in 96.3%(105/109). The majority (53.3%) were male, mean age 77.8±10.4 years, 88.6% were elderly (> 65 years), 49.5% being oldest-old(≥80 years), mean Charlson's comorbidities index of 5.1 ± 1.9 and duration of hospitalization was 14.6±10 days. One third of the patients were transferred from other hospitals and 80% required admission to intermediate/intensive care units (mean duration 5.4 ±3.6 days). Cholangitis severity (Tokyo classification) was moderate in 16.5% and severe in 83.5%. Half pd patients (51%) had failure of at least one organ. Choledocholithiasis was the main etiology (73.3%) and in 14.3% of patients there was concomitant acute pancreatitis. Time from clinical worsening to ERCP: <24h - 75.9%; 24-48h - 24.1%. About 20% of the ERCP was performed in operating room, the remaining in endoscopy unit. Endoscopic sphincterotomy (EET) in 54.3%, placement of biliary stents in 82.9% and pancreatic stents in 10.5%. Findings: choledocholithiasis-70.5%; pus-55.2%; occluded biliary stents-10.5%; biliary stenosis-9.5%. Complications in 10.6% (hemorrhage after EET with endoscopic hemostasis). Anesthetic complications in 3.8%. Mortality of 5.8% and 14.7%, 48h and 30 days after ERCP, respectively, unrelated to the procedure.

**Conclusions** Emerging ERCP is an effective and safe procedure in situations of severe acute cholangitis, playing a key role in improving survival in patients who initially have a poor prognosis.

## eP372 SUSPECTED BILE DUCT PATHOLOGY IN ROUX-EN-Y LIVER TRANSPLANT PATIENTS: LESSONS LEARNED FROM SINGLE-BALLOON ENTEROSCOPY-ASSISTED ERCP

**Authors** Moreels T<sup>1</sup>, Monino L<sup>1</sup>, Dahlqvist G<sup>1</sup>, Delire B<sup>1</sup>, Coubeau L<sup>2</sup>, Ciccarelli O<sup>2</sup>, Bonaccorsi Riani E<sup>2</sup>, Goffette P<sup>3</sup>, Sokal E<sup>4</sup>, Piessevaux H<sup>1</sup>

**Institute** 1 Cliniques Universitaires Saint-Luc, Gastroenterology & Hepatology, Brussels, Belgium; 2 Cliniques Universitaires Saint-Luc, Abdominal Transplantation, Brussels, Belgium; 3 Cliniques Universitaires Saint-Luc, Radiology, Brussels, Belgium; 4 Cliniques Universitaires Saint-Luc, Pediatric Gastroenterology & Hepatology, Brussels, Belgium

**DOI** 10.1055/s-0041-1724863

**Citation** Moreels T, Monino L, Dahlqvist G et al. eP372 SUSPECTED BILE DUCT PATHOLOGY IN ROUX-EN-Y LIVER TRANSPLANT PATIENTS: LESSONS LEARNED FROM SINGLE-BALLOON ENTEROSCOPY-ASSISTED ERCP. *Endoscopy* 2021; 53: S217.

**Aims** Monocentric retrospective study of the feasibility of single-balloon enteroscopy-assisted ERCP (SBE-ERCP) to diagnose and treat biliary pathology in Roux-en-Y liver transplant patients.

**Methods** From 2016 to 2020 all SBE-ERCP procedures in liver transplant patients were analysed for indications, technical and clinical success and adverse events.

**Results** 40 patients (26 males; mean age 43±3 years (range 13-81)) underwent 69 SBE-ERCP procedures. Indications were suspicion of anastomotic stricture (40%), cholangitis (32.5%), bile duct stones/casts (20%), biliary leak (2.5%), haemobilia (2.5%) and sepsis (2.5%). Technical success rate per patient was 85% (34/40). Failure was due to inability to reach the hepaticojejunal anastomosis. SBE-ERCP was normal in 12/34 (35%), confirmed anastomotic stricture in 12/34 (35%), bile duct stones/casts in 6/34 (18%), indwelling metallic stent in 2/34 (6%) and biliary leak and bile duct torsion both in 1/34 (3%). Endoscopic interventions: balloon dilatation (6-9 mm), plastic stent insertion (4-7 Fr), stone extraction, bile duct biopsy and direct cholangioscopy in 1 to 6 SBE-ERCP procedures per patient. Only minor adverse events (self-limiting cholangitis) occurred in 5/34 patients (15%). Clinical success was measured by the evolution of biliary liver function tests before, 1 day after and 30 days after the last SBE-ERCP procedure. There was a significant decrease in gamma-GT serum levels (345±90 U/L before, 257±73 U/L after and 146±27 U/L after 30 days,  $p=0.023$ ) and alkaline phosphatase levels (337±70 U/L before, 343±89 U/L after and 198±53 U/L after 30 days,  $p=0.044$ ), whereas the decrease in bilirubine serum levels was not significant.

**Conclusions** Endoscopic evaluation of the bile duct system is feasible and safe using SBE-ERCP in Roux-en-Y liver transplant patients, allowing close examination of the anastomosis and the bile ducts. Endoscopic therapy leads to clinical improvement of liver function tests.

### eP373 ENDOSCOPIC MANAGEMENT OF BILIOPANCREATIC PATHOLOGY IN PATIENTS WITH ROUX-EN-Y GASTRIC BYPASS: WHAT, WHEN AND HOW?

**Authors** [Monino L<sup>1</sup>](#), [Garces-Duran R<sup>1</sup>](#), [Piessevaux H<sup>1</sup>](#), [Deprez P<sup>1</sup>](#), [Moreels T<sup>1</sup>](#)  
**Institute** 1 Cliniques Universitaires Saint-Luc, Gastroenterology & Hepatology, Brussels, Belgium

**DOI** [10.1055/s-0041-1724864](https://doi.org/10.1055/s-0041-1724864)

**Citation** Monino L, Garces-Duran R, Piessevaux H et al. eP373 ENDOSCOPIC MANAGEMENT OF BILIOPANCREATIC PATHOLOGY IN PATIENTS WITH ROUX-EN-Y GASTRIC BYPASS: WHAT, WHEN AND HOW? *Endoscopy* 2021; 53: S218.

**Aims** We evaluated efficacy and safety of single-balloon enteroscopy-assisted ERCP (SBE-ERCP) as first line therapy in Roux-en-Y gastric bypass (RYGB) patients. In case of failure, second line endoscopic therapy based on EUS-transgastric ERCP (EDGE), percutaneous transhepatic cholangiography (PTC) or laparoscopy-assisted ERCP (LA-ERCP) was performed.

**Methods** A monocentric retrospective study of consecutive RYGB patients with biliopancreatic pathology were referred for SBE-ERCP or EDGE between June 2014 and November 2020. SBE-ERCP was considered first line technique because of its safety profile without transmural approach. Multistep EDGE was proposed when multiple and/or complex ERCP procedures were planned or when SBE-ERCP failed. LA-ERCP was proposed when SBE-ERCP failed in a patient who also needed cholecystectomy.

**Results** 61 RYGB patients (43 women; mean age 54±8 years) were included. Indications were biliary disease in 51, pancreatic disease in 7 and both in 3 patients. 57 patients underwent first line SBE-ERCP with a total of 71 SBE-ERCP procedures and 4 underwent first line EDGE. Average procedure time of SBE-ERCP was 87±22 min. Technical SBE-ERCP success rate was 56/71 (78.9%) procedures. Clinical SBE-ERCP success rate was 42/57 (73.7%) patients. Mild adverse events were self-limiting cholangitis, pancreatitis or abdominal pain in 8/71 (11.3%) procedures. There were no serious adverse events. Alternative endoscopic therapy (5 EDGE, 1 LA-ERCP, 2 combined PTC with redo SBE-ERCP) allowed additional successful

treatment of 8/15 (53.3%) patients after failed SBE-ERCP, and together with 3/4 (75.0%) first-line EDGE procedures, leading to an overall clinical success rate using endoscopic techniques of 53/61 (86.9%) patients.

**Conclusions** Thanks to its good technical and clinical efficacy and excellent safety profile, SBE-ERCP seems to be a good first line option to treat biliopancreatic pathology in RYGB patients. Alternative second line options are EDGE, PTC and LA-ERCP depending on the indication.

### eP374V TRANSDUODENAL EUS STAGING OF A COLONIC ADENOCARCINOMA

**Authors** [Togliani T<sup>1</sup>](#), [Pilati S<sup>1</sup>](#)

**Institute** 1 ASST Poma, Gastroenterology Unit, Mantova, Italy

**DOI** [10.1055/s-0041-1724865](https://doi.org/10.1055/s-0041-1724865)

**Citation** Togliani T, Pilati S. eP374V TRANSDUODENAL EUS STAGING OF A COLONIC ADENOCARCINOMA. *Endoscopy* 2021; 53: S218.

The PET-TC scan staging of an adenocarcinoma of the right colonic flexure suspected a duodenal infiltration. Upper GI endoscopy displayed an irregular duodenal ulceration, with unrevealing biopsies. To assess the relationship between the duodenum and the surrounding organs, an EUS was planned. EUS displayed a thickened duodenal wall in continuity with an hypoechoic 6 cm lesion containing air bubbles, that was attributable to the colonic tumor. The laparoscopic exploration confirmed the firm adhesion of the colon to the duodenum; a cecostomy and a gastro-jejunostomy were created. In this interesting case an upper EUS helped us diagnose a T4b intestinal tumor.

### eP375 THE ROLE OF ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE BIOPSY (EUS-FNB) FOR THE DIAGNOSIS OF GASTRIC LINITIS PLASTICA

**Authors** [Karagyozov P<sup>1</sup>](#), [Zhecheva I<sup>1</sup>](#), [Tishkov I<sup>1</sup>](#)

**Institute** 1 Acibadem City Clinic Tokuda Hospital, Interventional Gastroenterology, Sofia, Bulgaria

**DOI** [10.1055/s-0041-1724866](https://doi.org/10.1055/s-0041-1724866)

**Citation** Karagyozov P<sup>1</sup>, Zhecheva I, Tishkov I. eP375 THE ROLE OF ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE BIOPSY (EUS-FNB) FOR THE DIAGNOSIS OF GASTRIC LINITIS PLASTICA. *Endoscopy* 2021; 53: S218.

**Aims** Gastric Linitis plastica (GPL) is a diffuse type of carcinoma which accounts for 3–19% of gastric adenocarcinomas. It is characterised by a thickening and stiffening of the gastric wall. The condition is often difficult to be diagnosed endoscopically- the endoscopic appearance could be unremarkable and the mucosal biopsies are often negative for malignant cells due to cancer infiltrating the submucosa and proper muscle layer. The aim of this study was to assess the performance of EUS-FNB using 22G Franseen-tip needle for the diagnosis of gastric linitis plastica after negative histology, obtained during upper endoscopy.

**Methods** Data was collected retrospectively from January 2019 to October 2020. All the patients had diffuse or focal gastric wall thickening detected on abdominal ultrasound and/or CT-scan. They were referred for EUS-guided biopsy after failure of gastroscopy to establish tissue diagnosis. Patients underwent endoscopic ultrasound with a linear scope (Fujifilm EG-580UT) and fine needle biopsy using 22G Acquire needle (Boston Scientific Corp.).

**Results** Eight patients (4 men, 4 women) underwent EUS-guided biopsy of the gastric wall during the study period. Sufficient tissue for histologic diagnosis was obtained in 7 cases. In six of the patients we proved gastric adenocarcinoma. In one- gastric wall infiltration from serous papillary ovarian adenocarcinoma. In one of the patients EUS-FNB was negative, malignant cells were detected in the peritoneal fluid after diagnostic paracentesis. No complications were observed during the first 48 hours and after 30 days follow-up.

**Conclusions** It is well known that EUS is a valuable tool for both detecting and staging linitis plastica. Our study proves that EUS – FNB using 22G Franseen-tip needle is safe and highly effective technique for histologic diagnosis of GPL and we recommend it especially in cases when biopsies obtained during gastroscopy are negative.

## eP376 LINEAR EUS ACCURACY IN GASTRIC CANCER PREOPERATIVE STAGING: A RETROSPECTIVE MULTICENTRIC STUDY

**Authors** De Nucci G<sup>1</sup>, Impellizzeri G<sup>2</sup>, Gabbani T<sup>2</sup>, Soriani P<sup>2</sup>, Deiana S<sup>2</sup>, Ottaviani L<sup>2</sup>, Vavassori S<sup>2</sup>, Rainer J<sup>2</sup>, Bonura GF<sup>2</sup>, Curatolo A<sup>2</sup>, Frazzoni L<sup>3</sup>, Fuccio L<sup>3</sup>, Manes G<sup>1</sup>, Vecchi M<sup>4</sup>, Manno M<sup>2</sup>

**Institute** 1 ASST Rhodense, Gastroenterology and Digestive Endoscopy Unit, Garbagnate Milanese, Italy; 2 Azienda USL Modena, Gastroenterology and Digestive Endoscopy Unit, Carpi, Italy; 3 S. Orsola-Malpighi Hospital, Gastroenterology Unit, Department of Medical and Surgical Sciences, Bologna, Italy; 4 IRCCS Ca' Granda Ospedale Maggiore Policlinico, Gastroenterology and Digestive Endoscopy Unit, Milano, Italy

DOI 10.1055/s-0041-1724867

**Citation** De Nucci G, Impellizzeri G, Gabbani T et al. eP376 LINEAR EUS ACCURACY IN GASTRIC CANCER PREOPERATIVE STAGING: A RETROSPECTIVE MULTICENTRIC STUDY. *Endoscopy* 2021; 53: S219.

**Aims** Gastric cancer (GC) staging is the most reliable prognostic factor that affects therapeutic choices. Contrast enhanced computed tomography (CECT) and radial endoscopic ultrasound (R-EUS) are the most used staging tools. The accuracy of linear EUS (L-EUS) in this setting is still controversial.

Aim of this retrospective multicentric study was to determine L-EUS accuracy compared to CECT one regarding tumor depth and nodal status in patients with gastric cancer.

**Methods** One-hundred-ninety-one patients with GC, who underwent surgical resection between April 2017 and April 2020 in two Northern Italy hospitals, were considered. Preoperative staging was performed with L-EUS and CECT (according to TNM classification) and compared to histological analysis on surgical specimen.

### Results

Of 191 GC, 79 (41%) were localized in corpus, 65 (34%) in antrum, 32 (16%) in angulus, 12 (6%) in fundus, 2 (2%) in cardia and 1 (1%) in pylorus. Patients mean age was 66 years (range 38-91) and tumor mean size was 43 mm (range 10-80 mm). L-EUS overall diagnostic accuracy for depth of invasion was 100%, 60%, 74%, 80% for T1, T2, T3 and T4, respectively. L-EUS diagnostic accuracy in evaluating nodal status was 95% for N0 and 80% for N+, with an overall accuracy and sensitivity of 85% and 80%, respectively. CECT performance in T-staging was 78%, 55%, 45%, 10% for T1, T2, T3 and T4, respectively. Regarding N-staging, CECT diagnostic accuracy and sensitivity were 61% and 43%, respectively, both significantly lower than L-EUS.

**Conclusions** Our experience suggests that L-EUS is superior to CECT in both preoperative T and N GC staging. Furthermore, our data with L-EUS are also comparable to R-EUS ones reported in literature in this setting.

► Tab. 1

Diagnostic accuracy parameters in N staging. % (CI95%)	L-EUS	CECT
Accuracy	85% (80-90%)	61% (54-68%)
Sensitivity	80% (72-87%)	44% (35-53%)
Negative predictive value	73% (62-81%)	48% (39-56%)
Negative likelihood ratio	0.20 (0.14-0.29)	0.59 (0.50-0.70)

## eP377 CASE REPORT OF GASTRIC CANCER WITH FEATURES OF A SUB EPITHELIAL TUMOR AND THE USE OF ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION IN DIAGNOSIS

**Authors** Yep-Gamarra V<sup>1,2</sup>, Aldave A<sup>3</sup>, Calvo H<sup>3</sup>, Vasquez-Tirado G<sup>4</sup>, Salazar Tantalean VA<sup>5</sup>, Ananias-Mariscal F<sup>6</sup>, Mariños H<sup>1</sup>, Amaya-Vasquez N<sup>2</sup>, Concepcion Urteaga L<sup>3</sup>

**Institute** 1 Regional Hospital of Trujillo, Department of Gastroenterology, Trujillo, Peru; 2 Clinica Peruano Americana, Unit Advance Endoscopy, Trujillo, Peru; 3 National University of Trujillo, Department of Medicine, Trujillo, Peru; 4 Antenor Orrego Private University (UPAO), Trujillo, Peru; 5 National University of Trujillo, Department of Surgery, Trujillo, Peru; 6 National University of Trujillo, Department of Gastroenterology, Trujillo, Peru

DOI 10.1055/s-0041-1724868

**Citation** Yep-Gamarra V, Aldave A, Calvo H et al. eP377 CASE REPORT OF GASTRIC CANCER WITH FEATURES OF A SUB EPITHELIAL TUMOR AND THE USE OF ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION IN DIAGNOSIS. *Endoscopy* 2021; 53: S219.

**Aims** The endoscopic finding of gastric cancer shows a variable macroscopic appearance, generally as a protruding lesion. Its presentation similar to a sub-epithelial lesion is very rare and difficult to diagnose.

**Methods** We report a case of gastric cancer with the appearance of a subepithelial tumor, the diagnosis of which was achieved by Endoscopy Ultrasound (EUS).

**Results** A 35-year-old woman underwent a screening endoscopy. They found a 12 x 10 mm subepithelial lesion in the gastric antrum with a small apical ulcer. The biopsy showed gastritis. Contrast abdominal tomography showed no lymphadenopathy, Hemoglobin 14 mg/dl, creatinine: 0.8 mg/dl, glycemia: 86 mg/dl. She is referred for EUS, showing a slightly heterogeneous hyperechoic lesion that comes from the second layers with no evidence of adjacent lymphadenopathy, measuring 15 mm x 14 mm. The lesion does not invade the muscular layer. The appearance was suggestive of a gastric carcinoid tumor or GIST. The FNA (fine needle aspiration) showed: atypical cells pattern seal ring suggestive of little differentiated carcinoma. The subepithelial aspect of gastric cancer is very rare, it occurs in 0.1% to 0.62%. There are few reports worldwide. EUS provides us with diagnostic information, malignant potential and depth of the lesion. Heterogeneous, hypoechoic lesions are evidenced, with irregular margins, areas of focal thickening, irregularity, or disruption of layers, and originate from any of the layers. The FNA obtains samples from deep areas that it is not possible to achieve with endoscopic biopsy and have an accuracy of approximately 80%.

**Conclusions** The evaluation of a subepithelial lesion is very difficult, adenocarcinoma must be considered in the differential diagnosis. The EUS findings guide us in the diagnosis, the FNA is important in order to increase yield diagnostic.

## eP378 DIAGNOSTIC YIELD OF EUS FNA IN DIGESTIVE TRACT MASSES

**Authors** El Moutaoukil N<sup>1</sup>, Taiymi A<sup>1</sup>, Oualgouh M<sup>1</sup>, Rais K<sup>2</sup>, Baddi FZ<sup>3</sup>, Bennani A<sup>3</sup>, El Mekkaoui A<sup>1</sup>, Kharrasse G<sup>1</sup>, Zazour A<sup>1</sup>, Khannoussi W<sup>1</sup>, Ismaili MZ<sup>1</sup>

**Institute** 1 Digestive Disease Research Laboratory, Medical School, Mohamed First University, Hepato Gastroenterology Department, Mohamed VI University Hospital, Oujda, Morocco; 2 Medical School, Mohamed First University, Hepato Gastroenterology Department, Mohamed VI University Hospital, Oujda, Morocco; 3 Medical School, Mohamed First University, Pathology Department, Mohamed VI University Hospital, Oujda, Morocco

DOI 10.1055/s-0041-1724869

**Citation** El Moutaoukil N, Taiymi A, Oualgouh M et al. eP378 DIAGNOSTIC YIELD OF EUS FNA IN DIGESTIVE TRACT MASSES. *Endoscopy* 2021; 53: S219.



**Aims** To evaluate the yield of ultrasound endoscopic guided FNA in the diagnosis of digestive tract masses.

**Methods** A retrospective descriptive study, including all patients who had EUS FNA for digestive masses. Data regarding the results of EUS guided FNA were analysed by SPSS software. The size of needle was chosen considering the location and the suspected nature of the mass.

**Results** A total of 83 patients were included and 104 EUS FNA. The mean age was 59.5 +/- 13.3 with a male predominance (Sex ratio 1.15). Main indications of EUS FNA were: pancreatic masses in 70%, submucosal tumors in 11.5% (oesophagus 2 pts, stomach 8 pts, and rectum 2 pts), peritoneal or retroperitoneal masses 11%, lymph nodes in 7.7%. Mean lesion size was 4.2 cm. Needle size was 22G FNA in 66%, 19G 30%, and pro core 20G 4%. The mean pass number was 3 for each FNA. The technique frequently used was slow pull followed by 20cc aspiration in 62.5%. FNA was conclusive in 85,5% of patients. Pathological results were: pancreatic adenocarcinoma in 56,3%; solid and pseudo-papillary pancreatic tumor in 2,8%, pancreatic lymphoma in 1,4%, pancreatic metastasis of a lung cancer in 1,4%, pancreatic adenosquamous carcinoma in 1,4%, chronic pancreatitis in 1,4%, paraganglioma in 1,4%, pancreatic mucinous cystadenoma in 1,4%, and a pancreatic pseudocyst in 1,4%. Rectal GIST in 2,8%, gastric GIST in 1,4%, gastric adenocarcinoma in 4,2% and 1,4% cardiac leiomyoma, lymph nodes metastasis in 4,2%, lymph nodes tuberculosis in 2,8%.

One complication was noted with intra cystic haemorrhage during the procedure resolved spontaneously.

**Conclusions** The yield of EUS FNA in the diagnosis of digestive masses in our experience was 85,5%.

Main indication was pancreatic masses.

It was a safe procedure with 1 case presenting intra cystic haemorrhage resolved spontaneously.

### eP379V MULTIMODAL APPROACH FOR ESOPHAGEAL DUPLICATION CYST DIAGNOSIS

**Authors** Taleb A<sup>1</sup>, Roshdy N<sup>2</sup>, Montasser A<sup>3</sup>, Madbouly M<sup>4</sup>, Ibrahim M<sup>5,2</sup>

**Institute** 1 New Giza University, Cairo, Egypt; 2 ROEYA Gastroenterology and Endoscopy Center, Cairo, Egypt; 3 Theodor Bilharz Research Institute, Pathology, Cairo, Egypt; 4 Theodor Bilharz Research Institute, Radio Diagnosis, Cairo, Egypt; 5 Theodor Bilharz Research Institute, Gastroenterology and Hepatology, Cairo, Egypt

**DOI** 10.1055/s-0041-1724870

**Citation** Taleb A, Roshdy N, Montasser A et al. eP379V MULTIMODAL APPROACH FOR ESOPHAGEAL DUPLICATION CYST DIAGNOSIS. *Endoscopy* 2021; 53: S220.

Esophageal duplications cysts are rare congenital malformations that result in a cystic lesion in the esophagus. While most patients are asymptomatic, dysphagia may occur due to compression of the esophagus. On endoscopy, these lesions may be indistinguishable from more ominous diagnoses such as lipoma, leiomyoma and gastrointestinal stromal tumor (GIST). We report a case of successful detection of an esophageal duplication cyst using a range of modalities including: upper endoscopy, CT, endoscopic ultrasound and fine needle aspiration.

### eP380 ENDOSCOPIC ULTRASOUND VS. COMPUTED TOMOGRAPHY FOR GASTRIC CANCER STAGING: A NETWORK META-ANALYSIS

**Authors** BS Ungureanu<sup>1</sup>, Sacerdotianu VM<sup>1</sup>, Turcu-Stiolică A<sup>2</sup>, Cazacu IM<sup>3</sup>, Saftoiu A<sup>1</sup>

**Institute** 1 University of Medicine and Pharmacy of Craiova Romania, Gastroenterology, Craiova, Romania; 2 University of Medicine and Pharmacy of Craiova Romania, Pharmacoeconomics, Craiova, Romania; 3 University of Medicine and Pharmacy of Craiova Romania, Oncology, Craiova, Romania

**DOI** 10.1055/s-0041-1724871

**Citation** Ungureanu BS, Sacerdotianu VM, Turcu-Stiolică A et al. eP380 ENDOSCOPIC ULTRASOUND VS. COMPUTED TOMOGRAPHY FOR GASTRIC CANCER STAGING: A NETWORK META-ANALYSIS. *Endoscopy* 2021; 53: S220.

**Aims** We aimed to perform a network meta-analysis for gastric cancer clinical stage diagnostic tests, by comparing the diagnostic accuracy of EUS vs. multi-detector CT (MDCT) and EUS vs. EUS+MDCT.

**Methods** We performed a thorough literature search for studies reporting the accuracy of EUS and MDCT scans before September 15<sup>th</sup> 2020. We plotted study estimates of pooled sensitivity and specificity on forest plots and summary receiver operating characteristic space to explore between-study variation in the performance of EUS, MDCT and EUS+MDCT for all T, N, M stages when data were available, using a bivariate random-effects model and a Bayesian approach.

**Results** We included twelve studies with 1859 patients. The sensitivity value for EUS was significantly higher than for MDCT ( $p=0.04$ ) after using a random-effects model for a high heterogeneity of the included studies ( $\chi^2=287.01$ ,  $I^2=98\%$ ,  $p<0.0001$ ). The AUC for EUS (0.903) was bigger than for MDCT (0.774) and the summary ROC curve for T1 invasion indicated a better diagnostic performance of EUS vs. MDCT. For the N0vsN1+ the sensitivity for EUS was significantly higher than for MDCT ( $p=0.02$ ) while the specificity value for MDCT was significantly higher than for EUS ( $p=0.02$ ). The M stage showed the specificity value for MDCT was significantly higher than for EUS ( $p<0.00001$ ). EUS was superior to MDCT in preoperative T1 and N staging. When comparing EUS vs EUS+MDCT for T1 both sensitivity and specificity were not relevant. No significant differences were observed in T2-T4. EUS is more reliable in predicting the presence of lymph nodes with a sensitivity of 84%, whereas MDCT showed 75%.

**Conclusions** EUS for T1 stage which can make the difference from ESD to multimodal therapy in gastric cancer patients. Even though EUS helped differentiate between the presence of invaded nodules, N stages should be carefully assessed by both methods since there is no sufficient data.

### eP381V A CRATER IN THE STOMACH?

**Authors** Gonzalez Haba Ruiz M<sup>1,2</sup>, Teijo Quintans A<sup>3</sup>, Alonso Casado O<sup>4</sup>, Garcia Casas M<sup>1</sup>, Calleja Panero JL<sup>1,2</sup>

**Institute** 1 MD Anderson Cancer Center, Gastroenterology, Madrid, Spain; 2 Hospital Universitario Puerta de Hierro Majadahonda, Gastroenterology, Madrid, Spain; 3 MD Anderson Cancer Center, Pathology, Madrid, Spain; 4 MD Anderson Cancer Center, Surgery, Madrid, Spain

**DOI** 10.1055/s-0041-1724872

**Citation** Gonzalez Haba Ruiz M, Teijo Quintans A, Alonso Casado O et al. eP381V A CRATER IN THE STOMACH? *Endoscopy* 2021; 53: S220.

A 60 years old patient underwent upper endoscopy for dyspepsia, in which a large depression was seen in the distal body, lined with normal appearing mucosa.

EUS showed an underlying large (60x50mm) hypoechoic lesion, heterogeneous, with inner calcifications. It seemed to pull down the gastric wall, causing this crater-like appearance. These features suggested a gastrointestinal stromal tumour (GIST). EUS guided biopsy confirmed the diagnosis.

According to current guidelines, surgical removal (partial gastrectomy) was performed.

We hereby report a case a large exocytic GIST appearing endoscopically as a big crater in the gastric wall, simulating a traction type diverticulum

### eP382 PROGRESSION OF CYSTIC PANCREATIC NEOPLASMS – A UNI-CENTER COHORT STUDY OVER 6 YEARS

**Authors** Kaess M<sup>1</sup>, Amisshah D<sup>1</sup>, Schorr W<sup>1</sup>, Schedel J<sup>1</sup>, Pech O<sup>1</sup>

**Institute** 1 Krankenhaus der Barmherzigen Brüder, Department of Endoscopy and Interventional Gastroenterology, Regensburg, Germany

**DOI** 10.1055/s-0041-1724873

**Citation** Kaess M, Amisshah D, Schorr W et al. eP382 PROGRESSION OF CYSTIC

PANCREATIC NEOPLASMS – A UNI-CENTER COHORT STUDY OVER 6 YEAR.  
Endoscopy 2021; 53: S220.

**Aims** The purpose of this study was to evaluate the malignant potential of pancreatic cystic lesions and the precision of endosonographic diagnoses including the early detection of cysts with malignant potential.

**Methods** All patients referred between January 2012 and December 2018 to our tertiary referral center for EUS of pancreatic cystic lesions were included in this retrospective analysis. EUS was performed by 3 experienced gastroenterologists with Hitachi Preirus and Pentax echoendoscopes.

**Results** 455 patients with pancreatic cystic lesions were included in a database. 223 patients had cystic pancreatic neoplasms, the median age was 69.0 years. EUS diagnosis was 138 BD-IPMN, 16 MD-IPMN, 46 serous cystic neoplasia and 6 mucinous cystic neoplasia. Progression of size was rare. In 52 BD-IPMN with more than one examination only 6 lesions showed increase of  $\geq$  2mm. In 29 cases, a histopathological diagnosis was available after surgical resection. 25.0% of the patients who had surgical resection had high-grade dysplasia or cancer. The pre-operative EUS diagnosis was correct in 28.6%. The correct preoperative differentiation between mucinous and non-mucinous lesions was possible in 68.4%. The European Consensus Guidelines' list of risk criteria showed to be a very sensitive (100%) and specific (93.3%) predictor of malignancy. No cystic lesion without an indication for resection showed malignant transformation during the median observation period of 13.5 months (range 3 - 41).

**Conclusions** Pancreatic cystic lesions showed a very low rate of progression or malignant transformation during the first 5 years of observation. EUS alone shows a moderate accuracy to differentiate between serous and mucinous cystic neoplasia. Our results support surveillance for patients who are fit for surgery following the European Consensus Guidelines.

### eP383 COMPARISON OF HISTOLOGICAL QUALITY BETWEEN 22-GAUGE FINE NEEDLE ASPIRATION AND FINE NEEDLE BIOPSY OF SOLID PANCREATIC LESIONS

**Authors** Lambin T<sup>1</sup>, Karleskind O<sup>2</sup>, Leteurtre E<sup>2</sup>, Bongiovanni A<sup>3</sup>, Tardivel M<sup>3</sup>, Renaud F<sup>2</sup>, Branche J<sup>1</sup>, Gérard R<sup>1</sup>

**Institute** 1 Claude Huriez Hospital, University of Lille, Department of Gastroenterology, Lille, France; 2 Institute of Pathology, University Hospital of Lille, Lille, France; 3 University of Lille, Lille, France

**DOI** 10.1055/s-0041-1724874

**Citation** Lambin T, Karleskind O, Leteurtre E et al. eP383 COMPARISON OF HISTOLOGICAL QUALITY BETWEEN 22-GAUGE FINE NEEDLE ASPIRATION AND FINE NEEDLE BIOPSY OF SOLID PANCREATIC LESIONS. Endoscopy 2021; 53: S221.

**Aims** Regarding pancreatic lesions, most studies comparing EUS-FNA (endoscopic ultrasound guided fine needle aspiration) and EUS-FNB (fine needle biopsy) have shown no difference in term of diagnostic accuracy. Few studies have assessed the quality of histological samples obtained with each needles. The aim of the present study was to compare the histological quality of samples obtained with EUS-FNA and EUS-FNB for pancreatic solid lesion.

**Methods** We performed a retrospective study in a single tertiary center including all consecutive patients who underwent EUS-guided sampling procedure of a pancreatic lesion from January 2017 to October 2018, with either a 22G FNA needle or a 22G FNB needle. For each sample, cellularity was determined and all core tissues were manually delineated for area measurement.

**Results** Eighty-eight patients were included. Among them 40 (45.5%) underwent EUS-FNA and 48 (54.5%) underwent EUS-FNB. A core tissue was obtained in 15/40 (37.5%) of the cases in the EUS-FNA group versus 42/48 (87.5%) in the EUS-FNB group ( $p < 0.005$ ). The mean area of the total core tissue obtained was 0.4 +/- 0.7 mm<sup>2</sup> the EUS-FNA group and 2.8 +/- 3.3 mm<sup>2</sup> in the EUS-FNB group ( $p = 0.005$ ). EUS-FNA samples had a mean cellularity of 40740.4 cells +/- 73243.0 versus 25987.8 +/- 45861.7 for EUS-FNB samples without statistical significance ( $p = 0.3$ ). In the EUS-FNA group, 4 (10.0%) cases of immediate minor hemorrhages were observed. No adverse event was observed within 30

days after the endoscopic procedure. In the EUS FNB group, no adverse event was observed during the procedure or within 30 days after the endoscopic procedure.

**Conclusions** FNB allowed to obtain a core tissue in near 90% of the cases and the mean area of the core tissues obtained was 7-fold bigger than those obtained with FNA. FNB should be the needle of choice to obtain a large amount of pancreatic tissue.

### eP384 MACROSCOPIC ON-SITE EVALUATION (MOSE) OF ACQUIRED SPECIMENS OF SOLID LESIONS DURING EUS-FNB: A MULTICENTER STUDY AND A COMPARISON BETWEEN NEEDLES GAUGE

**Authors** Mangiavillano B<sup>1</sup>, Frazzoni L<sup>2</sup>, Togliani T<sup>3</sup>, Fabbri C<sup>4</sup>, Tarantino I<sup>5</sup>, De Luca L<sup>6</sup>, Staiano T<sup>7</sup>, Binda C<sup>4</sup>, Signoretti M<sup>4</sup>, Eusebi LH<sup>2</sup>, Lamonaca L<sup>1</sup>, Auriemma F<sup>1</sup>, Paduano D<sup>1</sup>, Di Leo M<sup>8</sup>, Bianchetti M<sup>1</sup>, Carrara S<sup>8</sup>, Fuccio L<sup>2</sup>, Repici A<sup>8</sup>

**Institute** 1 Humanitas Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy; 2 S. Orsola-Malpighi Hospital, Medical and Surgical Sciences, Bologna, Italy; 3 ASST Poma Hospital, Digestive Endoscopy Unit, Mantova, Italy; 4 Morgagni-Pietrantoni Hospital, Digestive Endoscopy Unit, Forlì-Cesena, Italy; 5 Mediterranean Institute for Transplantation and Advanced Specialized Therapies (IRCCS - ISMETT), Endoscopy Service, Palermo, Italy; 6 Ospedali Riuniti Marche Nord, Gastroenterology and Digestive Endoscopy Unit, Pesaro, Italy; 7 Candiolo Cancer Institute IRCCS, Digestive Endoscopy Unit, Candiolo, Italy; 8 Humanitas Clinical and Research Center, Digestive Endoscopy Unit, Rozzano, Italy

**DOI** 10.1055/s-0041-1724875

**Citation** Mangiavillano B, Frazzoni L, Togliani T et al. eP384 MACROSCOPIC ON-SITE EVALUATION (MOSE) OF ACQUIRED SPECIMENS OF SOLID LESIONS DURING EUS-FNB: A MULTICENTER STUDY AND A COMPARISON BETWEEN NEEDLES GAUGE. Endoscopy 2021; 53: S221.

**Aims** The standard methods to obtain sampling during endoscopic ultrasonography (EUS) is the fine needle aspiration (FNA) which could be affected by the presence of cytopathologist in endoscopy room (ROSE). With the introduction of fine needle biopsy (FNB), the macroscopic on-site evaluation (MOSE) of the acquired specimen was proposed. Few studies are published about this issue and in all, except one, a 19G needle was used, influencing the accuracy. The primary aim of our study was to evaluate the yield and accuracy of MOSE with different needles' gauge and the secondary aim was to identify factors influencing the yield of MOSE.

**Methods** Data from patients undergone EUS-FNB, for solid lesions, with MOSE evaluation of the specimen were collected in 6 endoscopic referral centers, for a total of 381 enrolled patients (146 F and 235 M). A multivariable analysis was run to identify variables independently related to MOSE diagnostic yield.

**Results** 381 samples were judged to be macroscopically adequate by the endosonographer. Needles size were 20G (41%), 22G (46%), and 25G (13%). The median number of needle passes was 2 (IQR 2-3). The diagnostic yield of MOSE was of 89% (CI 86-92%). At multivariable logistic regression analysis, variables independently associated with MOSE diagnostic yield were larger needle diameter (20G vs. 25G, OR 11.52, CI 3.45-38.46; 22G vs. 25G, OR 6.01, CI 2.36-15.36) and  $\geq 3$  needle passes (OR 3.41, CI 1.39-8.35).

**Conclusions** MOSE showed high diagnostic yield and accuracy in a large sample. Its yield was further increased if performed with a large caliber FNB needle and more than two passes.

## eP385 PANCREATIC SURVEILLANCE PROGRAM IN HIGH-RISK PATIENTS – THE EXPERIENCE FROM A TERTIARY CENTRE

**Authors** Pinto C<sup>1</sup>, Sá I<sup>1</sup>, Pita I<sup>1</sup>, Bastos P<sup>1</sup>, Dinis-Ribeiro M<sup>1</sup>, Brandão C<sup>1</sup>  
**Institute** 1 Portuguese Oncology Institute of Porto, Gastroenterology, Porto, Portugal  
**DOI** 10.1055/s-0041-1724876

**Citation** Pinto C, Sá I, Pita I et al. eP385 PANCREATIC SURVEILLANCE PROGRAM IN HIGH-RISK PATIENTS – THE EXPERIENCE FROM A TERTIARY CENTRE. *Endoscopy* 2021; 53: S222.

**Aims** Pancreatic cancer is a highly lethal malignancy. The most effective way to improve survival is by early detection and treatment of precursor lesions. Individuals with family history or genetic susceptibility have an increased risk and pancreatic screening is now recommended. Our aim was to assess the implementation of guidelines and its effectiveness.

**Methods** Single-centre retrospective cohort of all patients under pancreatic surveillance at our Gastrointestinal Familial Cancer Risk Clinic from 2012 to 2020 (n = 804). We determined the allocation to screening (through endoscopic ultrasound (EUS) or magnetic resonance imaging (MRI)), surveillance according to suggested intervals, number of precursor lesions detected and outcomes.

**Results** 3.7% of patients (n = 30) fulfilled the criteria for pancreatic surveillance: mutation in ATM (n = 2), PALB2 (n = 3), CDKN2A (n = 4), STK11 (n = 5), MSH2 (n = 13), MSH6 (n = 2) and PMS2 (n = 1) genes. 86.7% of patients (n = 26) had familial history of pancreatic cancer (first-degree relative). 5 of them did not meet the age criteria to initiate image surveillance so they underwent clinical evaluation annually.

From patients who had indication to image surveillance (n = 25), 84% (n = 21) were submitted to at least one image exam - EUS (n = 18) and MRI (n = 6). Only 16 patients followed recommended surveillance timings. There were no malignant findings throughout surveillance.

3 patients (10%) were diagnosed with pancreatic cancer and all of them died in a 2-year period. None of them were under an image surveillance program: 2 diagnosed in 2012 – without indication for screening according to the recommendations at the time – and one without knowledge of familial history until diagnosis. 2 of them presented with abnormal fasting glucose levels previously to diagnosis.

**Conclusions** Although only a small percentage of patients have increased susceptibility to pancreatic cancer, it is important to select and include them in surveillance programs given the high risk of malignancy with short-life expectancy.

## eP386 CHANGES OF CHRONIC PANCREATITIS ON ENDOSCOPIC ULTRASOUND IN PATIENTS EVALUATED FOR NON-PANCREATIC INDICATIONS

**Authors** Sundaram S<sup>1</sup>, Irtaza M<sup>1</sup>, Rao PK<sup>1</sup>, Patra BR<sup>1</sup>, Kale A<sup>1</sup>, Shukla A<sup>1</sup>  
**Institute** 1 Seth GS Medical College & King Edward VII Memorial Hospital, Department of Gastroenterology, Mumbai, India  
**DOI** 10.1055/s-0041-1724877

**Citation** Sundaram S, Irtaza M, Rao PK et al. eP386 CHANGES OF CHRONIC PANCREATITIS ON ENDOSCOPIC ULTRASOUND IN PATIENTS EVALUATED FOR NON-PANCREATIC INDICATIONS. *Endoscopy* 2021; 53: S222.

**Aims** Changes of chronic pancreatitis (CP) on endoscopic ultrasound (EUS) can be defined using the Standard criteria or the Rosemont criteria. Changes on endoscopic ultrasound may also be found in individuals evaluated for non-pancreatic indications. We aim to study the prevalence and factors associated with these CP like changes on EUS.

**Methods** Patients referred for EUS with non-pancreatic indications to the endoscopy unit at our tertiary care centre in Western India were prospectively evaluated from August 2019 for changes associated with chronic pancreatitis.

Demographic details, history of alcoholism, smoking, family history and symptoms were noted. Outcome measures were presence of any change associated with CP on EUS and factors associated with these changes.

**Results** 435 patients underwent EUS in the study period. Of these, 75 patients were included in the analysis (51% male, mean age 51.6 years). 30.66% (23/75) had at least one change associated with chronic pancreatitis seen on endoscopic ultrasound. Age, Sex, history of alcoholism, smoking and presence of diabetes were not significantly associated with presence of these factors. Most common parenchymal abnormality included hyperechoic foci (22.7%), followed by hyperechoic strands (21.3%). Ductal abnormality commonly seen was hyperechoic duct walls (6.7%) followed by dilated duct and irregular duct contour (2.7%). Five patients (6.7%) had standard EUS score of more than 3, fulfilling criteria to consider as early chronic pancreatitis. No patients had any major A or major B criteria on EUS as per the Rosemont criteria. There was no correlation of age, sex, diabetes, history of alcoholism or smoking with any particular parenchymal or ductal change.

**Conclusions** 30.6% of patients who undergo EUS evaluation for non-pancreatic indications will have at least one change associated with chronic pancreatitis, with no association with age, sex, diabetes, alcohol or smoking. Almost 7% patients fit the criteria to label as early chronic pancreatitis when evaluated.

## eP387 CONTRAST-ENHANCED ENDOSCOPIC ULTRASOUND IN THE DIAGNOSIS OF PANCREATIC METASTASIS

**Authors** Teodorescu C<sup>1</sup>, Pojoga C<sup>1,2</sup>, Rusu I<sup>3</sup>, Bolboacă SD<sup>4</sup>, Seicean A<sup>1</sup>  
**Institute** 1 Iuliu Hațieganu University of Medicine and Pharmacy, Department of Gastroenterology, Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca, Romania; 2 Babeş-Bolyai University, Department of Clinical Psychology and Psychotherapy, International Institute for Advanced Study of Psychotherapy and Applied Mental Health, Cluj-Napoca, Romania; 3 Iuliu Hațieganu University of Medicine and Pharmacy, Department of Pathology, Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca, Romania; 4 Iuliu Hațieganu University of Medicine and Pharmacy, Department of Medical Informatics and Biostatistics, Cluj-Napoca, Romania  
**DOI** 10.1055/s-0041-1724878

**Citation** Teodorescu C, Pojoga C, Rusu I et al. eP387 CONTRAST-ENHANCED ENDOSCOPIC ULTRASOUND IN THE DIAGNOSIS OF PANCREATIC METASTASIS. *Endoscopy* 2021; 53: S222.

**Aims** Less than 5% of the pancreatic tumors represent a metastasis. It is still difficult to distinguish pancreatic metastasis from a primary pancreatic tumor only by echoendoscopic (EUS) appearance. The vascularity pattern assessed during the contrast-enhanced endoscopic ultrasound (CEUS) has been rarely described.

**Aim** To assess the additional role of CEUS over EUS morphology in diagnosing pancreatic metastases.

**Methods** We retrospectively included the patients with a diagnosis of pancreatic metastasis based on documented oncologic disease, EUS morphology with or without CEUS, in a tertiary medical center between 1<sup>st</sup> of January 2012 and 31<sup>st</sup> of October 2020. The final diagnosis was based on EUS-FNA and histopathologic results.

**Results** There were included 24 patients with hypoechoic masses, most of them localized in the pancreatic head (n = 10; 39%). The origin of malignancy was lung and kidney (7 cases each), followed by colon, skin, and sarcoma (2 patients each), and breast, stomach, ovary, and liver (1 patient each). CEUS was done in 62% of cases (n = 15), and the arterial hyperenhancement with rapid washout was noticed in 10 of these tumors, originating from kidney (n = 5), lung (n = 3), liver (n = 1) or skin (n = 1). This did not add information over the Doppler assessment, although for the renal metastases the initial peripheral hyperenhancement was noted in four of the cases. The other five patients with homogenous arterial hypoenhancement at CEUS, originating from colon, breast, or ovary, but also the lung and the skin, had no particular pattern in helping their discrimination from pancreatic adenocarcinoma.

**Conclusions** EUS brings an important contribution to diagnosing pancreatic metastasis, with heterogeneous characteristics that can not differentiate their origin. The CEUS aspect of metastasis is also heterogeneous and without specific features for lesions with the same origin. EUS-FNA remains compulsory for obtaining the diagnosis, while CEUS does not add supplemental value to EUS morphology assessment.

### eP388 EUS VERSUS MRCP FOR PATIENTS WITH INTERMEDIATE LIKELIHOOD OF CHOLEDOCHOLITHIASIS: A RANDOMIZED CONTROLLED TRIAL

**Authors** Jagtap N<sup>1</sup>, Kumar JK<sup>1</sup>, Lakhtakia S<sup>1</sup>, Kalapala R<sup>1</sup>, Memon SF<sup>1</sup>, Ramchandani M<sup>1</sup>, Basha J<sup>1</sup>, Tandan M<sup>1</sup>, Gupta R<sup>1</sup>, Nabi Z<sup>1</sup>, Chavan R<sup>1</sup>, Yerlagadda R<sup>1</sup>, DN Reddy<sup>1</sup>

**Institute 1** Asian Institute of Gastroenterology, Medical Gastroenterology, Hyderabad, India

**DOI** 10.1055/s-0041-1724879

**Citation** Jagtap N, Kumar JK, Lakhtakia S et al. eP388 EUS VERSUS MRCP FOR PATIENTS WITH INTERMEDIATE LIKELIHOOD OF CHOLEDOCHOLITHIASIS: A RANDOMIZED CONTROLLED TRIAL. *Endoscopy* 2021; 53: S223.

**Aims** In patients with an intermediate likelihood group of choledocholithiasis, ESGE guidelines recommend either EUS or MRCP to diagnose choledocholithiasis. There is no randomized control trial conducted to compare EUS and MRCP for diagnosing choledocholithiasis in these patients. We aimed to compare EUS and MRCP for the diagnosis of choledocholithiasis in patients with the intermediate likelihood of choledocholithiasis.

**Methods** Patients with suspected choledocholithiasis satisfying ESGE risk stratification of intermediate likelihood were screened for this single-center randomized controlled study between November 2019 to May 2020. Patients with previous pancreatobiliary and gastric surgery, acute pancreatitis, biliary stricture or malformations, underlying liver diseases, previous ERCP were excluded. The enrolled patients were randomized to either EUS or MRCP. ERCP or 3 months follow up considered as a standard reference. The diagnostic performance of EUS and MRCP was compared (NCT04173624).

**Results** Of 266 patients screened, 224 patients (mean age 46.77(14.57), 49.11% female) were enrolled. The overall prevalence of choledocholithiasis was 49.55% (111/224). The sensitivity of EUS and MRCP were 95.65% (95%CI 85.16% - 99.47%) and 92.31% (95% CI 82.95% - 97.46%) respectively and specificity of EUS and MRCP were 98.48% (95% CI 91.84% to 99.96%) and 95.74% (95% CI 85.46% to 99.48%) respectively. There was no significant difference in sensitivity (p 0.697) and specificity (p 0.569) between EUS and MRCP.

**Conclusions** The sensitivity and specificity of both EUS and MRCP are comparable for detecting choledocholithiasis in the intermediate-risk group of choledocholithiasis and the choice of a test should be based on local expertise, availability of resources, and patient preference.

Parameter	Sensitivity	Specificity	Positive predictive value	Negative Predictive Value	Accuracy
EUS	95.65 (85.16 - 99.47)	98.48 (91.84 - 99.96)	97.78 (86.27 - 99.68)	97.01 (89.34 - 99.21)	97.32 (92.37 - 99.44)
MRCP	92.31 (82.95 - 97.46)	95.74 (85.46 - 99.48)	96.77 (88.53 - 99.15)	90.00 (79.46 - 95.44)	93.75 (87.55 - 97.45)

### eP389V IPMN PRESENTING AS A PANCREATIC MASS

**Authors** Rais K<sup>1</sup>, Tayimi A<sup>1</sup>, El Moutaoukil N<sup>1</sup>, El mekkaoui A<sup>1</sup>, Kharasse G<sup>1</sup>, Zazour A<sup>1</sup>, Khannoussi W<sup>1</sup>, Ismaili MZ<sup>1</sup>

**Institute 1** Digestive Disease Research Laboratory, Medical School, Mohammed 1st University, Hepato Gastroenterology Department, Mohammed VI University Hospital Center, Oujda, Morocco

**DOI** 10.1055/s-0041-1724880

**Citation** Rais K, Tayimi A, El Moutaoukil N et al. eP389V IPMN PRESENTING AS A PANCREATIC MASS. *Endoscopy* 2021; 53: S223.

72yo woman, presented with epigastric pain and massive weight loss in the last 2 years. Liver tests and CA 19-9 were normal. she was referred with CT scan showing cephalic pancreatic mass. MRCP and EUS found dilatation of MPD up of 26mm with heterogeneous content. EUS showed dilatation of the MPD without thickening of the wall, neither doppler signal or calcifications. The diagnosis of MD IPMN was established. Duodenoscopy confirmed the diagnosis showing “fish mouth” aspect. Patient was not fit for surgery. Management was based on nutritional support, pancreatic enzyme supplementation and pain treatment. Surveillance was accepted by the patient.

### eP390 COMBINED USE OF ENDOSCOPIC ULTRASOUND (EUS) AND ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) FOR EVALUATION OF OBSTRUCTIVE JAUNDICE AND DISTAL BILIARY STRICTURES

**Authors** Bota S<sup>1</sup>, Razpotnik M<sup>1</sup>, Essler G<sup>1</sup>, Weber-Eibel J<sup>1</sup>, Peck-Radosavljevic M<sup>1</sup>

**Institute 1** Klinikum Klagenfurt am Wörthersee, Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klagenfurt, Austria

**DOI** 10.1055/s-0041-1724881

**Citation** Bota S, Razpotnik M, Essler G et al. eP390 COMBINED USE OF ENDOSCOPIC ULTRASOUND (EUS) AND ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) FOR EVALUATION OF OBSTRUCTIVE JAUNDICE AND DISTAL BILIARY STRICTURES. *Endoscopy* 2021; 53: S223.

**Aims** To assess the accuracy of EUS and ERCP combined and compared with radiologic imaging (CT, MRT/MRCP) in patients with obstructive jaundice and distal biliary strictures.

**Methods** Our retrospective study included all patients with painless jaundice, who received EUS with fine-needle aspiration (FNA), and ERCP with brush cytology or/and biliary duct biopsy between 01/2017-09/2020. Before the procedure, at least one radiological examination (CT, MRT/MRCP) was performed. Positive cyto-/histopathology was defined as the finding of at least atypical cells with dysplasia. Final diagnosis was established through a combination of histopathology, surgery, radiological findings, autopsy and clinical follow-up.

**Results** We identified 57 patients (mean age 72.1±12.1 years, 57.8% males) with painless obstructive jaundice evaluated by both EUS and ERCP. In 23/57 cases (40.3%), both investigations were performed on the same day. Overall 44/57 (77.2%) cases presented malignancy. The final diagnosis was: pancreatic adenocarcinoma-35(61.4%), cholangiocarcinoma-7(12.3%), chronic pancreatitis-7(12.3%), inflammatory benign biliary strictures-6(10.6%), neuroendocrine pancreatic tumor-1(1.7%), and sarcoma -1(1.7%). EUS guided sampling was performed more often than ERCP(86.6% vs. 49.1%), and tended to show better accuracy (80.8% vs.71.4%,p=40). With the combination of EUS and ERCP 51/57 (89.4%) cases were correctly diagnosed. The accuracy of combined use of EUS and ERCP increased with the experience of endoscopists: 73.6% between 01/2017-12/2018 vs.97.3% between 01/2019-10/2020,p=0.03. We did not observed sedation related adverse events in our cohort of patients, even if the both investigations were performed in the same day. In 7/57(12.2%) of cases only EUS could detect the tumor (while CT and/or MRT were negative), while not a single case



was detected with radiologic imaging (CT, MRT) but would have been missed on EUS.

**Conclusions** The combination of EUS and ERCP in diagnostic work-up of patients with painless obstructive jaundice is useful and more accurate to exclude malignancy in distal biliary stenosis compared to imaging with CT or MRT/MRCP.

### eP391 LONG-TERM MALIGNANCY IN SMALL PANCREATIC CYSTIC LESIONS WITHOUT WORRISOME FEATURES OR HIGH STIGMATA

**Authors** Lindo Ricce M<sup>1</sup>, Guardiola-Arévalo A<sup>2</sup>, Repiso Ortega A<sup>1</sup>, Gómez-Rodríguez R<sup>1</sup>

**Institute** 1 Hospital Virgen De La Salud, Gastroenterology, Toledo, Spain; 2 Hospital Universitario de Fuenlabrada, Gastroenterology, Madrid, Spain

DOI 10.1055/s-0041-1724882

**Citation** Lindo Ricce M, Guardiola-Arévalo A, Repiso Ortega A et al. eP391 LONG-TERM MALIGNANCY IN SMALL PANCREATIC CYSTIC LESIONS WITHOUT WORRISOME FEATURES OR HIGH STIGMATA. *Endoscopy* 2021; 53: S224.

**Aims** The malignancy risk of small pancreatic cystic lesions (PCLs) without worrisome features or high-risk stigmata remains unclear for that reason the aim of this study is to elucidate their natural history.

**Methods** We conducted a retrospective cohort study of 71 patients. We enroll all the patients with pancreatic cysts without worrisome features or high stigmata with size less than 15 mm who underwent endoscopic ultrasound (EUS) from 2005 through 2013. We analyzed this patients until November 2020. We included all patients with more than 12 months of follow up. We excluded patients with pancreatic pseudocysts. Follow up included endoscopic ultrasound, computed tomography or magnetic resonance imaging. Serial morphological changes and pancreatic cancer(PC) incidence, including malignant progression of PCLs, were evaluated.

**Results** A total of 71 patients (64,8% women and median age 65,6 ± 11,7 years) were followed for a median of 7,3 years (Range 1,0 – 15,1 years). The cystic size was 8,9 ± 3,4 mm. Morphologically, 65 cases (91,5%) were unilocular, 6 (8,5%) multilocular and 24 (33,8%) involved multifocal lesions. The initial EUS presumptive diagnosis of the cysts included: 30 (42,2%) branch-duct intraductal papillary mucinous neoplasms, 30 (42,2%) indeterminate cyst, 7 (9,8%) serous cystic neoplasm and 4 (5,6%) mucinous cystic neoplasm. In the follow up 20 (28%) pancreatic cysts grew or developed new lesions. Three patients (4,2%) (62, 52 and 67 years old) developed pancreatic ductal adenocarcinoma during follow up; from these, two were resectable and one unresectable. The median time to develop PC was 9,6 years (Range 8,9 -10,5 years).

**Conclusions** The incidence of malignant progression of PCLs less than 15 mm without worrisome features or elevated stigmata is not irrelevant and occurs late. For this reason, stopping follow-up early should not be considered in these patients.

### eP392 INCIDENTAL PANCREATIC ADENOCARCINOMA: MORE FREQUENT THAN EXPECTED?

**Authors** Soy G<sup>1</sup>, Olivas I<sup>1</sup>, Bofill A<sup>1</sup>, Escudé L<sup>1</sup>, Sendino O<sup>1</sup>, Fernández-Esparrach G<sup>1</sup>, Ayuso JR<sup>2</sup>, Vaquero E<sup>3</sup>, Ausania F<sup>4</sup>, Saurí T<sup>5</sup>, Alós S<sup>5</sup>, Cuatrecasas M<sup>6</sup>, Balaguer F<sup>3</sup>, Ginès A<sup>1</sup>

**Institute** 1 ICMDM. Hospital Clínic. University of Barcelona, Endoscopy Unit. Department of Gastroenterology, Barcelona, Spain; 2 Hospital Clínic. University of Barcelona, Department of Radiology, Barcelona, Spain; 3 ICMDM. Hospital Clínic. University of Barcelona, Department of Gastroenterology, Barcelona, Spain; 4 ICMDM. Hospital Clínic. University of Barcelona, Department Hepatobiliary Surgery, Barcelona, Spain; 5 Hospital Clínic. University of Barcelona, Department Medical Oncology, Barcelona, Spain; 6 Hospital Clínic. University of Barcelona, Department of Pathology, Barcelona, Spain

DOI 10.1055/s-0041-1724883

**Citation** Soy G, Olivas I, Bofill A et al. eP392 INCIDENTAL PANCREATIC ADENOCARCINOMA: MORE FREQUENT THAN EXPECTED? *Endoscopy* 2021; 53: S224.

**Aims** To describe the frequency and characteristics of incidental PAC sent to our Endoscopy Unit for cytological diagnosis by EUS FNA during the last year.

**Methods** Retrospective study of incidental PAC diagnosed by radiological techniques and cytologically confirmed by EUS FNA in the Endoscopy Unit at Hospital Clínic of Barcelona from September 2019 to November 2020. PAC was considered incidental when it was diagnosed accidentally, in a setting unrelated to this neoplasm.

**Results** In the study period, 66 PAC were confirmed by EUS FNA. Five out of them (7.6%) were found incidentally in the setting of different clinical situations: staging or follow-up of a known neoplasm (lymphoma, endometrial cancer, n = 2), evaluation of urologic disturbances (hematuria, repeated infections of the urinary tract, n = 2) and study before bone marrow transplantation for primary myelofibrosis (n = 1). Medium size of the tumor was 29.4 x 22 mm (range: 16 x 11 mm – 50 x 40 mm). Interestingly, incidental PAC was located in the tail of the pancreas in 3 cases followed by the body and the neck (n = 1 in both locations). No incidental PAC was found in the pancreatic head. Patients underwent surgical resection (n = 2) or palliative chemotherapy for vascular infiltration (n = 2). The patient with concomitant lymphoma is under chemotherapy waiting for surgery after completing it.

**Conclusions** Incidental PAC represents the 7.6% of all PACs cytologically confirmed by EUS FNA in our Unit in the last year. According to this, incidental PAC might be nowadays more frequent than expected. Larger series are needed to confirm our results.

### eP393 ROLE OF ENDOSCOPIC ULTRASOUND IN ACUTE PANCREATITIS ETIOLOGY WORK-UP

**Authors** Elmquaddem O<sup>1,2</sup>, Nasiri M<sup>1,2</sup>, Taiymi A<sup>1,2</sup>, Elmekkaoui A<sup>1,2</sup>, Kharrasse G<sup>1,2</sup>, Zazour A<sup>1,2</sup>, Ismaili Z<sup>1,2</sup>, Khannoussi W<sup>1,2</sup>

**Institute** 1 Mohammed VI University Hospital, Hepato-gastroenterology Department, Oujda, Morocco; 2 Medical School. Mohammed First University, Digestive Diseases Research Laboratory (LARMAD), Oujda, Morocco

DOI 10.1055/s-0041-1724884

**Citation** Elmquaddem O, Nasiri M, Taiymi A et al. eP393 ROLE OF ENDOSCOPIC ULTRASOUND IN ACUTE PANCREATITIS ETIOLOGY WORK-UP. *Endoscopy* 2021; 53: S224.

**Aims** The aim is to assess the role of endoscopy ultrasound (EUS) in determining the etiology of acute pancreatitis.

**Methods** Retrospective, descriptive study, including patients who had EUS for unexplained acute pancreatitis (AP) after clinical biological and morphological investigations in acute phase, in hepato-gastroenterology department - Mohammed VI University hospital Oujda. We considered early phase during hospitalization for AP and delayed EUS at least a month after onset of AP.

**Results** 65 patients were included.

Mean age was 57.7, with sex ratio (F/M) 1.5.

32.3% of pts had history of cholecystectomy.

Elevation of liver enzymes was noted in 66.2% and cholestasis in 72.3% during initial work-up.

The initial morphological assessment (ultrasound/CT +/- MRCP) showed a dilated common bile duct (CBD) without visible obstacle in 63% of patients.

EUS was performed during the early phase of pancreatitis in 61% of patients and 39% had EUS within more than a month.

Among the patients who had CBD dilatation, 61% of cases EUS visualized microlithiasis and 4,8% a pancreatic tumor.

Among the patients who had non dilated CBD on initial imaging, 25% had CBD microlithiasis in EUS.

In pts with non-lithiasis gallbladder and non-dilated CBD on the initial assessment EUS found microlithiasis in 15,3% of cases.

In our study early EUS allowed etiological diagnosis of AP in 61 %, 90.5 % found microlithiasis and 9.5 % tumors

Delayed EUS allowed etiological diagnosis of AP in 38 % of pts were all diagnosed with microlithiasis.

**Conclusions** EUS performed in the early phase of acute pancreatitis detected a biliary etiology in 55.3 %, which allowed specific management and prevention of recurrence. In our series, early EUS detected pancreatic tumors in 5.8 % while other imaging techniques failed to confirm this diagnosis.

Delayed EUS confirmed etiology in 38 % of cases, all of them where of biliary etiology.

### eP394 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOUND IN EVALUATION OF PATIENTS WITH OBSTRUCTIVE JAUNDICE: SINGLE CENTER EXPERIENCE

**Authors** Abobakr S<sup>1</sup>, Eleassawy H<sup>1</sup>, Ghaly S<sup>1</sup>, Abo Elezz M<sup>2</sup>, Farahat A<sup>2</sup>, Zaghloul M<sup>3</sup>

**Institute** 1 Ain Shams, Internal Medicine Department, Gastroenterology and Hepatology Unit, Cairo, Egypt; 2 Theodor Bilharz Research Institute, Tropical Medicine, Giza, Egypt; 3 Kafrelsheikh University, Faculty of Medicine, Hepatology, Gastroenterology and Infectious Diseases, Kafrelsheikh, Egypt  
DOI 10.1055/s-0041-1724885

**Citation** Abobakr S, Eleassawy H, Ghaly S et al. eP394 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOUND IN EVALUATION OF PATIENTS WITH OBSTRUCTIVE JAUNDICE: SINGLE CENTER EXPERIENCE. *Endoscopy* 2021; 53: S225.

**Aims** We prospectively evaluated the role of EUS in detecting the cause of CBD dilatation in patients in whom TUS could not demonstrate the cause of dilation as a proper second step in the diagnostic workup of patients with obstructive jaundice compared to MRCP.

**Methods** This study was conducted on patients with obstructive jaundice admitted to the inpatient ward or the outpatient endoscopy unit of Theodor Bilharz Research Institute (TBRI) during the period between January 2019 and August 2019. Patient with obstructive jaundice and Abdominal US showed CBD dilatation with internal diameter  $\geq 7$  mm and biliary stricture.

**Results** During the period between January 2019 and August 2019, 136 were recruited; 8 were pregnant and 3 patients had gastric bypass surgery were excluded. 65 patients were diagnosed confidently by TAU and were excluded from the analysis. 60 patients with obstructive jaundice and indefinite etiology on TUS were included in the final analysis. The final diagnosis of patients was 38 patients (63.33 %) of malignant etiology [26 pancreatic cancer (43.33 %), 4 cholangiocarcinoma (6.66 %), and 8 with ampullary cancer (13.33 %)], 22 patients (36.67 %) of benign etiology [10 calculi obstruction (16.66 %), 8 benign stricture (13.33 %), and 4 pancreatitis (6.66 %)].

The sensitivity and specificity values for malignant stricture detected by EUS were 100 %, 86.36 %, respectively with positive predictive value 92.68 %, negative predictive value 100 % and accuracy 95 %, while MRI showed 82.14 % sensitivity, 25 % specificity with positive predictive value 79.31 and accuracy is 69.4 %. EUS supported correct diagnosis in 57 patients, (95 %: CI 86.08 % to 98.96 %) while MRI did it in 36 patients (69.44 %: CI 51.89 % to 83.65 %). Only 43 (71.7 %) patients needed ERCP for management of obstructive jaundice, sparing 17 patients (28.3 %) unnecessary invasive procedures.

► Tab. 1

<b>Age years, mean (SD)</b>	<b>58.01(11.44)</b>
Sex, male/female n(%)	38/22 (63.3 %: 36.7 %)
T.Bilirubin mg/dL, Median (IQR)	9.00 (6-12)
ALT IU/L, Median (IQR)	53.00 (35.00- 102.50)

**Conclusions** EUS is a minimally invasive method with low incidence of complications with high diagnostic accuracy in patients with dilated CBD and normal MRCP.

### eP395 UTILITY OF EUS-GUIDED THROUGH THE NEEDLE MICROBIOPSY IN INFLUENCING MANAGEMENT OUTCOMES OF PATIENTS WITH CYSTIC LESIONS: A SINGLE CENTRE EXPERIENCE

**Authors** On W<sup>1</sup>, Paranandi B<sup>1</sup>, Huggett MT<sup>1</sup>, Sanni L<sup>1</sup>, Cairns A<sup>1</sup>

**Institute** 1 Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom  
DOI 10.1055/s-0041-1724886

**Citation** On W, Paranandi B, Huggett MT et al. eP395 UTILITY OF EUS-GUIDED THROUGH THE NEEDLE MICROBIOPSY IN INFLUENCING MANAGEMENT OUTCOMES OF PATIENTS WITH CYSTIC LESIONS: A SINGLE CENTRE EXPERIENCE. *Endoscopy* 2021; 53: S225.

**Aims** The recent development of through-the-needle microbiopsy (TTNB) forceps via endoscopic ultrasound (EUS) has facilitated sampling of pancreatic cyst walls for histological analysis. This novel method has added to the armamentarium of the currently available radiological, biochemical and cytological modalities in the diagnostic algorithm of patients with pancreatic cystic lesions (PCL). We aimed to describe the utility of EUS-TTNB in influencing management outcomes at a tertiary hepatopancreatobiliary unit.

**Methods** A prospective database of consecutive patients who underwent EUS-TTNB from March 2020 to October 2020 was retrospectively analysed. Recorded variables included patient demographics, technical success, histological results, adverse events and management outcomes.

Patient	Lesion location	Size on EUS (mm)	Pre-TTNB MDT diagnosis	Post-TTNB histological diagnosis	Outcome	Adverse events
1	HOP	35	IPMN vs. SCN	IPMN	Start surveillance	No
2	TOP	33	Indeterminate	Indeterminate	Continue surveillance	No
3	Retroperitoneal	250	GIST	GIST	Chemotherapy	Yes
4	BOP	35	MCN	Lymphoepithelial cyst	Avoided surgery	No
5	HOP	40	SB-IPMN vs. MCN	SCN	Avoided surveillance	No
6	BOP	50	SB-IPMN	SCN	Avoided	No

**Results** Seven patients (4 male; 3 female) were identified. All patients were discussed in dedicated multidisciplinary team (MDT) meetings and a consensus on the nature of the lesion was not possible. Seven patients had PCLs and one patient had a retroperitoneal cystic lesion. Technical success was achieved in 100% of patients. Specimen adequacy for definitive histological diagnosis was achieved in 85.7% of patients (n=6), leading to a change in management. An adverse event was encountered in one patient\* who developed an infection of the cystic lesion post EUS-TTNB. After extensive MDT discussion, EUS guided drainage was performed resulting in good clinical response. The table summarises the key characteristics and outcomes of the patients.

**Conclusions** Our case series has demonstrated EUS-TTNB to be a valuable and safe tool in the diagnostic pathway of patients with cystic lesions and led to a change in management in the majority of patients. Further larger prospective studies are required.

### eP396 NUMBER OF PASSES AND LYMPH NODE SIZE PREDICT ADEQUATE YIELD OF TISSUE IN ABSENCE OF ON-SITE EVALUATION DURING EUS GUIDED SAMPLING

**Authors** Harindranath S<sup>1</sup>, Sundaram S<sup>1</sup>, Kale A<sup>1</sup>, Singh A<sup>1</sup>, Shukla A<sup>1</sup>

**Institute** 1 Seth GS Medical College & King Edward VII Memorial Hospital, Department of Gastroenterology, Mumbai, India

**DOI** 10.1055/s-0041-1724887

**Citation** Harindranath S, Sundaram S, Kale A et al. eP396 NUMBER OF PASSES AND LYMPH NODE SIZE PREDICT ADEQUATE YIELD OF TISSUE IN ABSENCE OF ON-SITE EVALUATION DURING EUS GUIDED SAMPLING. *Endoscopy* 2021; 53: S226.

**Aims** Endoscopic ultrasound (EUS) sampling is a vital step in diagnosis of abdominal and mediastinal lymphadenopathy. We performed a retrospective study to study accuracy of EUS guided tissue sampling of lymphadenopathy in absence of On-Site Evaluation (OSE) by cyto-pathologist and predictive factors leading to inadequate sampling.

**Methods** Retrospective review of prospectively maintained endoscopic data from a tertiary care center was done for patients who underwent EUS guided sampling for abdominal and mediastinal lymphadenopathy from July 2018 to July 2020. Demographic details, EUS findings, needle type, size, number of passes and final diagnosis were noted.

**Results** 83 patients were included in the study (Female – 50.6%, Mean age – 37.5 years, Mediastinal lymphadenopathy 7/83 (8.4%). Multiple lymph nodes were seen in 53 (63.8%) patients. Most common site for sampling was periportal (54.2%) followed by peripancreatic (24.1%). Most common tissue diagnoses were tuberculosis in 35 (42.1%) and metastasis from malignancies in 14 (16.8%). 22G needle was used in 90.4%, 19G and 25G in 4.8% each. FNB needle was used in 81.9% patients. In 12 (14.5%) patients, the tissue yield was insufficient for diagnosis. Age, sex, type and size of needle did not impact yield significantly on univariate and multivariate analysis. Number of passes (3.42 vs 4.13, p=0.028) and mean lymph node size (1.78 vs 2.63 cm, p=0.048) were associated with inadequate yield and need for repeat sampling on univariate and multivariate analysis. The AUROC for lymph node size was 0.71 for prediction of need for repeat sampling, with sensitivity of 63.4% and specificity of 83.3% at a size of 2 cm.

**Conclusions** The yield for EUS-FNB in the absence of OSE was 85.5%. Larger lymph node size and higher number of passes were the determinants of adequate yield in absence of OSE. At-least 4 passes should be made for adequate sampling of lymph nodes in absence of OSE.

### eP397 TUMOR ANGIOGENESIS ASSESSED BY DYNAMIC CONTRAST HARMONIC IMAGING ENDOSCOPIC ULTRASOUND AND IMMUNOHISTOCHEMICAL ANALYSIS IN GASTRIC CANCER - A FEASIBILITY STUDY

**Authors** Sacerdotianu V-M<sup>1</sup>, Ungureanu BS<sup>1</sup>, Iordache S<sup>1</sup>, Constantinescu CE<sup>1</sup>, Cazacu SM<sup>1</sup>, Pirici D<sup>2</sup>, Stroescu C<sup>3</sup>, Şurlin V<sup>4</sup>, Gheonea DI<sup>1</sup>, Saftoiu A<sup>1</sup>

**Institute** 1 University of Medicine and Pharmacy of Craiova, Research Center of Gastroenterology and Hepatology Craiova, Craiova, Romania; 2 University of Medicine and Pharmacy of Craiova, Histology Department, Craiova, Romania; 3 St. Mary Hospital Bucharest, Surgical Department II, Bucharest, Romania; 4 University of Medicine and Pharmacy of Craiova, Surgical Department, Craiova, Romania

**DOI** 10.1055/s-0041-1724888

**Citation** Sacerdotianu V-M, Ungureanu BS, Iordache S et al. eP397 TUMOR ANGIOGENESIS ASSESSED BY DYNAMIC CONTRAST HARMONIC IMAGING ENDOSCOPIC ULTRASOUND AND IMMUNOHISTOCHEMICAL ANALYSIS IN GASTRIC CANCER - A FEASIBILITY STUDY. *Endoscopy* 2021; 53: S226.

**Aims** Our aim was to assess the vascular perfusion pattern in gastric cancer (GC) using dynamic contrast harmonic imaging endoscopic ultrasound (CHI-EUS) and compare it to immunohistochemical markers of angiogenesis and clinico-pathological parameters.

**Methods** GC patient's CHI-EUS examinations were assessed before treatment decision. We used a dedicated software (Vuebox, Bracco Imaging S.p.A., Milan, Italy) to quantitatively analyze the vascular pattern of specific regions of interest (ROI). Time-intensity curve (TIC) and the following parameters were automatically generated: peak enhancement (PE), wash-in area under the curve (WiAUC), rise time (RT), mean transit time (mTTI), time to peak (TTP), wash-in rate (WiR), wash-in perfusion index (WiPI), wash-out AUC (WoAUC), wash-in area under the curve (WiAUC), wash-in and wash-out AUC (WiWoAUC), fall time (FT), wash-out rate (WoR), quality of fit (QOF), and ROI area. After CD105 immunostaining, we calculated the vascular area and the microvascular density (MVD). The correlation between angiogenesis markers and tumor stage, grade and dimension were assessed.

**Results** Twenty-eight CHI-EUS video sequences were analyzed. Correlations with statistical significance (p<0.05) were observed between TIC analysis parameters (PE, WiPI, RT, TTP), MVD and pathological factors like tumor diameter, grade, as well as N and M staging. Positive correlations were observed between PE, WiPI, ROI area and tumor diameter (r = 0.8749, r = 0.8598, r = 0.7993 and P<0.05), between RT, TTP and M staging (r = 0.7634, r = 0.9316 with P<0.05) and between TTP and N stage (r = - 0.6798, p=0.005). We also found statistical significance (p<0.05) between tumor diameter, N staging and MVD (r = - 0.97, r = - 0.86).

**Conclusions** CHI-EUS may be a feasible tool to estimate real-time GC angiogenesis and disease prognosis. Further studies are needed to establish its role in GC management.

### eP398V DOUBLE TROUBLE: TWO LARGE SYNCHRONOUS RETROPERITONEAL LESIONS

**Authors** Martins Pinto da Costa A<sup>1</sup>, Gonzalez Haba Ruiz M<sup>1</sup>, Kaibel Axpe I<sup>2</sup>, Martin Lopez J<sup>3</sup>, Tormo Lanseros B<sup>1</sup>, Calleja Panero JL<sup>1</sup>

**Institute** 1 Hospital Universitario Puerta de Hierro Majadahonda, Gastroenterology, Madrid, Spain; 2 Hospital La Luz, Surgery, Madrid, Spain; 3 Hospital Universitario Puerta de Hierro Majadahonda, Pathology, Madrid, Spain

DOI 10.1055/s-0041-1724889

**Citation** Martins Pinto da Costa A, Gonzalez Haba Ruiz M, Kaibel Axpe I et al. eP398V DOUBLE TROUBLE: TWO LARGE SYNCHRONOUS RETROPERITONEAL LESIONS. *Endoscopy* 2021; 53: S226.

A 73-year-old female was admitted for jaundice.

Lab workout showed Bil 7.7 mg/dl, GGT 198 U/L and negative tumor markers. CT scan showed biliary obstruction caused by an atypical large (85mm) lesion located in the pancreatoduodenal groove, and a second smaller lesion adjacent to the pancreatic tail.

EUS FNB was consistent with GIST on both lesions. Subsequent ERCP was uneventfully performed. Patient underwent upfront surgery (duodenopancreatic resection + resection of pancreatic tail lesion) with a final pathologic diagnosis of a GIST with peritoneal metastasis (smaller lesion), therefore a T3N0M1 stage (AJCC 8th edition).

## eP399 A GLIMPSE INTO DIAGNOSTIC TO THERAPEUTIC EUS, WITH OR WITHOUT COMPLICATIONS

**Authors** Cherciu Harbiyeli IF<sup>1</sup>, Ivan ET<sup>1</sup>, Burtea ED<sup>1</sup>, Calita M<sup>1</sup>, IM Cazacu<sup>1</sup>, Popescu C<sup>1</sup>, Surlin V<sup>2</sup>, Saftoiu A<sup>1</sup>

**Institute** 1 Research Center of Gastroenterology and Hepatology, University of Medicine and Pharmacy Craiova, Craiova, Romania; 2 University of Medicine and Pharmacy of Craiova, Department of Surgery, Craiova, Romania

DOI 10.1055/s-0041-1724890

**Citation** Cherciu Harbiyeli IF, Ivan ET<sup>1</sup>, Burtea ED et al. eP399 A GLIMPSE INTO DIAGNOSTIC TO THERAPEUTIC EUS, WITH OR WITHOUT COMPLICATIONS.

*Endoscopy* 2021; 53: S227.

**Aims** Endoscopic ultrasound (EUS) gained a wide acceptance as the diagnostic and minimally invasive therapeutic approach of intra-luminal, extraluminal gastrointestinal and various non- gastrointestinal lesions. Since its introduction, EUS has undergone substantial and constant technological advances. Hence, the aim of this study was to extensively assess in dynamic the EUS experience of our tertiary referral centre.

**Methods** This study is a retrospective analysis of a prospectively maintained database of patients who underwent EUS for the evaluation of benign and malignant diseases of the upper/middle/lower GI tract and of the organs in its proximity. All EUS procedures data recorded patients' demographics, referral details and indications, provisional diagnosis, management plan, technical success, complications. EUS-FNA/FNB dataset included site, number of passes, cytological and histological diagnosis.

**Results** A total of 2086 patients undergoing EUS between 2001- 2020 were included. Procedures were carried out under deep propofol sedation (64%) or conscious sedation (36%). Therapeutic procedures performed included EUS-guided fine needle aspiration/biopsy (37%) and endoscopic transmural drainage of pancreatic fluid collections (9%), celiac plexus block and neurolysis (<1%). Contrast enhanced-EUS (36%) and real time elastography (10%) were conducted. Indications for EUS were: pancreatobiliary (1367), esophageal & gastric/duodenal (338), mediastinum & lungs (124), liver (95), colorectal (122), retroperitoneal (40) lesions. Technical difficulties encountered were correlated to unpassable luminal strictures. Most complications occurred during the first 7 days after EUS-FNA/FNB or pseudocyst drainage, thus 1.5% of the patients presented: acute pancreatitis, infections, bile peritonitis and hemorrhage. 77% of these patients recovered with conservatory therapy whilst 33% required surgical intervention.

**Conclusions** This is the first report of a large single centre EUS experience over the past 20 years. EUS and the additional tools have high technical success rates and low rates of complications. The EUS methods are safe, cost effective and indispensable for the diagnostic or therapeutic management in gastroenterological everyday practice.

## eP400 PATIENT SATISFACTION OF DEEP PROPOFOL SEDATION VERSUS MODERATE MIDAZOLAM AND FENTANYL SEDATION DURING COLONOSCOPY IN INFLAMMATORY BOWEL DISEASE: A RANDOMIZED CONTROLLED TRIAL & NBSF

**Authors** Steenholdt C<sup>1</sup>, Jensen J<sup>1</sup>, Brynskov J<sup>1</sup>, AM Møller<sup>2</sup>, Limschou AC<sup>1</sup>, Konge L<sup>3</sup>, Vilmann P<sup>1</sup>

**Institute** 1 Herlev-Gentofte University Hospital, Dept of Gastroenterology, Herlev, Denmark; 2 Herlev-Gentofte University Hospital, Dept of Anaesthesiology, Herlev, Denmark; 3 University of Copenhagen and the Capital Region of Denmark, Copenhagen Academy for Medical Education and Simulation. Copenhagen, Denmark

DOI 10.1055/s-0041-1724891

**Citation** Steenholdt C, Jensen J, Brynskov J et al. eP400 PATIENT SATISFACTION OF DEEP PROPOFOL SEDATION VERSUS MODERATE MIDAZOLAM AND FENTANYL SEDATION DURING COLONOSCOPY IN INFLAMMATORY BOWEL DISEASE: A RANDOMIZED CONTROLLED TRIAL & NBSF. *Endoscopy* 2021; 53: S227.

**Aims** Colonoscopy is essential for optimal management of inflammatory bowel disease (IBD) to ensure pivotal endoscopic treatment goals, notably mucosal healing. However, colonoscopy is not favored by patients and many opt out due to unpleasantness of the procedure. We aimed to investigate if Nurse Administered Propofol Sedation (NAPS) improves patient satisfaction and attitude towards future colonoscopies.

**Methods** Randomized controlled trial of deep sedation with NAPS (n = 63) versus moderate midazolam and fentanyl sedation (n = 67). To assess the primary end-point of patient satisfaction at discharge, we developed a Satisfaction Questionnaire comprising 13 items each rated by a 5-point Likert scale and with higher scores reflecting more positive outcomes (13-65 points). *Clinicaltrials.gov* NCT01934088.

**Results** Fifty-six patients (43%) with ulcerative colitis, 48 (37%) with Crohn's disease, and 26 (20%) with suspected IBD were included. Most (88%) had previously had a colonoscopy and pre-procedure expectations were similar between groups. Patients receiving deep sedation had significantly higher satisfaction scores (mean 60.1, SD 3.4) than those receiving moderate sedation (51.2, 8.4; p<0.001). This was driven by less pain, more amnesia, sedation more to their liking, and better experience with the current than previous sedations. Importantly, these patients significantly more often preferred the same sedation for a future colonoscopy and were also inclined to accept more frequent colonoscopies. Subgroup analysis including patients with established IBD only revealed similar results. Explorative exclusion of patients with perianal disease or previous abdominal surgery also revealed similar findings. Assistance from another colonoscopist and disruption of the procedure due to pain occurred significantly more frequent in the moderate sedation group. There were no safety issues associated with NAPS.

**Conclusions** IBD patients favor deep propofol sedation over moderate midazolam and fentanyl sedation. Availability of deep propofol sedation (NAPS) and honoring patients' Final diagnosis was established through a request for sedation depth may facilitate improved patient adherence to endoscopy-based IBD monitoring programmes.



## eP401 TOLERANCE OF COLONOSCOPY WITHOUT ANESTHESIA: ANY PREDICTIVE FACTORS?

Authors Bouchabou B<sup>1</sup>, Laabidi S<sup>1</sup>, Kefi M<sup>1</sup>, Ghribi M<sup>1</sup>, Ben nejma H<sup>1</sup>, Bougassas W<sup>1</sup>, Ennaifer R<sup>1</sup>

Institute 1 Faculty of Medicine of Tunis/Mongi Slim La Marsa, Gastroenterology, Tunis, Tunisia

DOI 10.1055/s-0041-1724892

Citation Bouchabou B, Laabidi S, Kefi M et al. eP401 TOLERANCE OF COLONOSCOPY WITHOUT ANESTHESIA: ANY PREDICTIVE FACTORS?.

Endoscopy 2021; 53: S228.

**Aims** Tolerance of the colonoscopy is a determining factor of quality, especially since it is most often performed without anesthesia. The aim of our work was to assess the tolerance of colonoscopy in patients who presented to the endoscopy room and to determine the associated factors in order to better select the true candidates for colonoscopy under sedation.

**Methods** A prospective study was conducted, including consecutive patients consulting for endoscopy (July 2019-January 2020). Colonoscopy was performed without anesthesia. Tolerance was assessed by the visual analogue scale (VAS). Poor tolerance was estimated at VAS  $\geq$  7/10. In addition to patient's demographic characteristics, medical and surgical history, body mass index, indication for colonoscopy and quality of preparation assessed by Boston score were collected. For patients with irritable bowel syndrome, Francis score was calculated.

**Results** We collected 152 patients (median age: 60y.(28-89);74 females). The colonoscopy was performed to explore a transit disorder (constipation or diarrhea) in 50 % of cases. The average Boston score was 6/9 (3-9). The mean tolerance assessed by the VAS was 5/10 (2-10). One hundred and four patients (69%) had well to moderate tolerability. Poor tolerability was associated with the following factors: history of abdominal-pelvic surgery ( $p=0.006$ ; OR = 2; 95 % CI (1-4)), diverticular disease ( $p=0.02$ ; OR = 3; 95 % CI (1-10)) and a Francis score of 245 ( $p=0.027$ ; OR = 8; 95 % CI (1-84)). Furthermore, no correlation was found between poor tolerance and the following factors: diabetes ( $p=0.24$ ), sex ( $p=0.5$ ), age ( $p=0.09$ ) and body mass index ( $p=0.9$ ).

**Conclusions** tolerance during live colonoscopy depended on a history of abdominal-pelvic surgery, diverticular disease and presence of irritable bowel syndrome with a high Francis score. Large scale taking into account these factors would better rationalize the indication of anesthesia during colonoscopy.

## eP402 EUS-GUIDED TISSUE ACQUISITION OF GI SUBEPITHELIAL LESIONS WITH MACROSCOPIC ON-SITE EVALUATION (MOSE): ADEQUACY WITH FNA AND FNB NEEDLES

Authors Togliani T<sup>1</sup>, Pilati S<sup>1</sup>

Institute 1 ASST Poma, Gastroenterology Unit, Mantova, Italy

DOI 10.1055/s-0041-1724893

Citation Togliani T, Pilati S. eP402 EUS-GUIDED TISSUE ACQUISITION OF GI SUBEPITHELIAL LESIONS WITH MACROSCOPIC ON-SITE EVALUATION (MOSE): ADEQUACY WITH FNA AND FNB NEEDLES. Endoscopy 2021; 53: S228.

**Aims** EUS imaging, even if coupled with FNA, has a suboptimal accuracy in diagnosing subepithelial lesions; to increase the performance of EUS-guided tissue acquisition the use of FNB needles, or the addition of macroscopic (MOSE) or microscopic (ROSE) evaluation of the specimen have been proposed. The aim of this study is to compare the adequacy of FNA with MOSE and FNB with MOSE in this setting.

**Methods** We retrospectively divided our cases in two groups according to the technique used. In the FNA group the target lesion was punctured with a cytological needle and the specimen was smeared on slides and macroscopically

assessed; if needed, additional needle passes were done till five slides showed some whitish granular or thread-like material. In the FNB group an histological needle of any type was used and one or more needle passes were done till at least 2 cm of tissue cores, overall, were acquired. We compared the final microscopic adequacy and the needle passes effected when using the two techniques.

**Results** 60 lesions, 6 in the esophagus, 38 in the stomach, 8 in the duodenum and 8 in the rectum were studied. FNA was adequate in 18 out of 22 (81.8%) cases after a mean of 3.2 needle passes. FNB was adequate in 30 out of 38 (78.9%) cases after a mean of 2.1 needle passes ( $p<0.05$ ). The final diagnoses were 8 adenocarcinoma, 3 squamous carcinoma, 16 GIST, 4 leiomyoma, 4 NET, 3 lipoma, 1 pancreatic rest, 1 psammosarcoma, 1 Schwannoma, 1 glomus tumor, 1 Brunneroma, 5 normal submucosal cells without atypias, 12 non diagnostic.

**Conclusions** The presurgical diagnosis of GI subepithelial lesions is challenging but the endosonographer can increase his performance using FNB needles and MOSE, that could represent a fast and cheap alternative to ROSE.

## eP403 DO WE REALLY NEED FNB CORE NEEDLE TO OBTAIN ENDOSCOPIC ULTRASOUND GUIDED BIOPSY OF PANCREATIC ADENOCARCINOMA? A RETROSPECTIVE STUDY FROM A SINGLE CENTER EXPERIENCE

Authors Orlando D<sup>1</sup>, Assisi D<sup>1</sup>, Forcella D<sup>1</sup>, Visca P<sup>1</sup>, Marandino F<sup>1</sup>, Pierconti F<sup>1</sup>, Lapenta R<sup>1</sup>, Stigliano V<sup>1</sup>

Institute 1 Regina Elena National Cancer Institute, Rome, Italy

DOI 10.1055/s-0041-1724894

Citation Orlando D, Assisi D, Forcella D et al. eP403 DO WE REALLY NEED FNB CORE NEEDLE TO OBTAIN ENDOSCOPIC ULTRASOUND GUIDED BIOPSY OF PANCREATIC ADENOCARCINOMA? A RETROSPECTIVE STUDY FROM A SINGLE CENTER EXPERIENCE. Endoscopy 2021; 53: S228.

**Aims** Endoscopic ultrasound-guided fine-needle biopsy (EUS-FNB) has been suggested for obtaining tissue samples from pancreatic tumors. Many series have failed to demonstrate that EUS-FNB is more effective than EUS -FNA in diagnostic accuracy . Aim of this study was to evaluate the use of EUS-FNA needle to collect material for both cytologic and histologic examination.

**Methods** A total of 232 patients (119 men and 113 women) with pancreatic lesions were retrospectively evaluated. The same 22 Gauge needle Cook Medical was used in a first period between 2008 to 2014 in order to obtain only cytologic samples (group A), and in the second period, between 2014 to 2019 to collect both cytologic and histologic specimens (group B).

All aspirated material was collected immediately into liquid-based cytology tubes and the core tissue moved to formalin containing bottle. MOSE (macroscopically on-site evaluation) was assessed immediately after the collection.

**Results** Final diagnosis was pancreatic adenocarcinoma in 76/113 (68%) patients in group A and 88/119 (74%) in group B. Mean tumor size was 34.5 mm in group A and 35.4 mm in group B. The lesions were equally distributed in the two groups; in the group A 65 lesions (57%) were located in head/uncinate and 48 (43%) in the body/tail segments, whereas in group B 61 (51%) lesions were located in head/uncinate and 58 (49%) in body/tail.

Non diagnostic rate was 26% (30/113) and 21% (25/119) respectively in group A and group B. No statistical significant differences were reported in the final diagnostic accuracy. The median number of needle passes ( $n=3$ ) was the same in both groups.

**Conclusions** Our data suggest that use of FNA needle (22 gauge Cook) with an adequate number of passes, a MOSE determination of the samples and a correct management of the collected specimens, permits to obtain both FNA and FNB specimen collection.

## eP404V NOT YOUR EVERYDAY JAUNDICE; EUS MAKES IT SIMPLE

**Authors** [Pavic T<sup>1</sup>](#), [Kralj D<sup>1</sup>](#), [Hrabar D<sup>1</sup>](#), [Demirovic A<sup>2</sup>](#), [Lerotic I<sup>1</sup>](#)

**Institute** 1 University Hospital Center Sestre Milosrdnice, Department of Gastroenterology and Hepatology, Zagreb, Croatia; 2 University Hospital Center Sestre Milosrdnice, Department of Pathology, Zagreb, Croatia  
DOI 10.1055/s-0041-1724895

**Citation** Pavic T, Kralj D, Hrabar D et al. eP404V NOT YOUR EVERYDAY JAUNDICE; EUS MAKES IT SIMPLE. *Endoscopy* 2021; 53: S228.

Diagnostic and therapeutic features of endoscopic ultrasound make it an essential tool for any interventional unit. In times of global pandemic getting the most from as few endoscopic procedures as possible becomes of utmost importance, not only for our patients, but for all endoscopy staff. The versatility, accuracy, and safety of EUS, both in image and tissue acquisition, helped us resolve the diagnostic dilemma in a jaundiced patient in an elegant manner with minimal patient discomfort.

## eP405V POSTOPERATIVE ORGANIZED CHYLOTHORAX TREATED BY EUS-FNA: A CASE REPORT

**Authors** [Assisi D<sup>1</sup>](#), [Forcella D<sup>2</sup>](#), [Gallina FT<sup>2</sup>](#), [Mercadante E<sup>2</sup>](#), [Pierconti F<sup>3</sup>](#), [Facciolo F<sup>2</sup>](#)

**Institute** 1 IRCCS Regina Elena National Cancer Institute, Digestive Endoscopy Unit, Rome, Italy; 2 IRCCS Regina Elena National Cancer Institute, Thoracic Surgery, Rome, Italy; 3 IRCCS Regina Elena National Cancer Institute, Anesthesiology and Intensive Care Unit, Rome, Italy  
DOI 10.1055/s-0041-1724896

**Citation** Assisi D, Forcella D, Gallina FT et al. eP405V POSTOPERATIVE ORGANIZED CHYLOTHORAX TREATED BY EUS-FNA: A CASE REPORT. *Endoscopy* 2021; 53: S229.

Chylothorax is infrequent complication after lung surgery specially in case of radical mediastinal lymph nodes dissection. Diagnosis involves cholesterol and triglyceride measurement in the pleural fluid. First option to treat this complication is conservative therapy that is characterized by changing diet to include fewer long-chain fatty acids, free fatty acids. However, this can lead to fat deficiency and malnutrition over time. If conservative therapy fails is indicated to perform surgery. We present a case of postoperative organized chylothorax treated with Endoscopic Ultrasound Fine-needle Aspiration (EUS-FNA).

## eP406 FACTORS AFFECTING THE DIAGNOSTIC PERFORMANCE OF EUS-GUIDED SAMPLING IN SOLID PANCREATIC LESIONS BY TRAINEE ENDOSCOPISTS

**Authors** [Razpotnik M<sup>1</sup>](#), [Bota S<sup>1</sup>](#), [Kutilek M<sup>2</sup>](#), [Essler G<sup>1</sup>](#), [Weber-Eibel J<sup>1</sup>](#), [Maieron A<sup>2</sup>](#), [Peck-Radosavljevic M<sup>1</sup>](#)

**Institute** 1 Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology, and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klinikum Klagenfurt am Wörthersee, Klagenfurt am Wörthersee, Austria; 2 Internal Medicine 2, Gastroenterology and Hepatology and Rheumatology, Karl Landsteiner University of Health Sciences, University Hospital of St. Pölten, St. Pölten, Austria

DOI 10.1055/s-0041-1724897

**Citation** Razpotnik M, Bota S, Kutilek M et al. eP406 FACTORS AFFECTING THE DIAGNOSTIC PERFORMANCE OF EUS-GUIDED SAMPLING IN SOLID PANCREATIC LESIONS BY TRAINEE ENDOSCOPISTS. *Endoscopy* 2021; 53: S229.

**Aims** EUS is associated with a long learning curve. Both the technical and cognitive skills of the operator are needed to reach the necessary level of competence. We aimed to assess the factors which may influence the accuracy and sensitivity for malignancy in EUS-guided sampling of solid pancreatic lesions by trainees.

**Methods** Our study included EUS-FNA/FNB of solid pancreatic masses identified in a prospectively collected database of two Austrian centers. Examinations were performed by five endosonographers (three trainees). An experienced endosonographer was defined as having performed at least 225 EUS examinations, including 50 interventions (25 on pancreatic tumors). The accuracy (Acc) was calculated as the proportion of true positive and true negative in all evaluated cases, while sensitivity (Se) for malignancy represented the proportion of true positive in all malignant cases. The final diagnosis was determined by cyto-histopathology or clinical follow-up with a combination of tumor-markers and radiological findings.

**Results** 201 EUS-FNA/FNB of solid pancreatic lesions (73.1% malignant) in 179 patients (median age 69 years, 57.7% males) were enrolled. Trainees performed 73/201 (36.3%) interventions. Overall accuracy and sensitivity tend to increase with endoscopists' experience: 83.6% vs. 71.2% ( $p=0.11$ ), and 79.1% vs. 66.7% ( $p=0.07$ ), respectively. More experienced endoscopists achieved better performance in sampling via the transduodenal approach (83.7% vs. 70%,  $p=0.09$ ). The tumor size seems to play a role in the sample adequacy independent of the operator's experience. However, sensitivity in the trainee group for small lesions (<20mm) was poor (60%). Trainees more frequently decided to use larger FNA needles and showed lower sensitivity for malignancy when sampling using 22 G needles: 33.3% vs. 86%,  $p=0.01$  (Tab. 1).

► Tab. 1

Variables	Expert (Acc)	Trainee (Acc)	Expert (Se)	Trainee (Se)
<i>Puncture</i>				
(A) Gastral	(A) 83.3% (30/36)	(A) 73.9% (17/23)	(A) 73.9% (17/23)	(A) 68.4% (13/19)
(B) Duo-denal	(B) 83.7% (77/92)	(B) 70% (35/50)	(B) 80.9% (55/68)	(B) 65.8% (25/38)
<i>TU Type</i>				
(A) Maligne	(A) 79.1% (72/91)	(A) 66.7% (38/57)	(A) 79.1% (72/91)	(A) 66.7% (38/57)
(B) Benigne	(B) 94.6% (35/37)	(B) 87.5% (14/16)		
<i>TU Size (mm)</i>				
(A) <20	(A) 84.6% (11/13)	(A) 62.5% (5/8)	(A) 81.8% (9/11)	(A) 60% (3/5)
(B) 20-40	(B) 74.6% (44/59)	(B) 69.5% (41/59)	(B) 70.6% (36/51)	(B) 64.6% (31/48)
(C) >40	(C) 94.4% (17/18)	(C) 100% (5/5)	(C) 92.3% (12/13)	(C) 100% (4/4)
<i>Needle Type</i>				
(A) FNA	(A) 76% (38/50)	(A) 70.5% (43/61)	(A) 69.2% (27/39)	(A) 66% (31/47)
(B) FNB	(B) 88.5% (69/78)	(B) 75% (9/12)	(B) 86.5% (45/52)	(B) 70% (7/10)
<i>Needle Size</i>				
(A) 19 G	(A) 77.3% (41/53)	(A) 73% (46/63)	(A) 70.7% (29/41)	(A) 70.6% (36/51)
(B) 22 G	(B) 88% (66/75)	(B) 60% (6/10)	(B) 86% (43/50)	

**Conclusions** During EUS training, it would be reasonable to perform punctures of smaller lesions via transduodenal approach by more advanced trainees. The type and size of the needle chosen by trainees may influence the accuracy and sensitivity of EUS-guided sampling of solid pancreatic lesions.

#### eP407 PERFORMANCE OF EUS-GUIDED FNA OF SOLID PANCREATIC LESIONS ACCORDING TO THE LEVEL OF OPERATOR-EXPERIENCE

**Authors** Razpotnik M<sup>1</sup>, Bota S<sup>1</sup>, Essler G<sup>1</sup>, Urak C<sup>1</sup>, Weber-Eibel J<sup>1</sup>, Peck-Radosavljevic M<sup>1</sup>

**Institute 1** Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology, and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klinikum Klagenfurt am Wörthersee, Klagenfurt am Wörthersee, Austria

DOI 10.1055/s-0041-1724898

**Citation** Razpotnik M, Bota S, Essler G et al. eP407 PERFORMANCE OF EUS-GUIDED FNA OF SOLID PANCREATIC LESIONS ACCORDING TO THE LEVEL OF OPERATOR-EXPERIENCE. *Endoscopy* 2021; 53: S230.

**Aims** The amount of training before the independent performance of EUS-FNA of solid pancreatic lesions has been poorly described. In previous studies, rapid on-site cytopathological examination (ROSE) to evaluate the FNA sample adequacy was used. We aimed to evaluate the number of interventions needed to reach acceptable competence in EUS-guided FNA of solid pancreatic lesions in centers without ROSE.

**Methods** Patients with solid pancreatic masses who underwent EUS-FNA between 07/2016-09/2020 in our tertiary center were identified in a prospectively collected database. Examinations were performed by three operators without prior experience in EUS tissue sampling. The first 15-20 FNAs were performed under the direct supervision of an experienced endosonographer. According to the number of EUS-FNAs performed, the following levels of experience were defined (group A-F): ≤10, 11-20, 21-30, 31-40, 41-50, >50 interventions. Complications were assessed according to the ESGE guidelines. The final diagnosis was determined by cyto-histopathology or clinical follow-up with a combination of tumor-markers and radiological findings.

**Results** 150 FNAs in 137 patients (mean age 67 years, 63.3% males) with solid pancreatic lesions were analyzed: 76.7% malignant (60.7% adenocarcinomas), and 23.3% benign masses. Similar baseline characteristics were found for all patient groups examined by levels of operator-experience. The diagnostic performance of EUS-FNA improved rapidly after performing at least 40 interventions (Table). Best accuracy and sensitivity for malignancy were observed in experts (group F) and were higher especially compared to endosonographers with less supervision (group C-D): 81.8% vs. 55% ( $p=0.02$ ), and 78.3% vs.

58.1% ( $p=0.18$ ), respectively. Severe complications were rare (2.7%), and 3/4 of them occurred early in the training process (group A-B).

**Conclusions** Despite the lack of real-time evaluation of sample adequacy, the accuracy and sensitivity for malignancy improved after performing at least 40 EUS-guided FNAs in solid pancreatic lesions. Early in the learning process (< 20 EUS-FNA), additional attention to avoid complications is warranted.

#### eP408 THE IMPACT OF ENDOSCOPIC ULTRASOUND GUIDED FINE-NEEDLE BIOPSY (EUS-FNB) IN THE EVALUATION OF NON-PANCREATIC SOLID LESIONS OF UPPER GASTROINTESTINAL TRACT AND MEDIASTINUM

**Authors** Budimir I<sup>1</sup>, Pavić T<sup>1</sup>, Baršić N<sup>1</sup>, Živković M<sup>1</sup>, Juroš Z<sup>2</sup>, Ratkajec V<sup>3</sup>, Ratković A<sup>4</sup>, Bakula D<sup>1</sup>, Hrabar D<sup>1</sup>

**Institute 1** «SestreMilosrdnice» University Hospital Center, Division of Gastroenterology, Department of Internal Medicine, Zagreb, Croatia; **2** «SestreMilosrdnice» University Hospital Center, Department of Pathology, Zagreb, Croatia; **3** County Hospital Virovitica, Virovitica, Croatia; **4** County Hospital Gospić, Gospić, Croatia

DOI 10.1055/s-0041-1724899

**Citation** Budimir I, Pavić T, Baršić N et al. eP408 THE IMPACT OF ENDOSCOPIC ULTRASOUND GUIDED FINE-NEEDLE BIOPSY (EUS-FNB) IN THE EVALUATION OF NON-PANCREATIC SOLID LESIONS OF UPPER GASTROINTESTINAL TRACT AND MEDIASTINUM. *Endoscopy* 2021; 53: S230.

**Aims** This prospective study highlights diagnostic accuracy and complications of EUS-FNB focusing on non-pancreatic solid lesions.

**Methods** Between January 2019 and June 2020, 46 adult patients with mediastinal, oesophageal, gastric, duodenal, liver, biliary and retroperitoneal solid lesions were prospectively observed. Exclusion criteria were cystic lesions and absolute contraindications to FNB. Sedation was performed by intravenous administration of midazolam and fentanyl. EUS-FNB (transesophageal, transgastric or transduodenal approach) was performed using an ultrasound endoscope and 22-gauge Boston scientific Acquire needle (2-3 time passes; low negative pressure). All collected specimens were sent for cytological and histopathological analysis. EUS-FNB samples were adequate for histological analysis in nine (19.5%) patients because of that we didn't make a statistic pattern. In the case of EUS-FNB of the lymph node, a flow-cytometry analysis was used. The primary endpoints were diagnostic sensitivity and specificity of EUS-FNB for non-pancreatic solid lesions. The second endpoint was the frequency of EUS-FNB complications.

**Results** 45,6% of patients were under the age of 65. 51% of the patients were women. Most of the lesions were in lymph nodes (13;28.3%), biliary tree (10;21.7%), liver (6;13%), mediastinum (9;19.6%) and retroperitoneum (7;15.2%). The final diagnosis revealed malignancy in 41 cases (GISTs, adenocarcinomas, melanomas) (78.3%), lymphomas (10.9%). Benign tumours (adenomas, leiomyomas) were confirmed in three (6.5%), and granulomatosis in two (4.6%) patients. Sensitivity, specificity, positive and negative predictive values of EUS-FNB (based on cytological analysis) for diagnosing extrapancreatic tumors were 94.59% (95%CI; 81.81% to 99.34%), 83.33% (95% CI; 35.88% to 99.58%), 97.22% (95% CI; 85.38% to 99.53%), 71.43% (95% CI; 38.26% to 90.98%), respectively. There were no major complications.

**Conclusions** EUS-FNB is an extremely sensitive modality that enables specific and accurate diagnosis of non-pancreatic solid lesions of the upper gastrointestinal tract and mediastinum. When EUS-FNB is performed by an experienced endoscopist there is a low rate of complications.

Experience (No. EUS-FNAs)	Accuracy	Sensitivity for malignancy	Complication rate
(A) ≤ 10	(A) 60% (18/30)	(A) 64% (16/25)	(A) 3.3% (1/30)
(B) 11-20	(B) 77.8% (21/27)	(B) 76.5% (13/17)	(B) 7.4% (2/27)
(C) 21-30	(C) 55% (11/20)	(C) 53.8% (7/13)	(C) 0% (0/20)
(D) 31-40	(D) 55% (11/20)	(D) 61.1% (11/18)	(D) 0% (0/20)
(E) 41-50	(E) 75% (15/20)	(E) 76.5% (13/17)	(E) 2.8% (1/36)
(F) > 50	(F) 81.8% (27/33)	(F) 78.3% (18/26)	

## eP409 TECHNICAL AND CLINICAL OUTCOMES OF USING SINGLE WIDE-CALIBER DOUBLE PIGTAIL STENT FOR ENDOSCOPIC ULTRASOUND-GUIDED PANCREATIC PSEUDOCYST DRAINAGE, EGYPTIAN MULTICENTER PROSPECTIVE STUDY

**Authors** Ghoneem E<sup>1,2</sup>, Okasha H<sup>3</sup>, Attallah H<sup>1</sup>, Shiha G<sup>1,2</sup>, Ragab K<sup>4</sup>

**Institute** 1 Faculty of Medicine, Mansoura University, Gastroenterology and Hepatology, Mansoura, Egypt; 2 Egyptian Liver Research Institute and Hospital (ELRIAH), Gastroenterology and Hepatology, Mansoura, Egypt; 3 Kasr al-Aini School of Medicine, Cairo University, Internal Medicine, Division of Hepatology and Gastroenterology, Cairo, Egypt; 4 Theodor Bilharz Research Institute, Hepatology and Gastroenterology, Cairo, Egypt

**DOI** 10.1055/s-0041-1724900

**Citation** Ghoneem E, Okasha H, Attallah H et al. eP409 TECHNICAL AND CLINICAL OUTCOMES OF USING SINGLE WIDE-CALIBER DOUBLE PIGTAIL STENT FOR ENDOSCOPIC ULTRASOUND-GUIDED PANCREATIC PSEUDOCYST DRAINAGE, EGYPTIAN MULTICENTER PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S231.

**Aims** EUS-guided cystogastrostomy is the current accepted practice for pancreatic pseudocyst drainage with insertion of two or more double pigtail stents. There is no much work on the efficacy of using single wide caliber double pigtail stent aiming to decrease the time, complications and accessories used in the procedure.

**Methods** This multicenter prospective study included 57 patients from them 35 patients with symptomatic pancreatic pseudocysts enrolled. We excluded cysts with multiple septations (n= 7) or >30% necrosis (n= 8) of the cyst content and patients with generalized ascites (n= 4) or patient with major comorbidities (n= 3).

**Results** From fifty-seven patient, thirty-five patients (19 females/16 males, median age 40 years) diagnosed with uncomplicated PPC were referred for EUS-guided drainage. All stents used for the drainage were 10 Fr DP plastic stents. Median duration of the whole procedure in 34 patients was 16 minutes (range; 13.5-27) and only one case with stent mal-deployment into the lumen of the cyst completed using another stent within 40 minutes.

Technical success was achieved in all cases. Clinical success was encountered in 32 patients (91.4%) with improvement of patient symptoms and resolution of the cyst without re-accumulation on follow up. Minor adverse events were encountered in three patients (8.6%) including post-procedure abdominal pain in one patient, fever in two patients, resolved after conservative management.

**Conclusions** we suggest that using a wide caliber single pigtail stent for EUS-guided cystogastrostomy is safe and effective with short procedure time, reduced risks from insertion of other stent(s), and reduced costs.

## eP410V EUS-GUIDED PSEUDOCYST DRAINAGE

**Authors** Borahma M<sup>1</sup>, El Ouardi W<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

**Institute** 1 Mohammed V University, Ibn Sina Hospital, Department of Gastroenterology C, Rabat, Morocco

**DOI** 10.1055/s-0041-1724901

**Citation** Borahma M, El Ouardi W, Lagdali N et al. eP410V EUS-GUIDED PSEUDOCYST DRAINAGE. *Endoscopy* 2021; 53: S231.

## eP411 TO COMPARE THE EUS GUIDED CELIAC PLEXUS NEUROLYSIS WITH OPIOIDS FOR PANCREATIC CANCER PAIN RELIEF AND QUALITY OF LIFE. A PROSPECTIVE RANDOMIZED STUDY FROM INDIA

**Author** Raina H<sup>1</sup>

**Institute** 1 Ivy Hospital, Gastroenterology and Hepatology, Amritsar, India

**DOI** 10.1055/s-0041-1724902

**Citation** Raina H. eP411 TO COMPARE THE EUS GUIDED CELIAC PLEXUS NEUROLYSIS WITH OPIOIDS FOR PANCREATIC CANCER PAIN RELIEF AND

QUALITY OF LIFE. A PROSPECTIVE RANDOMIZED STUDY FROM INDIA.

*Endoscopy* 2021; 53: S231.

**Aims** EUS guided Celiac plexus neurolysis (CPN) and opioids are commonly used for pancreatic cancer related pain. The aim of this study was to compare the EUS –CPN versus opioid (tapendalol and pentazocine) in controlling the pancreatic cancer related pain and improving quality of life (QOL).

**Methods** This randomized control study involved matched 68 metastatic pancreatic cancer patients having significant pain. They were randomized equally into two groups to underwent EUS-CPN or to take opioids (tapendalol and pantozocine) for pain relief. EUS-CPN was successfully performed by a single experienced endosonographer. The injectate was delivered on both sides of the superior mesenteric artery origin. 15 to 20 mL of a mixture of 5% iopamidol and 95% of ethanol was also injected after injecting 2 to 3 ml of bupivacaine.

Pain scores and quality of life (QOL) were compared between the two groups. The primary endpoint was defined as the reduction in pain on visual analog scale (VAS) rated from a 0 to 10, every 4 weeks after the baseline for 6 months.

**Results** VAS scores decreased in both the groups but with decrease was more with EUS CPN group than opioid group at week 4, 12 and 16 (4.3 ± 2.1 for the EUS-CPN group vs 1.5 ± 1.1 for the control group (P = .03). Also the QOL between the groups were significantly better in EUS CPN group than opioid group till week 16. However, beyond week 16 till 24 week, both the groups behaved same. However, beyond 24 weeks, the drugs group (VAS =4.2 ± 1.2) fared better than EUS-CPN group (VAS=6.9 ± 1.2) p =0.04.

**Conclusions** EUS-CPN is better than opioids for controlling pancreatic cancer-associated pain till 16 weeks only. The EUS-PCN procedure should be repeated at 16 weeks.

## eP412 ENDOSCOPIC ULTRASOUND (EUS) ELASTOGRAPHY AND CONTRAST ENHANCED EUS FOR DISCRIMINATION OF PANCREATIC MASSES

**Authors** Taleb A<sup>1</sup>, Abd El-Rahim A<sup>2</sup>, Abdel-Fattah A<sup>3</sup>, Zayed N<sup>2</sup>, Ibrahim M<sup>3</sup>

**Institute** 1 New Giza University, Cairo, Egypt; 2 Cairo University, Tropical Medicine, Cairo, Egypt; 3 Theodor Bilharz Research Institute, Gastroenterology and Hepatology, Cairo, Egypt

**DOI** 10.1055/s-0041-1724903

**Citation** Taleb A, Abd El-Rahim A, Abdel-Fattah A et al. eP412 ENDOSCOPIC ULTRASOUND (EUS) ELASTOGRAPHY AND CONTRAST ENHANCED EUS FOR DISCRIMINATION OF PANCREATIC MASSES. *Endoscopy* 2021; 53: S231.

**Aims** Investigate the clinical utility of contrast-enhanced endoscopic ultrasound (CEEUS) and endoscopic ultrasound elastography (EUS-E) in diagnosis of pancreatic masses.

**Methods** 30 patients with solid pancreatic focal lesions were included. All patients were subjected to laboratory investigations, conventional ultrasound, triphasic computed tomography (CT) scan, EUS-E, CEEUS, and EUS FNA. Diagnostic accuracy of EUS-E and CEEUS were compared and correlated to the pathology for pancreatic lesions.

**Results** Malignant lesions were larger in size (32.2 ± 10.3), and had greater SR-E-EUS and more hypovascular pattern. The mean strain ratio was 16.4 ± 8.14 for benign and 67.76 ± 72.45 for malignant lesions (P=0.001). Hypovascular pattern after contrast injection was present in 76 % of malignant and 60 % of benign lesions (P=0.66). ROC analysis for the mean SR-E-EUS of the region of interest yielded an optimal cutoff of 74.4 with an AUC of 0.91 (95% CI: 0.74-0.98) for the best power distinction for malignancy. It provided a sensitivity and specificity of 75% and 80%, respectively.

**Conclusions** EUS based novel modalities (CE-EUS and EUS-E) could distinguish between benign and malignant lesions and improve the identification of the vascular pattern respectively. Both techniques could be considered a complementary imaging modality in the characterization of pancreatic tumors.



## eP413V UNUSUAL CASE OF MULTI-GATED EUS GUIDED PSEUDOCYST DRAINAGE

**Authors** Sundaram S<sup>1</sup>, Harindranath S<sup>1</sup>, Dodmani M<sup>1</sup>, Irtaza M<sup>1</sup>, Kale A<sup>1</sup>, Shukla A<sup>1</sup>

**Institute 1** Seth GS Medical College & King Edward VII Memorial Hospital, Department of Gastroenterology, Mumbai, India

**DOI** 10.1055/s-0041-1724904

**Citation** Sundaram S, Harindranath S, Dodmani M et al. eP413V UNUSUAL CASE OF MULTI-GATED EUS GUIDED PSEUDOCYST DRAINAGE. *Endoscopy* 2021; 53: S231.

28-year-old male was diagnosed with large bilobed pseudocyst of 22 X 13 cm in the lesser sac with atrophic pancreas. During EUS, the larger lobe was accessible through the esophagus and smaller through the stomach. Multi-gated approach for cystogastrostomy was considered due to size and approach needed. Punctures were taken through esophagus and stomach for drainage. While only stent was placed through the esophageal approach without balloon dilatation, the stomach tract was dilated up to 10 mm. There was complete resolution of the cyst at 6 weeks. Only 4 previous reports of trans-esophageal pseudocyst drainage were found on literature review.

## eP414 EUS GUIDED DRAINAGE OF NON-WALLED OFF ORGANISED PANCREATIC NECROSIS; A TERTIARY CENTER EXPERIENCE

**Authors** Ahmed W<sup>1</sup>, Caracostea A<sup>1</sup>, Reffitt D<sup>1</sup>, Prachalias A<sup>1</sup>, Menon K<sup>1</sup>, Srinivasan P<sup>1</sup>, Heaton ND<sup>1</sup>, Patel A<sup>1</sup>, Harrison PM<sup>1</sup>, Joshi D<sup>1</sup>, Devlin J<sup>1</sup>

**Institute 1** King's College Hospital NHS Foundation Trust, London, United Kingdom

**DOI** 10.1055/s-0041-1724905

**Citation** Ahmed W, Caracostea A, Reffitt D et al. eP414 EUS GUIDED DRAINAGE OF NON-WALLED OFF ORGANISED PANCREATIC NECROSIS; A TERTIARY CENTER EXPERIENCE. *Endoscopy* 2021; 53: S232.

**Aims** To describe the clinical outcomes in patients undergoing EUS guided pancreatic necrosectomy in non-walled off organised collections.

**Methods** All patients undergoing EUS guided drainage of organised pancreatic necrosis were retrospectively identified from our endoscopy data base over a two year period.

**Results** 12 patients (7 male, 5 female) with necrotizing pancreatitis and organised pancreatic necrosis were identified from June 2018 to October 2020. Median age was 59, ten patients had been admitted to a critical care facility. Eighteen procedures were undertaken (one procedure in 7, two in 4 and three in 1).

All patients underwent EUS-guided deployment of a Hot Axios™ stent (lumen apposing fully covered metal stent). Median stent size (radial diameter) was 15mm x 10mm (range 20mm in one, 15mm in eight, 10 in three).

Technical success was achieved in all patients. A nasocystic drain was placed through the stent into the necrosis in 3 patients. Eleven patients demonstrated improvement of the collections post stent insertion.

There were no procedure related complications. One episode of luminal bleeding occurred two days post-procedure with no source identified. Blockage of the stent was seen in four patients at 28, 22, 18 and 6 days prompting gastroscopic flushing. One patient was readmitted with sepsis of unclear aetiology. Nine patients were discharged from hospital following intervention with a median length of stay in hospital of 5 days (range 1-97). Two of these died from multiorgan failure (157 days and 56 days post procedure). The rest have improved clinically. One died in hospital 47 days post procedure with multiorgan failure, two are still an inpatient (58 days and 49 days post procedure).

**Conclusions** We report on efficacy and safety in a cohort of unwell patients undergoing EUS guided pancreatic necrosectomy with large diameter Hot Axios™ stents. These stents facilitate repeated debridement and endoscopic flushing.

## eP415V GIANT PANCREATIC PSEUDOCYST - DRAINAGE WITH THE NEW 20MM LUMEN-APPPOSING METAL STENT

**Authors** Chálim Rebelo C<sup>1</sup>, Nunes N<sup>1</sup>, Flor de Lima M<sup>1</sup>, Moura DB<sup>1</sup>, Santos MP<sup>1</sup>, Costa Santos V<sup>1</sup>, Rego AC<sup>1</sup>, Pereira JR<sup>1</sup>, Paz N<sup>1</sup>, Duarte MA<sup>1</sup>

**Institute 1** Hospital do Divino Espírito Santo de Ponta Delgada, Gastroenterology Department, Ponta Delgada, Portugal

**DOI** 10.1055/s-0041-1724906

**Citation** Chálim Rebelo C, Nunes N, Flor de Lima M et al. eP415V GIANT PANCREATIC PSEUDOCYST - DRAINAGE WITH THE NEW 20MM LUMEN-APPPOSING METAL STENT. *Endoscopy* 2021; 53: S232.

53 years-old-man, with chronic pancreatitis, presents with epigastric pain. CT showed a 15x12cm pseudocyst of the pancreatic tail and body, with some solid debris.

Under deep sedation and orotracheal intubation, a 20x10mm lumen-apposing metal stent (LAMS, HotAxios™-BostonScientific) was deployed in the pseudocyst, through the stomach, followed by abundant drainage. Control CT displayed a significant reduction of the pseudocyst's measures (5x3mm), without the need to further interventions. Then the stent was removed.

The 20mm LAMS, when compared to the 10 and 15mm, facilitates the drainage of gigantic collections and decreases the number of interventions needed, without increasing the adverse events.

## eP417 COMPARISON OF APPROACHES FOR PANCREATIC CYST DRAINING, FACTORS FOR DECISION-MAKING

**Authors** Denisova A<sup>1</sup>, Zhegalov P<sup>1</sup>, Samoilenko A<sup>1</sup>

**Institute 1** Regional Clinical Hospital, Endoscopy, Krasnoyarsk, Russian Federation

**DOI** 10.1055/s-0041-1724907

**Citation** Denisova A, Zhegalov P, Samoilenko A. eP417 COMPARISON OF APPROACHES FOR PANCREATIC CYST DRAINING, FACTORS FOR DECISION-MAKING. *Endoscopy* 2021; 53: S232.

**Aims** Pancreatic pseudocyst might occur as a complication of acute pancreatitis in 14.6%. Large cysts could be symptomatic or complicated and need invasive treatment if more than 6 cm in diameter and does not resolve longer than 6 week. Percutaneous drainage, surgery or endoscopic draining procedures are possible approaches of treatment. Decision is not always obvious so the aim of our study was to analyze factors involved in tactic strategy choice.

**Methods** 107 patients with medium age of 43 years, 66,3% were treated in our Hospital for the period from 2014 to 2018. Etiologically 42% of pancreatitis cases was alcoholic, 27% alimentary, 26% biliary and 5% posttraumatic. Patients were divided into 4 groups: 1st – traditional surgical approach (n=32), 2nd – isolated percutaneous drainage with ultrasound navigation, 3rd – endoscopic transmural draining, 4th – combinations of approaches (main pancreatic duct stenting plus endoscopic transmural draining or endoscopic transmural draining plus percutaneous drainage with ultrasound navigation). Efficacy was assessed by following criteria: resolving of cyst complications, cyst reduction dynamics, hospital stay, complications of surgical procedures, relapse, mortality.

**Results** Hospital stay was significantly lower in group 4 (p1-4 = 0,000, p2-4 = 0,048, p3-4 = 0,006). General effectiveness (complications, relapse, pancreatic fistulas, negative outcome) of treatment in group 1 was 49,9%, 2 – 54%, 3 – 76%, 4 – 100% (p1-4 = 0,0006, p2-4 = 0,0010, p3-4 = 0,0182). Best effectiveness was shown by main pancreatic duct stenting with endoscopic transmural draining (plastic or metal stent) with location of the cyst in pancreatic body and head with amylase level more than 5000 units per liter in cystic fluid.

**Conclusions** The approach of the treatment of the patients with pancreatic pseudocysts should be individualized to get the best results. Amylase level and location of the cyst can help to choose better treatment option.

## eP418 LUMEN APPOSING METAL STENTS: HOW FAR ARE WE FROM STANDARDIZATION? AN ITALIAN SURVEY

**Authors** Fabbri C<sup>1</sup>, Coluccio C<sup>1</sup>, Binda C<sup>1</sup>, Fugazza A<sup>2</sup>, Anderloni A<sup>2</sup>, Tarantino I<sup>3</sup> i-EUS group

**Institute** 1 AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, Forlì-Cesena, Italy; 2 Humanitas Clinical and Research Center - IRCCS, Digestive Endoscopy Unit, Rozzano (MI), Italy; 3 IRCCS-ISMETT, Endoscopy Service, Department of Diagnostic and Therapeutic Services, Palermo, Italy  
**DOI** 10.1055/s-0041-1724908

**Citation** Fabbri C, Coluccio C, Binda C et al. eP418 LUMEN APPOSING METAL STENTS: HOW FAR ARE WE FROM STANDARDIZATION? AN ITALIAN SURVEY. *Endoscopy* 2021; 53: S233.

**Aims** Aim of the survey is to investigate procedural and peri-procedural aspects of Lumen-Apposing Metal Stent (LAMS) placement nationwide.

**Methods** 48 questions, grouped under five sections (expertise, peri-/intra-procedural aspects, budget/refund, future perspectives), were submitted to Italian pancreatobiliary centers. Practice of more or less experienced endoscopists were compared. Statistical analyzer was SPSS.

**Results** 36 centers completed the survey. Among specialists, 42% have >15 years of endoscopic experience, 61% placed overall <20 LAMS.

1. Indications for LAMS positioning are: 97% pancreatic fluid collection drainage (PFCD), 80% biliary drainage (BD), 75% gallbladder drainage (GBD), 20% gastroentero-anastomosis (GE-A). 78% of endoscopists perform only on-label procedures. Concerning the training, 39% attended a preliminary course, 28% were just supported by an expert, 22% had both the opportunities, 8% didn't do any of them.
2. Management of antiplatelets therapy is very disomogeneous. Only half of the participants discuss the case in a multidisciplinary meeting and, during follow-up, only 30% evaluate these patients in a specialized clinic. After PFCD, 66% of endoscopists carry on proton pump inhibitors therapy. Type and timing of post-procedural imaging varies widely. No significant differences were found among more or less experienced endoscopists about on- vs on/off-label indications, perception of technical complexity and post-procedural imaging request ( $p > 0.05$ ).
3. 8% of endoscopists work without fluoroscopy. Sedation protocol is very different among centers.
4. Refund for LAMS is mostly not guaranteed.
5. Main future growing indications appear to be BD, GBD and GE-A (70%, 55%, 55% respectively). Most of participants consider necessary an experience in all kind of interventional endoscopic procedures for training.

**Conclusions** This is the first survey assessing the state of the art on LAMS almost 10 years after their introduction in interventional endoscopic ultrasonography. There are currently wide variations in practice nationwide, which demonstrates a pressing need to define technical, qualitative and peri-procedural requirements, towards a standardization.

## eP419 ENDOSCOPIC ULTRASOUND GUIDED DRAINAGE OF PATIENTS WITH INFECTED WALLED OFF NECROSIS: WHICH STENT TO CHOOSE?

**Authors** Muktesh G<sup>1</sup>, Samanta J<sup>1</sup>, Dhar J<sup>1</sup>, Agarwala R<sup>1</sup>, Bellum BL<sup>1</sup>, Gupta P<sup>1</sup>, Yadav TD<sup>2</sup>, Gupta V<sup>3</sup>, Sinha SK<sup>1</sup>, Kochhar R<sup>1</sup>

**Institute** 1 Postgraduate Institute of Medical Education and Research, Department of Gastroenterology, Chandigarh, India; 2 Postgraduate Institute of Medical Education and Research, Surgery, Chandigarh, India; 3 Postgraduate Institute of Medical Education and Research, Department of Surgery, Chandigarh, India  
**DOI** 10.1055/s-0041-1724909

**Citation** Muktesh G, Samanta J, Dhar J et al. eP419 ENDOSCOPIC ULTRASOUND GUIDED DRAINAGE OF PATIENTS WITH INFECTED WALLED OFF NECROSIS: WHICH STENT TO CHOOSE? *Endoscopy* 2021; 53: S233.

**Aims** We aimed to compare clinical outcomes of endoscopic ultrasound (EUS) guided drainage procedure using biflanged metal stents (BFMS) or double pigtail plastic stents (DPPS) amongst patients with pancreatic fluid collections and subgroup with infected walled off necrosis (WON).

**Methods** Between Jan 2018 to Dec 2019, consecutive patients with symptomatic PFC subjected to EUS guided drainage using biflanged metal stents (BFMS) or double pigtail plastic stents (DPPS) were compared for technical success, clinical success, duration of procedure, need for ICU stay, duration of ICU stay, ventilator need, resolution of organ failure, duration for resolution of organ failure, need for necrosectomy, need for salvage percutaneous drainage, complications, need for surgery and mortality. A subgroup of patients having infected WON were also analysed separately.

**Results** Among 130 patients (84.6% males) with PFC (108 WON, 22 pseudocyst) who underwent EUS guided drainage, there was no difference in outcome parameters in BFMS and DPPS groups in the entire cohort. Amongst patients with WON, clinical success was significantly higher (93.7% vs 80%,  $p = 0.039$ ), duration of hospital stay (5 days vs 10 days,  $p = 0.028$ ) and duration of procedure significantly lower ( $15.94 \pm 7.2$  minutes vs  $42.40 \pm 11.2$  minutes,  $p = 0.0001$ ) in BFMS compared to DPPS group. Amongst patients with infected WON the duration of procedure was significantly lower ( $15.36 \pm 6.8$  vs  $40.56 \pm 10.0$ ,  $p = 0.0001$ ) and there was a trend towards higher clinical success in BFMS compared to DPPS group (90.9% vs 73.9%,  $p = 0.243$ ). On multivariate analysis, use of BFMS for drainage was found to be a positive predictor [OR- 4.36, ( $p = 0.034$ ), CI: 1.12 – 12.01] whereas WON having a solid component > 40% [OR-0.20, ( $p = 0.002$ ), CI: 0.05 – 0.79] was a negative predictor for clinical success.

**Conclusions** EUS guided drainage in WON using BFMS scores over DPPS. In patients having infected WON, BFMS may be preferred over DPPS.

## eP420 ENDOSCOPIC STEP-UP APPROACH OF SYMPTOMATIC PANCREATIC NECROTIC COLLECTIONS. A NEED FOR FINE-TUNING OF THE GUIDELINES?

**Authors** Keczer B<sup>1</sup>, Miheller P<sup>1</sup>, Horváth M<sup>1</sup>, Marjai T<sup>1</sup>, Harsányi L<sup>1</sup>, Szűcs Á<sup>1</sup>, Sziájtó A<sup>1</sup>, Hritz I<sup>1</sup>

**Institute** 1 Semmelweis University, 1st Department of Surgery and Interventional Gastroenterology, Budapest, Hungary  
**DOI** 10.1055/s-0041-1724910

**Citation** Keczer B, Miheller P, Horváth M et al. eP420 ENDOSCOPIC STEP-UP APPROACH OF SYMPTOMATIC PANCREATIC NECROTIC COLLECTIONS. A NEED FOR FINE-TUNING OF THE GUIDELINES? *Endoscopy* 2021; 53: S233.

**Aims** Multidisciplinary step-up approach is recommended in the management of symptomatic pancreatic necrotic collections (PNC). Application of lumen-apposing metal stents (LAMS) facilitates the transmural endoscopic ultrasound (EUS)-guided drainage. Subsequent debridement of necrotic material can be performed in a form of irrigation by naso-cavitary drain and/or direct endoscopic necrosectomy (DEN). Whether to apply irrigation or DEN is unclear. Furthermore, when and “on-demand” or scheduled DEN should be carried out is also unknown. Delayed removal of the LAMS has been associated with increased risk of complications, accordingly timing of removal is also in evolution. Our aim was to fine-tune the recommendations in a form of a local protocol to improve safety and clinical efficacy of the step-up approach using LAMS.

**Methods** 12 patients with symptomatic PNC who underwent EUS-guided drainage with LAMS followed by debridement were assessed. First group of patients ( $n = 8$ ) after LAMS placement were treated routinely only with irrigation drain and released when clinically improved; DEN was performed only if septic complications occurred. In a second group of patients ( $n = 4$ ) irrigation and subsequent scheduled DEN (2-4 times) was accomplished. Clinical outcome was compared and evaluated.

**Results** In the first group in 62.5% (5/8) of patients PNC resolved with no need for DEN or other intervention and the LAMS were removed after 5-6 weeks. In 37.5% (3/8) of patients after discharge septic complications occurred and

required readmission and series of DEN for debridement. In the second group where LAMS placement was routinely followed by scheduled DEN all PNCs resolved without septic complications and LAMS were removed within 4-5 weeks, except one patient who died few hours after successful scheduled DEN session of an unpredicted fatal hemorrhage.

**Conclusions** Fine-tuning of the guidelines may improve safety and clinical efficacy of the step-up approach in the management of symptomatic pancreatic necrotic collections.

### eP421 ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION FOR TREATMENT OF BENIGN INSULINOMA

**Authors** Svoboda C<sup>1</sup>, Pachofszky T<sup>2</sup>, Mitrovits N<sup>1</sup>, Stimakovits J<sup>1</sup>, Schleischitz A<sup>1</sup>, Püspök A<sup>1</sup>

**Institute** 1 Barmherzige Brüder Eisenstadt, Eisenstadt, Austria; 2 Klinikum Landstraße, Vienna, Austria

**DOI** 10.1055/s-0041-1724911

**Citation** Svoboda C, Pachofszky T, Mitrovits N et al. eP421 ENDOSCOPIC ULTRASOUND-GUIDED RADIOFREQUENCY ABLATION FOR TREATMENT OF BENIGN INSULINOMA. *Endoscopy* 2021; 53: S234.

**Aims** An insulinoma is a rare functional neuroendocrine tumor of the pancreas (pNETs) with an incidence of approximately 1/250.000, the majority (90%) is benign. Insulinomas count to the small pNETs, therefore their detection with conventional imaging (CT, MRI) is sometimes unrewarding. Endoscopic ultrasound (EUS) can detect up to 95%, consequently should be imaging technique of choice. Surgical resection (tumor enucleation or limited pancreatic resection) is currently standard of care for solitary insulinoma. Endoscopic ultrasound-guided radiofrequency ablation (EUS-RFA) as a minimally invasive and local ablative procedure was described as feasible treatment approach with a low periprocedural complications risk in selected patients in the last few years. The aim of this case series is to reveal the efficacy and safety of EUS-RFA for benign solitary insulinoma.

**Methods** The data of overall 6 insulinomas, which were diagnosed and verified by biopsy between July 2019 to February 2020, was analysed retrospectively.

**Results** Two patients underwent primary surgical resection, four patients were treated with EUS-RFA after informed consent was given. We used two different EUS-RFA systems: the 19G Habib needle electrode (10 W, 90 sec, Boston Scientific) and the 19G impedance controlled EUSRA needle electrode (50W, Tae-wong). The median diameter of the treated lesions was 12.25mm, all ablated lesions were solitary and had a ki-67 index < 2%; follow-up was between 1.5 to 6.5 months. In three patients, hypoglycaemia related symptoms disappeared immediately after treatment and rapid normalization of blood glucose levels was observed. In one patient RFA was not successful in first session with the Habib-needle electrode, hence a second ablation with the EUSRA needle was performed; subsequently no further hypoglycaemia was documented in this patient also. No major adverse events occurred in all four patients.

**Conclusions** EUS-RFA might be an efficient and safe future treatment option for well-differentiated insulinomas; nevertheless, further larger prospective trials are required.

### eP422V DUAL STENTING: EUS BILIARY DRAINAGE AND DUODENAL METAL STENT

**Authors** Borahma M<sup>1</sup>, Jebari y<sup>1</sup>, Lagdali N<sup>1</sup>, Benelbarhdadi I<sup>1</sup>, Ajana FZ<sup>1</sup>

**Institute** 1 Mohammed V University, Ibn Sina Hospital, Department of Gastroenterology C, Rabat, Morocco

**DOI** 10.1055/s-0041-1724912

**Citation** Borahma M, Jebari y, Lagdali N et al. eP422V DUAL STENTING: EUS BILIARY DRAINAGE AND DUODENAL METAL STENT. *Endoscopy* 2021; 53: S234. A 57 old-year-male, with no medical history, was admitted for acute cholangitis. The clinical examination noted jaundice and scratching lesions. CT-scan showed a pancreatic head mass with upstream dilation of the common bile

duct and intrahepatic duct. Abdominal-MRI showed the same findings as CT-scan and an infiltration of the duodenal wall. During endoscopic drainage, duodenoscopy showed a gastric outlet obstruction with complete stenosis of the duodenum, since, transpapillary drainage was impossible. we chose to perform a dual stenting: echoendoscopic drainage through choledochoduodenal anastomosis with a fully covered self-expanding metal stent 80/8 mm and placement of duodenal metal stent 80/20mm.

### eP423 EUS-GUIDED BILIARY DRAINAGE WITH ELECTROCAUTERY-ENHANCED LUMEN-APPOSING METAL STENT PLACEMENT SHOULD REPLACE PTBD AFTER ERCP FAILURE IN PATIENTS WITH DISTAL TUMORAL BILIARY OBSTRUCTION: RETROSPECTIVE STUDY

**Authors** Ginestet C<sup>1</sup>, Geyl S<sup>1</sup>, Legros R<sup>1</sup>, Hummel V<sup>2</sup>, Sanglier F<sup>2</sup>, Rouchaud A<sup>2</sup>, Lepetit H<sup>1</sup>, Dahan M<sup>1</sup>, Carrier P<sup>1</sup>, Loustaud-Ratti V<sup>1</sup>, Sautereau D<sup>1</sup>, Albouys J<sup>1</sup>, Jacques J<sup>1</sup>

**Institute** 1 CHU Dupuytren Limoges, Hepato-Gastro-Enterology, Limoges, France; 2 CHU Dupuytren Limoges, Radiology, Limoges, France

**DOI** 10.1055/s-0041-1724913

**Citation** Ginestet C, Geyl S, Legros R et al. eP423 EUS-GUIDED BILIARY DRAINAGE WITH ELECTROCAUTERY-ENHANCED LUMEN-APPOSING METAL STENT PLACEMENT SHOULD REPLACE PTBD AFTER ERCP FAILURE IN PATIENTS WITH DISTAL TUMORAL BILIARY OBSTRUCTION: RETROSPECTIVE STUDY. *Endoscopy* 2021; 53: S234.

**Aims** In the context of malignant distal biliary obstruction, ERCP is the reference technique for bile duct drainage. In case of failure, the alternative techniques are percutaneous transhepatic biliary drainage and more recently endoscopic ultrasound-guided biliary drainage. A new type of stent called the electrocautery-enhanced lumen-apposing metal stent has been developed to enable the performance of biliodigestive anastomosis under EUS-guidance in a single step, without prior bile duct puncture or the need for a guidewire. The aim of our study was to compare the real-life efficacies of PTBD and EUS-BD with the EC-LAMS for cases of ERCP failure in patients with malignant biliary obstruction.

**Methods** We performed a monocentric retrospective study comparing PTBD and EUS-BD with the use of electrocautery-enhanced lumen apposing metal stent in the context of a malignant distal biliary obstruction after ERCP failure.

**Results** 95 patients were included (50 in the EUS-BD group and 45 in the PTBD group). The main etiology of malignant obstruction was adenocarcinoma of the head of the pancreas (85%). There was a significant difference in favor of endoscopic ultrasound-guided biliary drainage using electrocautery-enhanced lumen apposing metal stent for the following criteria: clinical success (decrease of bilirubin level allowing chemotherapy): 89.3% vs 45.5%;  $p < 0.0001$ ; technical success: 97.9% vs 68.2%;  $p = 0.00013$ , procedure-related adverse event rate: 2.12% vs 22.7%;  $p = 0.003$ ; length of stay after drainage: 3.5 vs 8.2 days;  $p < 0.0001$ , overall cost of the strategy per patient: 5098 vs 9363 euros;  $p < 0.001$ .

**Conclusions** Our results are in favor of EUS-BD using electrocautery-enhanced lumen apposing metal stent in case of ERCP failure for a distal tumor biliary obstacle. Operators performing ERCP for distal tumor biliary obstacle must learn this backup procedure because of its superiority over percutaneous transhepatic biliary drainage in terms of technical success, clinical success, safety, cost.

### eP424 EFFICACY OF EUS-GUIDED BILIARY DRAINAGE FOR MALIGNANT HILAR OBSTRUCTION AND FAILED/PARTIAL DRAINAGE BY ERCP

**Authors** Dhir V<sup>1</sup>, Shah R<sup>1</sup>, Udawat P<sup>1</sup>

**Institute** 1 Institute of Digestive and Liver Care, SL Raheja Hospital, Gastroenterology, Mumbai, India

**DOI** 10.1055/s-0041-1724914

**Citation** Dhir V, Shah R, Udawat P. eP424 EFFICACY OF EUS-GUIDED BILIARY

DRAINAGE FOR MALIGNANT HILAR OBSTRUCTION AND FAILED/PARTIAL DRAINAGE BY ERCP. *Endoscopy* 2021; 53: S234.

**Aims** To assess the safety and efficacy of EUS-BD for malignant hilar obstruction in short and medium term, in patients with failed/partial drainage by ERCP.

**Methods** Records of patients who underwent EUS-BD for malignant hilar obstruction at our unit from March 2019 to October 2020 were accessed. Indications, type of hilar block on MRCP, previous ERCP, success and short term and long term adverse events were noted.

**Results** 20 patients underwent EUS-BD (11 Gallbladder cancer, 7 cholangiocarcinoma and 2 nodal compression). MRCP showed Type I (10), type II (3) and Type III (7). All seven type III blocks were referred after cholangitis following ERCP and right duct stenting. All type I and Type II patients were referred to us for EUS-BD following a failed ERCP. EUS-guided Hepaticogastrostomy (HGS) was done in 10 patients, EUS-guided Antegrade stenting was done in 8 patients, and EUS-guided rendezvous with plastic stenting was done in two patients (financial reasons). All procedures except one (HGS) were successful. One HGS stent migrated inwards and needed a percutaneous drainage. There were no other major complications. Three patients had transient pain for 24 hours. All patients with prior cholangitis improved. On follow up, 7 stents (3 HGS, 2 antegrade, two plastic) blocked at a median follow up of 6 months. Partial migration of HGS stents was seen in 8 patients (5 HGS, 3 Antegrade) although all these stents continued to function.

**Conclusions** EUS-BD provides a safe and effective medium term palliation of malignant obstructive jaundice in patients with malignant hilar obstruction and failed/partial drainage by ERCP.

## eP425V EUS-GUIDED GALLBLADDER DRAINAGE TO THE RESCUE IN A PATIENT THAT RECOVERED FROM COVID-19

**Authors** [Armellini E<sup>1</sup>](#), [Rubertà F<sup>2</sup>](#), [Pezzoli I<sup>2</sup>](#), [Macchini F<sup>1</sup>](#), [Iaculli E<sup>2</sup>](#), [Vescovi L<sup>2</sup>](#), [Piazzini Albani A<sup>2</sup>](#), [Pace F<sup>1</sup>](#)

**Institute** 1 ASST-Bergamoest - "Bolognini" Community Hospital, Gastroenterology Department, Seriate, Italy; 2 ASST-Bergamoest - "Bolognini" Community Hospital, Surgery Department, Seriate, Italy

**DOI** [10.1055/s-0041-1724915](https://doi.org/10.1055/s-0041-1724915)

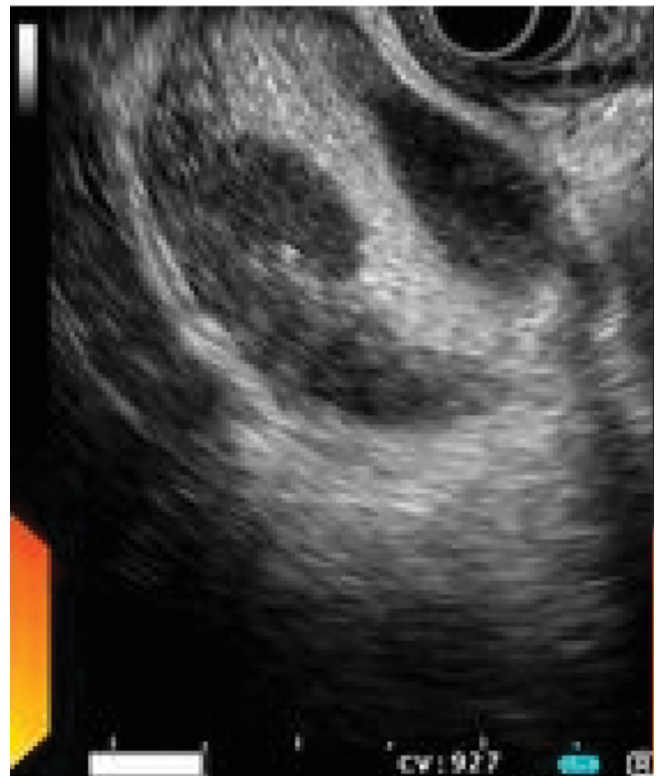
**Citation** Armellini E, Rubertà F, Pezzoli I et al. eP425V EUS-GUIDED GALLBLADDER DRAINAGE TO THE RESCUE IN A PATIENT THAT RECOVERED FROM COVID-19. *Endoscopy* 2021; 53: S235.

The COVID-19 pandemic has rapidly affected every country and overwhelmed many healthcare systems. Intensive care treatment may be needed for extended durations. Patients experience consequences of respiratory illness and post-intensive care illness (1,2).

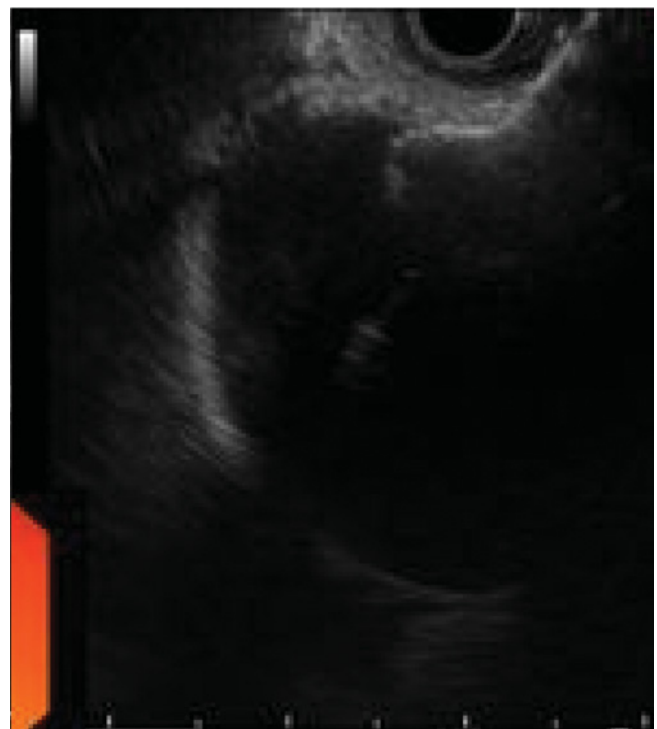
Endoscopic procedures, such as endoscopic ultrasound-guided gallbladder transmural drainage, can reduce surgical interventions, intensive-care admissions, and long-term complications (3).

EUS-guided gallbladder drainage is efficient and safe, with a low rate of adverse events.

A 54-year-old man, recently recovered from severe COVID-19+ pneumonia and still judged unfit for further intubation, was treated by EUS-guided gallbladder drainage for severe acute cholecystitis by a 10x15-mm electrocautery-enhanced lumen-apposing stent.

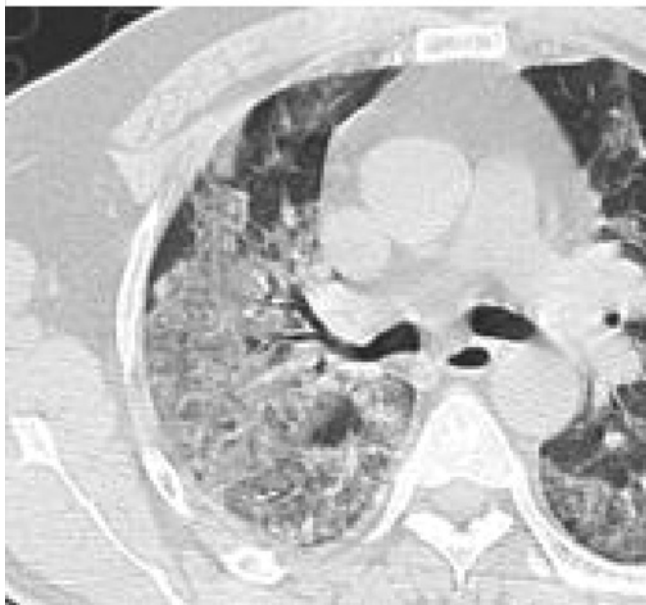


► **Fig. 1** Endoscopic ultrasound imaging showing acute cholecystitis.



► **Fig. 2** Lung CT-scan showing findings related to COVID-19: areas of bilateral ground-glass pattern associated with consolidation in the posterior parts of the lower lobes.





► **Fig. 3** Lung CT-scan: after 8 weeks residual fibrotic streaks and bronchiectasis in area of previous parenchymal consolidation are still evident.



► **Fig. 4** Internal flange of the lumen apposing metal stent in the gastric antrum.

### eP426 EUS-GUIDED BILIARY DRAINAGE (EUS-BD) WITH LUMEN APPOSING METAL STENT (LAMS) FOR UNRESECTABLE MALIGNANT BILIARY OBSTRUCTION (MBO) AFTER ERCP FAILURE: SINGLE-CENTER REAL-LIFE RETROSPECTIVE-STUDY WITH MALDEPLOYMENT MANAGEMENT

Authors Di Mitri R<sup>1</sup>, Amata M<sup>1</sup>, Mocciaro F<sup>1</sup>, Bonaccorso A<sup>1</sup>, Conte E<sup>1</sup>, Lo Mastro M<sup>1</sup>, Scimeca D<sup>1</sup>

Institute 1 ARNAS Civico Hospital, Gastroenterology and Digestive Endoscopy, Palermo, Italy

DOI 10.1055/s-0041-1724916

Citation Di Mitri R, Amata M, Mocciaro F et al. eP426 EUS-GUIDED BILIARY DRAINAGE (EUS-BD) WITH LUMEN APPOSING METAL STENT (LAMS) FOR UNRESECTABLE MALIGNANT BILIARY OBSTRUCTION (MBO) AFTER ERCP FAILURE: SINGLE-CENTER REAL-LIFE RETROSPECTIVE-STUDY WITH MALDEPLOYMENT MANAGEMENT. *Endoscopy* 2021; 53: S235.

**Aims** EUS-BD with LAMS is a mini-invasive modality treatment for jaundice palliation in distal MBO not amenable to ERCP, with good efficacy and not insignificant reported Adverse Events (AEs) rate.

**Methods** From January 2015 to December 2019, we retrospectively enrolled all the EUS-BDs with electrocautery-enhanced-LAMS (AXIOS-EC™, Boston Scientific) for biliary decompression in unresectable MBO and failed ERCP. Our primary study aims were to evaluate the technical (clinical success and AEs rate). In case of maldeployment, we estimate the efficacy of an intra-operative Rescue Therapy (RT). Secondary aims were jaundice's recurrence and Gastric Outlet Obstruction (GOO) treatment with uncovered Self-Expandable-Metal-Stent (u-SEMS – Wallflex, Boston Scientific).

**Results** Thirty-six EUS-BDs were enrolled over a cohort of 738 patients (ERCP cannulation failure rate: 2.8%): 31 choledocho-duodenostomy (EUS-CDS) and 5 cholecisto-gastrostomy. A pre-loaded guidewire was systematically inserted in case of common bile duct (CBD)  $\leq 15$ mm or scope instability for a safe/preventive biliary entryway. Mean CBD diameter:  $16,03 \pm 3,59$  mm. Technical success was 80.6% with 7 cases of maldeployment during EUS-CDS with LAMS's first flange release outside the CBD wall into the abdominal cavity, successfully (100% efficacy) treated with a Fully-Covered-SEMS (FC-SEMS).

Same-session duodenal u-SEMS placement was executed in 16/36 patients with optimal GOO management. Definitive clinical success was 100%. Other AEs weren't observed.

**Conclusions** EUS-BD with LAMS is effective for jaundice palliation in unresectable MBO after "high-quality" ERCP failure. Our technical success was undermined by intra-procedural maldeployment that remains a serious complication with fatal evolution if not correctly recognized/managed. RT, using variable accessories and devices from different interventional specialties, must be promptly applied especially in tertiary-care centers where endoscopists must be high-skilled in EUS/ERCP/stenting. Complete pre-operative evaluation with minimum echoendoscope angulation, smaller-fit-size LAMS and pre-loaded guidewire are key points when a salvage EUS-BD is required in condition of  $\text{CBD} \leq 15$ mm, unlike LAMS delivery catheter malfunction or scope instability.

► Tab. 1

<b>Overall LAMS size (n%):</b>	6x8 mm (1/2,8%); 8x8 mm (24/66,7%); 10x10 mm (9/25%); 15x10 mm (2/5,6%).
<b>Use of guidewire:</b>	10 cases (8 with CBD diameter ≤ 15mm and 2 CBD diameter >15mm for scope instability and unexpected LAMS delivery catheter malfunction).
<b>CBD diameter and LAMS size in maldeployment:</b>	≤15mm and 8x8mm Axios-stent in 6 cases and 24mm and 10x10mm Axios-stent in 1 case.
<b>Rescue therapy for maldeployment (60x10 mm or 80x10 mm FC-SEMS placement after complete LAMS removal):</b>	Over-the-wire endoscopic deployment through the novel fistula tract (5/7). Transpapillary percutaneous-transhepatic-endoscopic rendezvous* (1/7) and transpapillary laparoscopic-endoscopic rendezvous* (1/7) *due to the immediate decompression of the biliary system after the puncture with loss of CBD wall's tone and so a not clear/valid ultrasonographic window.
<b>Overall pre-operative and after 2-weeks bilirubin levels:</b>	13,39±4,8 mg/dl vs 2,75±3,04 mg/dl

## eP427 EUS-GUIDED GALLBLADDER DRAINAGE USING LUMEN-APPPOSING METAL STENT AS RESCUE TREATMENT FOR MALIGNANT DISTAL BILIARY OBSTRUCTION: A LARGE MULTICENTER EXPERIENCE

**Authors** Binda C<sup>1</sup>, Anderloni A<sup>2</sup>, Fugazza A<sup>2</sup>, Amato A<sup>3</sup>, de Nucci G<sup>4</sup>, Redaelli A<sup>5</sup>, Di Mitri R<sup>6</sup>, Cugia L<sup>7</sup>, Pollino V<sup>8</sup>, Macchiarelli R<sup>9</sup>, Mangiavillano B<sup>10</sup>, Forti E<sup>11</sup>, Brancaccio ML<sup>12</sup>, Badas R<sup>13</sup>, Maida M<sup>14</sup>, Sinagra E<sup>15</sup>, Repici A<sup>2,16</sup>, Fabbri C<sup>1</sup>, Tarantino I<sup>17</sup>

**Institute** 1 AUSL Romagna, Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, Forlì-Cesena, Italy; 2 Humanitas Clinical and Research Center - IRCCS, Digestive Endoscopy Unit, Rozzano (MI), Italy; 3 Valduce Hospital, Department of Gastroenterology, Como, Italy; 4 ASST Rhodense, Gastroenterology and Endoscopy Unit, Garbagnate Milanese (MI), Italy; 5 San Gerardo Hospital, Endoscopy Unit, Monza, Italy; 6 ARNAS Civico Hospital, Gastroenterology and Endoscopy Unit, Palermo, Italy; 7 Azienda Ospedaliero Universitaria Sassari, Division of Gastroenterology and Digestive Endoscopy, Department of Emergency, Sassari, Italy; 8 S. Michele Hospital, Digestive Endoscopy Unit, Cagliari, Italy; 9 A.O.U.S. Policlinico S.Maria alle Scotte, Gastroenterology Unit, Siena, Italy; 10 Humanitas - Mater Domini, Gastrointestinal Endoscopy Unit, Castellanza, Italy; 11 Ospedale Ca' Granda Niguarda, Digestive and Interventional Endoscopy Unit, Milano, Italy; 12 S. Maria delle Croci Hospital, Division of Gastroenterology, Ravenna, Italy; 13 University Hospital, Digestive Endoscopy Unit, Cagliari, Italy; 14 S. Elia-Raimondi Hospital, Gastroenterology and Endoscopy Unit, Caltanissetta, Italy; 15 Fondazione Istituto G. Giglio, Gastroenterology and Endoscopy Unit, Cefalù, Italy; 16 Humanitas University, Department of Biomedical Sciences, Pieve Emanuele, Milano, Italy; 17 IRCCS-ISMETT, Endoscopy Service, Department of Diagnostic and Therapeutic Services, Palermo, Italy  
**DOI** 10.1055/s-0041-1724917

**Citation** Binda C, Anderloni A, Fugazza A et al. eP427 EUS-GUIDED GALLBLADDER DRAINAGE USING LUMEN-APPPOSING METAL STENT AS RESCUE TREATMENT FOR MALIGNANT DISTAL BILIARY OBSTRUCTION: A LARGE MULTICENTER EXPERIENCE. *Endoscopy* 2021; 53: S237.

**Aims** Evaluation of safety and effectiveness of endoscopic ultrasound-guided gallbladder (EUS-GBD) with lumen apposing metal stent (LAMS) as a rescue treatment for the relief of jaundice in patients with malignant distal biliary

obstruction (MDBO) and failure both of endoscopic retrograde cholangiopancreatography (ERCP) and EUS-guided choledochoduodenostomy (EUS-CDS).

**Methods** This is a multicenter, retrospective analysis including all consecutive cases of EUS-GBD with LAMS performed as rescue treatment in patients with MDBO in 14 Italian Centers from June 2015 to June 2020.

Primary endpoints were technical and clinical success, defined as the proper LAMS positioning and a drop of bilirubin of at least 50% after two weeks respectively. Secondary endpoint was the adverse events (AEs) rate.

**Results** A total of 48 patients (52.1% female) with a mean age of 74.3 ± 11.7 were included in the study. Biliary stricture was related to pancreatic adenocarcinoma (85.4%), duodenal adenocarcinoma (2.1%), cholangiocarcinoma (4.2%), ampullary cancer (2.1%), colon cancer (4.2%) and metastatic breast cancer (2.1%). LAMS were placed transgastric in 58.3% of cases and transduodenal in 41.7%. Technical success was 100%, while clinical success was 81.3%, with a mean total bilirubin reduction after two weeks of 66.5%. Mean hospital stay was 9.2 ± 8.2 days. Adverse events occurred in 5/48 pts (10.4%) (two mild and three moderate according to ASGE lexicon). AEs were classified as intraprocedural in three cases and delayed (more than 15 days) in two cases. The mean follow-up was 122±161 days.

**Conclusions** The results of our study show that EUS-GBD with LAMS performed as rescue treatment in patients with MDBO has a high technical and clinical success rates, with an acceptable AEs rate and could be considered as a valuable alternative therapeutical approach in this setting of patients. To the best of our knowledge this is the largest study concerning this procedure.

## eP428 IS EUS-GUIDED HEPATICOGASTROSTOMY EFFICIENT IN HILAR BILIARY STRICTURE INDUCED BY BILE DUCT CANCER?

**Authors** Schoch A<sup>1</sup>, Lisotti A<sup>2,3</sup>, Fumex F<sup>4</sup>, Leblanc S<sup>4</sup>, Artru P<sup>5</sup>, Desrame J<sup>5</sup>, Marsot J<sup>6</sup>, Souquet J<sup>7</sup>, Napoleon B<sup>8</sup>

**Institute** 1 Université de Lyon, Gastro Enterology, Lyon, France; 2 University of Bologna, Gastro Enterology, Bologna, Italy; 3 Hopital Privé Mermoz, Lyon, France; 4 Hopital Privé Mermoz, Gastro Enterology, Lyon, France; 5 Hopital Privé Mermoz, Oncologie, Lyon, France; 6 Hopital Privé Mermoz, Radiologie, Lyon, France; 7 Hopital de la Croix Rousse, Gastro Enterology, Lyon, France; 8 Hopital Privé Mermoz, Gastro Enterology, Lyon, France  
**DOI** 10.1055/s-0041-1724918

**Citation** Schoch A, Lisotti A, Fumex F et al. eP428 IS EUS-GUIDED HEPATICOGASTROSTOMY EFFICIENT IN HILAR BILIARY STRICTURE INDUCED BY BILE DUCT CANCER? *Endoscopy* 2021; 53: S237.

**Aims** To evaluate the clinical outcomes of patients affected by bile duct cancers (BDC) involving the liver hilum treated with EUS-guided hepaticogastrotomy (EUS-HGS).

**Methods** A retrospective analysis of a prospectively-collected database was performed, retrieving all patients with BDC involving the liver hilum who underwent EUS-HGS from July 2010 to January 2020. Primary outcome of the study was clinical success rate; secondary outcomes were technical success rate, adverse events and the oncological outcomes. Survival was expressed as median [95% C.I.]. Kaplan-Meier curve and Cox proportional-hazards regression were analysed to identify variables related to survival.

**Results** Thirty-four patients (50% males, 75-year-old) were included; 24 (70.6%) presented with distant metastasis. Indications for EUS-HGS were ERCP failure (64.7%), duodenal stricture (23.5%), post-surgical modified anatomy (5.9%) and dilation limited to left intrahepatic duct (5.9%). Technical success rate was 97.1%. Clinical success rate was 64.7%. Four (11.8%) patients underwent percutaneous drainage because of technical failure (no.1) or persistent cholangitis (no.3). Nine (26.5%) patients presented adverse events, that in 2 cases led to death (bleeding and bile leakage).

Stent dysfunction was reported in 6 (17.6%) cases (patency: 235 [202-425] days). Median overall survival was 91 [40-263] days. In case of EUS-HGS clinical success, a significantly longer survival (178 [61-393] vs 15 [7-324] days;

$P < 0.001$ ) was obtained. Before enrolment, 25 patients (73.5%) were fit for chemotherapy; of them, 17 (68.0%) had access to a systemic treatment, leading to a significantly longer survival (324 [178-439] vs 40 [9-61];  $P < 0.001$ ).

On multivariate analysis, EUS-HGS clinical success (Exp(b) 0.23[0.09-0.60];  $P = 0.003$ ) and chemotherapy [Exp(b) 0.07[0.02-0.23];  $P < 0.001$ ] were independently related to prolonged survival.

**Conclusions** EUS-HGS is technically and clinically effective in patients with hilar cholangiocarcinoma despite a not negligible rate of adverse event. The achievement of clinical success, potentially leading to jaundice resolution and access to chemotherapy, significantly impacts patients' survival.

## eP429 RISK FACTORS FOR A SUCCESSFUL EUS-GUIDED HEPATICOGASTROSTOMY USING A PRE-ESTABLISHED ENDOSCOPIC PROTOCOL

**Authors** Perez-Cuadrado Rpbles E<sup>1</sup>, Benosman H<sup>2</sup>, Perrod G<sup>2</sup>, Coffin E<sup>3</sup>, Gallois C<sup>4</sup>, Ragot E<sup>5</sup>, Cellier C<sup>2</sup>, Rahmi G<sup>2</sup>

**Institute** 1 Georges-Pompidou European Hospital, Gastroenterology, Paris, France; 2 Georges-Pompidou European Hospital, Gastroenterology, PARIS, France; 3 Georges-Pompidou European Hospital, Paris, France; 4 Georges-Pompidou European Hospital, Oncology, Paris, France; 5 Georges-Pompidou European Hospital, Surgery, Paris, France

DOI 10.1055/s-0041-1724919

**Citation** Perez-Cuadrado Rpbles E, Benosman H, Perrod G et al. eP429 RISK FACTORS FOR A SUCCESSFUL EUS-GUIDED HEPATICOGASTROSTOMY USING A PRE-ESTABLISHED ENDOSCOPIC PROTOCOL. *Endoscopy* 2021; 53: S238.

**Aims** Endoscopic ultrasound (EUS)-guided hepaticogastrostomy is a challenging alternative to endoscopic retrograde cholangiopancreatography (ERCP). However, there is no consensus on how to perform the technique to decrease morbidity and mortality. To assess the risk factors to success or complications using a pre-established protocol.

**Methods** This is a prospective single-center study. All patients with a malignant biliary obstruction who underwent EUS-guided hepaticogastrostomy in 2019-2020 were included. A pre-established protocol depending on anatomic/technical characteristics was used. Technical success was retained when the stent was correctly placed. Clinical success was defined as the improvement of sepsis/cholangitis in 72h. Complications were considered. Risk factors for all outcomes were assessed by multivariate analysis.

**Results** Twenty-six patients (mean age: 68.5±15.9yr, 65.4% male) with a malignant duodenal stenosis (n=17), previous ERCP failure (n=5) or post-surgical anatomy (n=4) were included. A hepaticogastrostomy alone (n=21) or combined with anterograde stenting (n=5) were performed with a median of 1.5 punctures (range: 1-4) by using a 19-gauge (n=23, 88.5%) or 22-gauge needles (n=3, 11.5%). The intrahepatic biliary duct (IHBC) measured a median of 4mm (range: 1.1-10).

Technical and clinical success were achieved in 23 (88.5%) and 19 (73.1%) cases. The complication rate was 23.1% during a median follow-up of 11 weeks (1-46) as follows: peritonitis (n=3, 11.5%), delayed bleeding (n=2, 7.7%) and cholangitis (n=1, 3.8%). The reintervention rate was 19.2%. Mortality was 3.8%.

A distance >2cm between the IHBC and liver margins was associated to clinical success ( $p = 0.008$ ) and lower reintervention rate ( $p = 0.027$ ). The IHBC >3mm was associated to a higher technical success ( $p = 0.027$ ), clinical success ( $p = 0.003$ ) and lower reintervention rate ( $p = 0.012$ ). The presence of ascites was associated to peritonitis (66.7% vs. 33.3%,  $p = 0.001$ ).

**Conclusions** EUS-guided gastrostomy is an effective alternative to ERCP. The understanding of risk factors to complications is essential to accurately select the patients and decrease morbidity and mortality.

## eP430 DESIGN AND VALIDATION OF A LIVE ANIMAL MODEL FOR THERAPEUTIC ENDOSCOPIC ULTRASOUND (EUS) TRAINING PROGRAM. TAKING TRAINING TO A NEXT LEVEL

**Authors** Sosa Valencia L<sup>1</sup>, Huppertz J<sup>2</sup>, Wanert F<sup>3</sup>, Haberzsetzer F<sup>2</sup>, Swanström L<sup>1</sup>

**Institute** 1 IHU, Endoscopy, Strasbourg, France; 2 IHU, NHC, Strasbourg, France; 3 IHU, Veterinarian, Strasbourg, France

DOI 10.1055/s-0041-1724920

**Citation** Sosa Valencia L, Huppertz J, Wanert F et al. eP430 DESIGN AND VALIDATION OF A LIVE ANIMAL MODEL FOR THERAPEUTIC ENDOSCOPIC ULTRASOUND (EUS) TRAINING PROGRAM. TAKING TRAINING TO A NEXT LEVEL. *Endoscopy* 2021; 53: S238.

**Aims** EUS used for tumor staging has evolved into a therapeutic modality, transforming surgical procedures into minimally endoscopic treatments. Mentoring, live demonstrations, simulators, ex-vivo models/phantoms are the current teaching methods for therapeutic EUS (TEUS). Need's to improve this training has been proposed.

To create and evaluate a high-fidelity simulated live animal model (HiFi SAM) for training interventional endoscopists in TEUS during a course called ITEC.

**Methods** We designed a training curriculum for TEUS that uses HiFi SAM and enables trainees working in paired groups per EUS working station to perform many realistic procedures during 3 days with expert mentorship. We addressed several aspects: EUS workstation, advance trainee profile, HiFiSAM, animal ethics, animal preparation and drug administration, surgical preparation, EUS guided therapeutic procedures, course quality analysis and structure.

**Results** 3 courses were performed between 2019 and 2020. 27 trainees (with different backgrounds) and 18 professors participated. Each 3-day program had 6 hours of theoretical conferences with clinical cases and 14 hours of hands-on training using ex-vivo models and HiFi SAM (IHU-Strasbourg) models on our experimental platform.

616 procedures were done and 264 (43%) were evaluated with a mean of 88 per course. (range between 80-95). 22 (range: 20-25) TEUS procedures were defined for each HiFi SAM.

91% (240/264) of the procedures were completed successfully. In 24 procedures, success was not achieved due to technical and/or model problems. General quality of HiFi SAM was: 71% had an excellent rating (scale 8-10) and excellent/good in 95% of the assessment forms.

Evaluations were (0-5): FNB: 4.79; radiofrequency: 4.76; biliary/cystic/hepatogastric drainages: 4.75/4.72/4.04, micro-biopsy: 4.50, with an overall satisfaction rate of 4.56 (91%).

66% of the trainees started a new procedure and/or noted improvement in previous ones.

**Conclusions** HiFi SAM is a complex model. Professors and trainees were satisfied with this new curriculum

## eP431V EUS DIRECTED TRANSGASTRIC ERCP (EDGE) WITH DIRECT CHOLANGIOSCOPY FOR ENDOSCOPIC MANAGE OF COMMON BILE DUCT STRICTURE IN A PATIENT WITH GASTRIC BY-PASS COMPLICATIONS

**Authors** Puig M<sup>1</sup>, Iborra I<sup>1</sup>, Marín I<sup>1</sup>, Caballero N<sup>1</sup>, Uchima H<sup>1</sup>, Gené Skrabec C<sup>2</sup>, Matallana C<sup>2</sup>, Caballero A<sup>2</sup>, Colan-Hernandez J<sup>1</sup>, Moreno Santabárbara P<sup>2</sup>, Moreno de Vega V<sup>1</sup>

**Institute** 1 Hospital Universitari Germans Trias i Pujol, Servicio Aparato Digestivo, Badalona, Spain; 2 Hospital Universitari Germans Trias i Pujol, Servicio Cirugía General, Badalona, Spain

DOI 10.1055/s-0041-1724921

**Citation** Puig M, Iborra I, Marín I et al. eP431V EUS DIRECTED TRANSGASTRIC ERCP (EDGE) WITH DIRECT CHOLANGIOSCOPY FOR ENDOSCOPIC MANAGE OF

COMMON BILE DUCT STRICTURE IN A PATIENT WITH GASTRIC BY-PASS COMPLICATIONS. *Endoscopy* 2021; 53: S238.

**Background and clinical case** Biliary therapy is challenging in bariatric surgery. EUS allows biliary access.

Male patient with gastric bypass developed complications including gastrogastroic fistula non amendable for Duodenoscopy and bile duct stricture.

**Endoscopic findings** Free hand EDGE with LAMS (Hot Axios 20 x 10 mm). A deferred ERCP described a common hepatic duct stricture drained by plastic stent. A second ERCP for cholangitis with cholangioscopy (Spy Glass DS II) observing a common duct lesion (biopsies pending) and assisting successful metallic covert stent drainage.

**Conclusions** Biliary disease in bariatric surgery could be approachable with complex therapy mixing EDGE and cholangioscopy.

## eP432V A LIVE ANIMAL SIMULATED MODEL FOR LEARNING THERAPEUTIC ENDOSCOPIC ULTRASOUND. TRAINING IN A FAST AND COMPLETE COURSE

**Authors** Sosa-Valencia L<sup>1</sup>, Huppertz J<sup>2</sup>, Wanert F<sup>1</sup>, Habersetzer F<sup>1</sup>, Swanström L<sup>1</sup>

**Institute** 1 Institut of Image Guided Surgery IHU, EchoEndoscopy, Strasbourg, France; 2 IHU, Endoscopy, Strasbourg, France

**DOI** 10.1055/s-0041-1724922

**Citation** Sioulas A, Spinou M, Papadaki K et al. eP432V A LIVE ANIMAL SIMULATED MODEL FOR LEARNING THERAPEUTIC ENDOSCOPIC ULTRASOUND. TRAINING IN A FAST AND COMPLETE COURSE. *Endoscopy* 2021; 53: S239.

3 courses were performed between 2019 and 2020. 27 trainees and 18 professors participated. Each program had 14 hours of hands-on training using ex-vivo models and high fidelity simulated animal on our experimental platform. 616 procedures were done and 264 (43%) were evaluated with a mean of 88 per course. (range between 80-95). 22 (range: 20-25) TEUS procedures were defined for each model.

91% (240/264) of the procedures were completed successfully. In 24 procedures, success was not achieved due to technical and/or model problems. General quality of the model was: excellent and good in 95% of the evaluations.

## eP433 MODIFIED ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS TECHNIQUE FOR FASTER AND SAFER ACCESS TO NARROW BILE DUCT: FEASIBILITY ASSESSMENT STUDY

**Authors** Samanta J<sup>1</sup>, Muktesh G<sup>1</sup>, Chowdhury A<sup>1</sup>, Kumar H<sup>2</sup>, Gupta V<sup>2</sup>, Yadav TD<sup>2</sup>, Kochhar R<sup>1</sup>

**Institute** 1 Post Graduate Institute of Medical Education and Research, Chandigarh, Gastroenterology, Chandigarh, India; 2 Post Graduate Institute of Medical Education and Research, Chandigarh, GI Surgery, Chandigarh, India

**DOI** 10.1055/s-0041-1724923

**Citation** Samanta J, Muktesh G, Chowdhury A et al. eP433 MODIFIED ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS TECHNIQUE FOR FASTER AND SAFER ACCESS TO NARROW BILE DUCT: FEASIBILITY ASSESSMENT STUDY. *Endoscopy* 2021; 53: S239.

**Aims** Endoscopic ultrasound (EUS) guided rendezvous technique (EUS-RV) is one of the salvage techniques for biliary access in cases of failed ERCP. Extra-hepatic approach with tapered lower end of common bile duct (CBD) can be technically challenging. We evaluated a modification of the trans-duodenal technique in benign biliary disease with narrow lower CBD.

**Methods** Patients with benign biliary disease and tapered lower end CBD with failed ERCP were included. EUS-guided puncture of the narrow caliber CBD was done from D1-D2 junction in straight scope position with a 19-G flexible nitinol needle, to expedite guidewire negotiation. The tip of the needle, in the CBD, was ascertained through EUS image alone. Contrast was not injected, to prevent cholangitis in case of failed procedure. Bile aspiration was not done to prevent collapse of the narrowed CBD. Guidewire (0.025") was negotiated, using

the EUS and fluoroscopy view, across the papilla. Scope was then exchanged and ERCP completed. Parameters such as technical success, time taken from CBD puncture to wire negotiation across papilla, radiation dose, adverse events were noted.

**Results** A total of 10 cases (8 females; 80%), with a mean age of 56.10 ± 3.4 yrs., with failed ERCP were included. Of them, 6 (60%) had stone disease, 3 (30%) had lower CBD benign strictures and 1 had postoperative bile leak. The median lower CBD diameter was 3.5 mm (2.6-6). Technical success was achieved in all. The median time taken from CBD puncture to wire negotiation was 1.13 min (0.15-18.0) with a median radiation dose of 286.5 µGy (10-1225). The time taken for deep CBD cannulation in subsequent ERCP was 2.00 min (0.30-15.00). No adverse events including post-ERCP pancreatitis were documented.

**Conclusions** This modified technique of EUS-RV enables efficient, rapid, and safe biliary access in cases of narrowed CBD without the need for contrast injection or bile aspiration.

## eP434 ENDOSCOPIC ULTRASONOGRAPHY-GUIDED BILIARY INTERVENTION IS SAFE AND EFFECTIVE IN PRE-COMORBID PATIENTS WITH MODERATE/SEVERE CHOLANGITIS: A TERTIARY CARE CENTER EXPERIENCE

**Authors** Samanta J<sup>1</sup>, Muktesh G<sup>1</sup>, Dhar J<sup>1</sup>, Bellum BL<sup>1</sup>, Agarwala R<sup>1</sup>, Gupta P<sup>1</sup>, Yadav TD<sup>2</sup>, Gupta V<sup>2</sup>, Sinha SK<sup>1</sup>, Kochhar R<sup>1</sup>

**Institute** 1 Post Graduate Institute of Medical Education and Research, Gastroenterology, Chandigarh, India; 2 Post Graduate Institute of Medical Education and Research, GI Surgery, Chandigarh, India

**DOI** 10.1055/s-0041-1724924

**Citation** Samanta J, Muktesh G, Dhar J et al. eP434 ENDOSCOPIC ULTRASONOGRAPHY-GUIDED BILIARY INTERVENTION IS SAFE AND EFFECTIVE IN PRE-COMORBID PATIENTS WITH MODERATE/SEVERE CHOLANGITIS: A TERTIARY CARE CENTER EXPERIENCE. *Endoscopy* 2021; 53: S239.

**Aims** Although endoscopic retrograde cholangiopancreatography (ERCP) is the first-line approach for endoscopic biliary access, it might fail or might not be feasible. Endoscopic ultrasonography-guided biliary drainage (EUS-BD) is used as a salvage procedure but is fraught with technical hurdles. Data on its safety in patients with comorbidities and cholangitis is limited and is the aim of this study.

**Methods** Patients with cholangitis with failed ERCP/inaccessible papilla underwent various types of EUS-BD techniques such as hepatico-gastrostomy (HGS), antegrade drainage (AG), choledocho-duodenostomy (CDS), and rendezvous procedure (RV) as per indications. Technical success defined as successful placement of stent or wire. Clinical success was defined as improvement in cholangitis. Effective drainage defined as a reduction in the serum bilirubin to <50% after 2 weeks. Various co-morbidities were noted. Outcome parameters and adverse events were documented.

**Results** 29 patients (15 female (51.7%); mean age 51.9±9.6 years) with cholangitis underwent EUS-BD, of which 22 (75.9%) had malignant obstruction. 16 (55.2%) patients had severe cholangitis, while rest had moderate cholangitis. The mean CCI score among malignant cases was 7.13 ±1.4. Uncorrected coagulopathy was present in 17 (58.6%) cases. All hilar malignancies (14; 63.6%) had non-patent primary confluence with high grade (type 3a/3b) block in 10 (71.4%). Technical success was noted in 27 (93.1%) with 100% success in malignant cases. Clinical success was seen in 26 (89.7%) cases while effective drainage noted in 23 (79.3%) cases. Adverse events documented in 5 cases (17.2%); 3 had minor bleeding events not requiring blood transfusion and 1 had wire-related perforation. Only 1 case had aggravation of cholangitis requiring additional radiological drainage but expired.

**Conclusions** EUS-BD is a safe and effective mode of salvage biliary access in patients with moderate to severe cholangitis, even with pre-comorbid conditions, with good technical & clinical success and acceptable complication rates.



▶ Tab. 1

Procedures performed	Underlying conditions	Type of block
<b>Hepaticogastrotomy</b> (n = 15)	Pancreatic cancer – 3 Carcinoma gall bladder- 10 Periampullary carcinoma – 1 Carcinoma stomach - 1	Type 2 – 5 Type 3a -6 Type 3b - 4
<b>Antegrade drainage</b> (n = 3)	Pancreatic cancer – 2 Benign stricture - 1	Lower CBD
<b>Choledochoduodenostomy</b> (n = 5)	Pancreatic cancer – 4 Periampullary carcinoma - 1	Lower CBD
<b>Rendezvous procedure</b> (n = 6)	Periampullary diverticulum -3	

### eP435 A MODIFIED “RENDEZVOUS” TECHNIQUE FOR EUS-GUIDED RECANALIZATION OF A RECTAL ANASTOMOTIC STRICTURE WITHOUT FLUOROSCOPY AND STENTING

**Authors** Kypraios D<sup>1</sup>, Manthopoulou E<sup>1</sup>, Dimitroulopoulos D<sup>1</sup>, Katsinelos D<sup>1</sup>, EMichalopoulou E<sup>1</sup>, Marakis I<sup>1</sup>, Sachtouris G<sup>1</sup>, Ioannou A<sup>1</sup>, Plastiras A<sup>2</sup>, Tsamakidis K<sup>1</sup>

**Institute** 1 'St. Savvas' Oncology Hospital of Athens, Department of Gastroenterology, Athens, Greece; 2 'St. Savvas' Oncology Hospital of Athens, Department of Surgery, Athens, Greece

DOI 10.1055/s-0041-1724925

**Citation** Kypraios D, Manthopoulou E, Dimitroulopoulos D et al. eP435 A MODIFIED “RENDEZVOUS” TECHNIQUE FOR EUS-GUIDED RECANALIZATION OF A RECTAL ANASTOMOTIC STRICTURE WITHOUT FLUOROSCOPY AND STENTING. *Endoscopy* 2021; 53: S239.

**Aims** Various endoscopic techniques have been described for the treatment of post-operative colonic strictures. Our aim is to report a solely EUS-guided recanalization procedure for a complete rectal stricture, without the use of fluoroscopy or stenting.

**Methods** A 66-year-old male was submitted to low anterior resection and protective ileostomy for rectal adenocarcinoma, complicated with complete anastomotic stricture 6 months later. The patient was treated with a modified EUS-guided rendezvous technique. A colonoscope was advanced through the ileostomy to the sigmoid colon, which was subsequently filled with water. A linear echoendoscope was advanced transanally to the distal part of the rectal anastomosis. The proximal colon was punctured with a 19G needle and a guidewire was advanced through the needle. The rectocolonic fistula tract was first dilated by graduated dilation catheters. Subsequently, progressive pneumatic dilatation was performed.

**Results** There were no post-procedural complications. At 6-month follow-up the anastomosis was patent, with no significant stricture recurrence.

**Conclusions** A rendezvous technique for EUS-guided recanalization of complete rectal anastomotic strictures is feasible and safe in a non-Radiology

assisted setting. In cases of distal stenoses balloon dilation could effectively serve as the sole treatment, without the adjunct of stent placement.

### eP436 EUS-GUIDED GASTROENTEROSTOMY AS TREATMENT OF BENIGN GASTRIC OUTLET OBSTRUCTION

**Authors** Sánchez-Delgado L<sup>1</sup>, García-Alonso FJ<sup>1</sup>, Chavarría C<sup>1</sup>, Sánchez-Ocana R<sup>1</sup>, Maroto-Martín C<sup>1</sup>, Fuentes-Valenzuela E<sup>1</sup>, Nájera-Muñoz R<sup>1</sup>, de la Serna-Higuera C<sup>1</sup>, Pérez-Miranda M<sup>1</sup>

**Institute** 1 Hospital Universitario Rio Hortega, Endoscopy Unit, Department of Gastroenterology, Valladolid, Spain

DOI 10.1055/s-0041-1724926

**Citation** Sánchez-Delgado L, García-Alonso FJ, Chavarría C et al. eP436 EUS-GUIDED GASTROENTEROSTOMY AS TREATMENT OF BENIGN GASTRIC OUTLET OBSTRUCTION. *Endoscopy* 2021; 53: S240.

**Aims** The role of endoscopic ultrasound-guided gastroenterostomy (EUS-GE) in benign gastric outlet obstruction (GOO) remains unclear. We aimed at evaluating the clinical efficacy and safety of EUS-GE in benign GOO.

**Methods** Case series including consecutive patients presenting with benign GOO who underwent EUS-GE between November 2017 and January 2020 at a single tertiary care center. Demographics, procedural details, post-procedure follow-up and outcome measures were retrospectively retrieved.

**Results** A total of 13 patients, 8 (61.5%) males, median age: 63.8 years (IQR: 50.8-81.9) were included. Baseline characteristics are summarized in table 1. All procedures employed electrocautery enhanced Axios lumen apposing metal stents (LAMS) (Boston, Mass), 15x10mm in 7 (53.8%) patients and 20x10mm in the remaining cases. Median procedure time was 49 minutes (IQR: 34-70), achieving technical success in 12 (92.3%) and clinical success in 9 (69.2%). Three of the four clinical failures died during admission, 2 due to aspiration pneumonia and a third due to a GI bleeding from a drained walled-off necrosis. The fourth clinical failure was a superior mesenteric artery syndrome who presented severe pain after oral intake and presented no improvement after receiving the EUS-GE. Among those reaching clinical success, 4 maintained the stent in situ after a median follow-up of 306 days (range 190-645), 3 (33%) underwent an uneventful scheduled stent removal after a median of 79 days (range 76-110) and 2 (22.2%) presented a clinical relapse after 64 and 195 days, respectively. One patient underwent surgery while the other received a second EUS-GE with a 20x10 mm LAMS.

**Conclusions** EUS-GE reached clinical success in 9 (69.2%) patients. Although clinical relapse was observed in 2 (22.2%) patients, only one required surgery during follow-up.

▶ Tab. 1

Stricture location, n (%)	Duodenum 9 (69.2%) Pylorus 4 (30.8%)
Etiology, n (%)	Peptic 4 (30.8%) Acute pancreatitis 2 (15.4%) Diabetic gastroparesis 2 (15.4%) Idiopathic 2 (15.4%) Other 3 (23.1%)
Previous endoscopic treatment	None 9 (69.2%) SEMS 3 (23.1%) Balloon dilation 1 (7.7%)
Baseline oral tolerance, n (%)	<i>Nil per os</i> 6 (46.2%) Liquid diet 5 (38.5%) Soft diet 2 (15.4%)

## eP437 EUS-GUIDED GASTROENTEROSTOMY WITH A LUMEN APPOSING SELF-EXPANDABLE METAL STENT RELIEVES GASTRIC OUTLET OBSTRUCTION

**Authors** Havre RF<sup>1,2</sup>, Dai C<sup>1</sup>, Roug S<sup>3</sup>, Novovic S<sup>3,4</sup>, Schmidt PN<sup>3</sup>, Feldager E<sup>3</sup>, Karstensen JG<sup>3,4</sup>, Pham KC-D<sup>1,2</sup>

**Institute** 1 Department of Medicine, Haukeland University Hospital, Bergen, Norway; 2 University of Bergen, Department of Clinical Medicine, Bergen, Norway; 3 Copenhagen University Hospital, Hvidovre, Gastro Unit, Copenhagen, Denmark; 4 University of Copenhagen, Department of Clinical Medicine, Copenhagen, Denmark

**DOI** 10.1055/s-0041-1724927

**Citation** Havre RF, Dai C, Roug S et al. eP437 EUS-GUIDED

GASTROENTEROSTOMY WITH A LUMEN APPOSING SELF-EXPANDABLE METAL STENT RELIEVES GASTRIC OUTLET OBSTRUCTION. *Endoscopy* 2021; 53: S241.

**Aims** Gastric outlet obstruction (GOO) leads to dehydration, rapid malnourishment, vomiting and premature death. EUS-guided gastroenterostomy (EUS-GE) with lumen apposing metallic stents (LAMS) in patients with (GOO) has proven to be an alternative to luminal stenting in the duodenum and surgical gastroenterostomy. The method provides symptom relief by restoration of the luminal passage of fluid and nutrients to the small intestine in severely ill patients. Our aims were to assess the technical and clinical success and adverse events of EUS-GE, need for reintervention, and survival time after the procedure.

**Methods** Thirty-three consecutive patients with GOO due to malignant tumors, metastases (n = 27), or benign conditions (n = 6) were included in this retrospective study of technical and clinical outcome. EUS-GE procedures were performed with cautery enhanced LAMS guided by EUS and fluoroscopy under general anesthesia or conscious sedation in two tertiary centers from 2016-2020.

**Results** Technical success was achieved in 33 patients (100%). Median procedure time was 76 minutes and median hospital stay was three days (range 1-3). Thirty (91%) patients were able to resume oral nutrition after the procedure. Ten patients (30%) experienced adverse events (AEs) including migration of the stent, bleeding, and infection. Four patients had fatal AEs (12%). These included two respiratory infections, one bleeding, and one case of re-feeding syndrome. All stent related AEs were handled endoscopically. Four patients (12%) needed re-intervention. The median survival time for patients with malignant obstruction was 8.5 weeks (0.5-76), and 13 patients lived more than 12 weeks.

**Conclusions** EUS-GE is a minimally invasive and efficient method for restoration of the gastrointestinal passage and may improve palliative care for patients with GOO. The procedure carries a risk for severe AEs and should be performed in expert centers

## eP438 LONG-LASTING LUMEN APPOSING METAL STENTS IN THE MANAGEMENT OF BILIARY DISORDERS IN EXCLUDED JEJUNAL LIMB: LONG TERM RESULTS AND ADVERSE EVENTS

**Authors** Spota A<sup>1</sup>, Cereatti F<sup>1</sup>, Derhy S<sup>2</sup>, Donatelli G<sup>1</sup>

**Institute** 1 Hôpital Privé des Peupliers, Ramsay Santé, Unité d'Endoscopie Interventionnelle, Paris, France; 2 Hôpital Privé des Peupliers, Ramsay Santé, Unité de Radiologie Interventionnelle, Paris, France

**DOI** 10.1055/s-0041-1724928

**Citation** Spota A, Cereatti F, Derhy S et al. eP438 LONG-LASTING LUMEN APPOSING METAL STENTS IN THE MANAGEMENT OF BILIARY DISORDERS IN EXCLUDED JEJUNAL LIMB: LONG TERM RESULTS AND ADVERSE EVENTS. *Endoscopy* 2021; 53: S241.

**Aims** The endoscopic ultrasound (EUS)-guided positioning of lumen apposing metal stents (LAMS) allows the creation of endoscopic anastomosis of the digestive tract (EDA) to have access to the surgically excluded biliary tract in patients with biliary disorders and previous foregut surgeries.

This study analyzes a series of EDA with LAMS permanent placement at long follow-up.

**Methods** Patients who received a EUS-guided EDA between January 2017 and September 2020 were retrospectively analyzed.

After the EUS-guided location of the excluded loop, the endoscopic anastomosis was performed through direct LAMS placement (EUS-direct) or after a previous opacification with a 19gauge endoscopic needle (19G) or through an endoscopic-radiologic rendez-vous (RDV) from a percutaneous-transhepatic-biliary-drainage (PTBD). Multiple endoscopic retrograde cholangiographies were then performed to treat the biliary disorder using the EDA as permanent access. Patients with clinical success underwent an annual follow-up being LAMS removal scheduled at 5 years for benign pathologies and not scheduled for malignant pathologies.

**Results** Twenty-two patients underwent 2 gastro-jejunal, 15 duodeno-jejunal and 5 jejuno-jejunal anastomoses (seven EUS -direct, two 19G and twelve RDV).

Twelve patients (54.5%) ended the biliary disorder treatment, 2 patients (9.1%) had technical failure and 8 patients (36.4%) are still under treatment.

At a median follow-up of 521.5 days there were 4 adverse events: 1 LAMS was not found at endoscopic control, persisting a 6mm diameter anastomosis, reopened through a diabolo-shaped stent; 2/2 gastrojejunal anastomosis presented buried LAMS which were replaced with diabolo-shaped stents; 1 intraoperative displacement of the duodenojejunal LAMS was solved by removing it, clipping the jejunal side with an over-the-scope-clip and draining the duodenal side through a PTBD.

**Conclusions** Despite the need to develop a standard technique, long-term LAMS placement for a permanent access to chronic biliary disorders is feasible and safe. In our experience, gastro-jejunal anastomosis have a higher risk of adverse events.

## eP439 IMPACT ON NUTRITIONAL STATUS OF EUS-GUIDED GASTROENTEROSTOMY IN PATIENTS WITH A MALIGNANT DUODENAL STENOSIS

**Authors** Perez-Cuadrado Robles E<sup>1</sup>, Perrod G<sup>1</sup>, Benosman H<sup>1</sup>, Moati E<sup>2</sup>, Coffin E<sup>3</sup>, Taieb J<sup>2</sup>, Cellier C<sup>3</sup>, Rahmi G<sup>3</sup>

**Institute** 1 Georges-Pompidou European Hospital, Gastroenterology, Paris, France; 2 Georges-Pompidou European Hospital, Oncology, Paris, France; 3 Georges-Pompidou European Hospital, Gastroenterology, PARIS, France

**DOI** 10.1055/s-0041-1724929

**Citation** Perez-Cuadrado Robles E, Perrod G, Benosman H et al. eP439 IMPACT ON NUTRITIONAL STATUS OF EUS-GUIDED GASTROENTEROSTOMY IN PATIENTS WITH A MALIGNANT DUODENAL STENOSIS. *Endoscopy* 2021; 53: S241.

**Aims** The endoscopic ultrasound guided gastroenterostomy (EUS-GE) is an alternative to the duodenal stent in patients with a malignant stenosis. This challenging technique may have larger patency times with a lower reintervention rate compared to duodenal stents at expenses of a higher intraoperative complication rate. However, the impact on nutritional status in these patients is unknown.

**Methods** Observational single-center study. All consecutive patients who underwent a EUS-GE in 2020 because of a malignant gastric outlet syndrome were included. A lumen apposing metal stent of 20mm was used. Clinical and biological variables and nutritional status were measured 48h before the procedure and for 3 months follow-up.

**Results** Seventeen patients underwent a EUS-GE. Seven were excluded because the purpose of the technique was not for alimentation but drainage of malignant afferent limb syndrome or access to excluded jejunal limb in post-surgical anatomy. Dix patients (mean age: 64±13,73yr, 50% male) with a pancreatic cancer (n = 7, 70%), cholangiocarcinoma (n = 1, 10%), gastric cancer (n = 1, 10%) or neuroendocrine tumor (n = 1, 10%) were finally included.

Before the procedure, the median OMS index was 1 (range:0-2) and a metastatic disease or carcinosis were confirmed in 3 (30%) and 2 (20%) cases. A previous duodenal stent was present in 60% of cases.

The technical success was 80% with a direct access (n = 7) or guidewire assisted (n = 3) techniques. Clinical success was 100% with a normal oral diet (n = 7, 87.5%) or mixed oral diet (n = 1, 12.5%) 48h after the procedure. Enteral nutrition was left in place in only two cases (20%). No complications, reintervention rate or mortality. An improvement of the weight (55kg vs. 53kg, p = 0.043) and BMI (20.8 kg/m<sup>2</sup> vs. 19.98 kg/m<sup>2</sup>, p = 0.043) were confirmed (Table 1).

**Conclusions** EUS-GE is a safe technique with high technical and clinical success improving the nutritional status and allowing to withdraw complementary enteral nutrition.

► Tab. 1

Variable	Before EUS-GE (48h)	Follow-up	P-value
Leucocytes (g/L)	6.95 (4.1-19.4)	9,6 (4,7-12,4)	0.686
Albumin (d/L)	30,5 (22-39)	34,5 (22-37)	0.336
Weight (kg)	53 (48-65)	55 (49,5-69)	0.043*
BMI (kg/m <sup>2</sup> )	19,98 (17,6-22,7)	20,8 (18,2-24,4)	0.043*

### eP440V SIMULTANEOUS EUS-GUIDED GASTROJEJUNOSTOMY AND CHOLEDOCHODUODENOSTOMY FOR TREATMENT OF INTESTINAL AND BILIARY OBSTRUCTION DUE TO MASSIVE LYMPHOMA OF THE DUODENAL PAPILLA

**Authors** Raiter A<sup>1</sup>, Szelemej J<sup>1</sup>, Kozłowska-Petriczko K<sup>2</sup>, Petriczko J<sup>3</sup>, Wiechowska-Kozłowska A<sup>4</sup>, Pawlak KM<sup>4</sup>

**Institute** 1 Specialist Hospital of Alfred Sokolowski, Department of Endoscopy, Wałbrzych, Poland; 2 SPWSZ Hospital, Department of Gastroenterology and Internal Medicine, Szczecin, Poland; 3 Pomeranian Medical University, Department of Plastic, Endocrine and General Surgery, Szczecin, Poland; 4 Hospital of the Ministry of Internal Affairs, Department of Gastroenterology, Szczecin, Poland

DOI 10.1055/s-0041-1724930

**Citation** Raiter A, Szelemej J, Kozłowska-Petriczko K et al. eP440V SIMULTANEOUS EUS-GUIDED GASTROJEJUNOSTOMY AND CHOLEDOCHODUODENOSTOMY FOR TREATMENT OF INTESTINAL AND BILIARY OBSTRUCTION DUE TO MASSIVE LYMPHOMA OF THE DUODENAL PAPILLA. *Endoscopy* 2021; 53: S242.

A 78-year-old female presented with symptoms of gastrointestinal tract obstruction, and jaundice was admitted for diagnostic and treatment. Gastroscopy revealed a cavity with massive neoplastic infiltration within the descending part of the duodenum. EUS showed a tumor of the duodenal papilla infiltrating the duodenal wall and the head of the pancreas. EUS-guided fine needle aspiration confirmed the diagnosis of MALT lymphoma. To restore the gastrointestinal and biliary tract patency, EUS guided gastrojejunostomy and choledochoduodenostomy using Hot Axios stents (20x10mm and 6x8mm) were created. After normalization of laboratory parameters, the patient started systemic treatment without any symptoms of obstruction.

### eP441 AN ASSESSMENT OF THE LEARNING CURVE FOR ENDOSCOPIC ULTRASOUND DIRECTED TRANSGASTRIC ERCP (EDGE) FOR A SINGLE OPERATOR

**Authors** Jovani M<sup>1</sup>, Keane MG<sup>1</sup>, Bejjani M<sup>1</sup>, Ghandour B<sup>1</sup>, Al Ghamdi S<sup>1</sup>, Akshintala VS<sup>1</sup>, Zhang L<sup>1</sup>, Mony S<sup>1</sup>, Khashab MA<sup>1</sup>

**Institute** 1 Johns Hopkins Hospital, Gastroenterology and Hepatology, Baltimore, United States

DOI 10.1055/s-0041-1724931

**Citation** Jovani M, Keane MG, Bejjani M et al. eP441 AN ASSESSMENT OF THE LEARNING CURVE FOR ENDOSCOPIC ULTRASOUND DIRECTED TRANSGASTRIC ERCP (EDGE) FOR A SINGLE OPERATOR. *Endoscopy* 2021; 53: S242.

**Aims** We aimed to study the learning curve (LC) of EUS-directed transgastric ERCP (EDGE). EDGE entails the creation of a gastrogastrostomy (GG) through placement of a lumen-apposing metal stent (LAMS).

**Methods** Retrospective analysis of a prospectively maintained dataset of patients who underwent EDGE by a single operator from 02/2015 to 08/2020. Primary outcome: learning curve for EDGE defined by the number of cases needed to achieve proficiency and mastery. Cumulative sum (CUSUM) analysis was used to assess them in terms of total procedural time (defined as the time for the combined procedure, both EUS and ERCP). The overall mean procedure time was used as the target value.

**Results** 46 EDGE were performed by the same operator (80% F, mean age 60yr). Technical success (creation of GG and completion of intended procedure) was achieved in 45 (97.8%) patients. Most procedures were performed freehand with cautery-assisted LAMS (85%), and stent size was 15 mm in 21 (46%) and 20 mm in 25 (54%) patients. Single-step procedure was performed in 32 (70%) of cases. Suturing of LAMS was performed in 32 (70%) patients. The mean procedural time was 87 min. AEs occurred in 7 (15%) patients, and consisted of bleeding (n = 2), cholangitis (n = 2) and perforation from misdeployment (n = 3), all managed conservatively/endoscopically. LAMS were left in place for a median of 42 days. There was no significant weight gain at the end of follow-up compared to pre-EDGE weight (89 kg vs 91 kg, p = 0.95). On CUSUM analysis, about 15 cases were needed to achieve proficiency, while 27 cases were needed to achieve mastery of the technique. These results were confirmed with the average moving curve.

**Conclusions** Analysis of the learning curve for EDGE revealed that 15 procedures can be considered the threshold to achieve proficiency and 27 cases to reach mastery of the technique.

### eP442 DIRECT ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTEROSTOMY WITH LUMEN-APPOSING METAL STENTS: A BICENTER STUDY ON TECHNICAL FEASIBILITY AND CLINICAL OUTCOME

**Authors** Fischer H<sup>1</sup>, Rütger K<sup>2</sup>, Abdelhafez M<sup>2</sup>, Götzberger M<sup>1</sup>, Schmid RM<sup>2</sup>, Dollhopf M<sup>1</sup>, Schlag C<sup>2</sup>

**Institute** 1 München Klinik Neuperlach, Klinik für Gastroenterologie und Hepatologie, Munich, Germany; 2 Klinikum rechts der Isar, Technische Universität München, II. Medizinische Klinik, Munich, Germany

DOI 10.1055/s-0041-1724932

**Citation** Fischer H, Rütger K, Abdelhafez M et al. eP442 DIRECT ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTEROSTOMY WITH LUMEN-APPOSING METAL STENTS: A BICENTER STUDY ON TECHNICAL FEASIBILITY AND CLINICAL OUTCOME. *Endoscopy* 2021; 53: S242.

**Aims** Endoscopic ultrasound-guided gastroenterostomy (EUS-GE) with lumen apposing metal stents (LAMS) appears to be a promising intervention in the management of gastroduodenal obstruction for patients of surgical high-risk or in a palliative setting. This study evaluates the feasibility and clinical outcome of direct EUS-GE.

**Methods** This retrospective bicenter study included patients who underwent direct EUS-GE (April 2017 to November 2020) investigating technical success

(correctly placed LAMS), clinical outcome (successful oral nutrition) and procedure-associated complications. Direct EUS-GE was performed under sedation using the Hot-AXIOS-Stent (Boston Scientific; n = 1: 10x10 mm, n = 14: 15x10 mm, n = 29: 20x10 mm). The intestinal target loop was filled with fluids and subsequently directly punctured with the stent delivery system followed by stent release under endosonographic control.

**Results** 44 patients (59% women/41% men; mean age 66 years) with malignant (n = 39) or benign (n = 5) gastroduodenal obstruction underwent direct EUS-GE. The technical success rate was 98% (43/44). However, in 14% of patients (6/44) the stent was misplaced while performing the first puncture since contact to the target loop was lost. Correct stent placement succeeded in 5 of these cases in a second attempt; in one patient no safe puncture site could be located so the intervention was terminated. After stent misplacement the gastric perforation site was closed by Over-The-Scope-Clipping (2/6) or no further treatment was needed due to small defect size (4/6). 91% (39/43) showed reduced vomiting and the ability of oral food intake after the intervention. Once, placement of a second EUS-GE was necessary to achieve sufficient clinical improvement. One patient developed a gastrojejunal fistula by accidental colon interposition during EUS-GE-intervention. It was managed by placing a fully-covered stent from the stomach through the colon into the jejunal loop.

**Conclusions** Direct EUS-GE has a favorable risk-benefit-profile for patients with gastroduodenal obstruction showing high technical success rates, manageable complications and rapid symptom relief.

### eP443 EUS-GUIDED GASTROJEJUNOSTOMY IN MALIGNANT GASTRIC OUTLET OBSTRUCTION – SAFETY, TECHNICAL AND CLINICAL SUCCESS

**Authors** Weber T<sup>1</sup>, Gölder SK<sup>2</sup>, Braun G<sup>2</sup>, Messmann H<sup>2</sup>

**Institute** 1 University Hospital of Augsburg, Internal Medicine 3 - Gastroenterology, Augsburg, Germany; 2 University Hospital of Augsburg, Augsburg, Germany

**DOI** 10.1055/s-0041-1724933

**Citation** Weber T, Gölder SK, Braun G et al. eP443 EUS-GUIDED GASTROJEJUNOSTOMY IN MALIGNANT GASTRIC OUTLET OBSTRUCTION – SAFETY, TECHNICAL AND CLINICAL SUCCESS. *Endoscopy* 2021; 53: S243.

**Aims** Gastric outlet obstruction (GOO) caused by malignancy lays a high burden of suffering on affected patients. Symptom relief and restoring the capability of ingesting food orally is a major contribution to improve quality of life. Several treatment options for this clinical problem are available, e.g. balloon dilation of the stenosis, stenting or surgical gastrojejunostomy (GJ) can be performed.

An evolving technique to overcome the clinical problem of malignant GOO is EUS-guided gastrojejunostomy (EUS-GJ) with placement of a self-expanding metal stent creating a bypass of the stenosis.

The question of effectiveness and safety of this approach was addressed in 13 consecutive patients treated with EUS-GJ by creating the bypass with a Hot Axios SEMS in a German tertiary care university hospital.

**Methods** 13 consecutive patients with malignant GOO were treated with EUS-GJ from 05/2019 until 09/2020 (Hot Axios SEMS 10/20, Boston Scientific). Technical (correct positioning of the stent) and clinical (improvement of GOO symptoms) success as well as complications were recorded.

**Results** 13 patients (46% female; mean age 75 years) underwent EUS-GJ for malignant GOO (pancreatic cancer 8/13, duodenal cancer 2/13, HCC, CCA, gastric cancer each one). Technical success and clinical success were achieved in 11/13 patients (84,6%) with a mean follow-up of 89 days. There were 2 (15,3%) severe AEs (misdeployment of the stents) with emergency surgical GJ performed. Both patients recovered soon. All other patients were able to restart diet the day after the intervention. Mean procedure time was 95 minutes (30 – 170). Mean length of stay in hospital post EUS-GJ was 6,2 days (3-19). No endoscopic re-intervention was necessary.

**Conclusions** EUS-GJ with SEMS (Hot Axios 10/20mm) appears to be a safe and effective therapeutic option for malignant GOO. Randomized controlled trials to evaluate its value compared to surgical GJ are required.

### eP444 ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTERIC ANASTOMOSIS: A FRENCH CENTER EXPERIENCE

**Authors** Ouazzani S<sup>1</sup>, Becar A<sup>1</sup>, Gasmi M<sup>1</sup>, Barthet M<sup>1</sup>, Gonzalez J-M<sup>1</sup>

**Institute** 1 Aix-Marseille Univ, APHM, Hôpital Nord, Gastroenterology, Marseille, France

**DOI** 10.1055/s-0041-1724934

**Citation** Ouazzani S, Becar A, Gasmi M et al. eP444 ENDOSCOPIC ULTRASOUND-GUIDED GASTROENTERIC ANASTOMOSIS: A FRENCH CENTER EXPERIENCE. *Endoscopy* 2021; 53: S243.

**Aims** Endoscopic ultrasound-guided gastroenteric anastomosis (EUS-GEA) is a minimally invasive alternative to surgery in the treatment gastric outlet obstruction. We aim to present a single center cohort highlighting the rate of benign indications and management of stent dislodgement.

**Methods** We reviewed, from a prospective database, all EUS-GEA performed in a tertiary care French hospital, from January 2014 to November 2020. Procedures were all performed under EUS and fluoroscopy control, for jejunal loop identification and LAMS (lumen apposition metal stent) deployment under general anesthesia.

**Results** A total of 22 EUS-GEA were performed in 20 patients (59.1% men) with a median age of 66.5 years old (IQ: 50-73). 13 (59.1%) were performed for malignant indications and 9/22 (41%) with a 15 mm Axios LAMS. The technical and clinical success rates were respectively 87% and 77%, with a perprocedural adverse event rate of 27.3% (none was fatal). 83.3% of them (5/6) were due to LAMS misdeployment in the intraperitoneal cavity. Among them, 3/5 (60%) were successfully treated by salvage second Axios insertion with NOTES procedures, for the others, the perforation was successively closed by an OVESCO clip. The technical failure causes were gastric portal hypertension precluding a good acoustic window for jejunal loop puncture (n = 2) and extensive gastric fibrosis (n = 1; caustic fibrosis). Hospital median stay duration was 8 (IQ:(5.3-15.8) days. No death related to the procedure occurred.

**Conclusions** EUS-GJA seems to be ready for prime time since benign indications reached a 41% rate and salvage therapy is efficient in case of LAS stent dislodgement.

### eP445 EFFICACY OF EUS-GUIDED HEMOSTATIC RESCUE THERAPY IN NON-VARICEAL GASTROINTESTINAL BLEEDING

**Authors** Rodríguez Mendiluce I<sup>1</sup>, Hervas N<sup>1</sup>, Arrubla A<sup>1</sup>, Uribarri L<sup>1</sup>,

Gomez M<sup>1</sup>, Busto V<sup>1</sup>, Macías E<sup>1</sup>, Areste I<sup>1</sup>, Casi M<sup>1</sup>, Vila JJ<sup>1</sup>

**Institute** 1 Complejo Hospitalario de Navarra, Endoscopy Unit.

Gastroenterology Dpt., Pamplona, Spain

**DOI** 10.1055/s-0041-1724935

**Citation** Rodríguez Mendiluce I, Hervas N, Arrubla A et al. eP445 EFFICACY OF EUS-GUIDED HEMOSTATIC RESCUE THERAPY IN NON-VARICEAL GASTROINTESTINAL BLEEDING. *Endoscopy* 2021; 53: S243.

**Aims** Our aim was to assess the usefulness of endoscopic ultrasonography (EUS) guided therapy as a rescue treatment in non-variceal gastrointestinal bleeding with previous failure to conventional endoscopic treatment.

**Methods** Single-center retrospective study. We included patients who underwent EUS for treatment of non-variceal gastrointestinal bleeding after failure of two conventional endoscopic treatment procedures, between 2010 and 2019. In patients with a Dieulafoy lesion the superficial artery vessel causing the bleeding was identified and punctured under ecographic view with injection of sclerosants. In patients with bleeding submucosal tumours, the lesion was identified and punctured under ecographic view with injection of ethanol.



Therapeutic success was considered the absence of rebleeding after treatment with EUS. Data are shown as percentage and mean +/- range.

**Results** A total of 12 patients were included, mean-age was 75.92 (range of 58-93) and 5 were women. Bleeding was caused by a Dieulafoy lesion in 7 patients and by submucosal tumours in 5. Five lesions were located in the stomach (41.7%), 6 in the duodenum (50%) and 1 in the rectum (8.3%). The number of previous bleeding episodes was 2 (range 1-6) and therapeutic success was achieved with EUS in 9 patients (75%), not being able to identify the lesion under ecographic view in one patient with a Dieulafoy lesion (8.3%). The most widely used EUS-guided hemostatic material was sclerosants in 7 patients (58.3%), followed by ethanol in 4 (33.3%). Mean follow-up time was 171.6 days (range 13-1005). Rebleeding occurred in two patients (dieulafoy) (16.67%) with a mean time to recurrence of 15.3 days (range 6-22), lowering the therapeutic success to 58%. No complications were observed with regard to this treatment.

**Conclusions** EUS-guided hemostatic rescue therapy can be effective and safe in non-variceal GI bleeding refractory to conventional endoscopic treatments, with a therapeutic success of 58% and with no related complications.

### eP446V EUS-GUIDED PERCUTANEOUS ENDOSCOPIC JEJUNOSTOMY IN BARIATRIC SURGERY (SINGLE ANASTOMOSIS DUODENO-ILEAL SWITCH- SADIS)

**Authors** Maisterra-Santos S<sup>1</sup>, Velásquez-Rodríguez JG<sup>1</sup>, Bazaga-Perez De Rozas S<sup>1</sup>, Llaurodó-Paco S<sup>2</sup>, Casajoana-Badia A<sup>3</sup>, Povedano M<sup>4</sup>, Ferrero E<sup>5</sup>, Vilarrasa-García N<sup>6</sup>, Gornals JB<sup>1</sup>

**Institute** 1 Hospital Universitari de Bellvitge-IDIBELL, Digestive Diseases Department, Endoscopy Unit, Barcelona, Spain; 2 Hospital Universitari de Bellvitge-IDIBELL, Anesthesiology Department, Barcelona, Spain; 3 Hospital Universitari de Bellvitge-IDIBELL, Bariatric Surgery Unit, Barcelona, Spain; 4 Hospital Universitari de Bellvitge-IDIBELL, Functional Motor Neuron Unit (UFMN), Barcelona, Spain; 5 Hospital Universitari de Bellvitge-IDIBELL, Pneumology Department, Barcelona, Spain; 6 Hospital Universitari de Bellvitge-IDIBELL, Endocrinology and Clinical Nutrition Department, Barcelona, Spain

DOI 10.1055/s-0041-1724936

**Citation** Maisterra-Santos S, Velásquez-Rodríguez JG, Bazaga-Perez De Rozas S et al. eP446V EUS-GUIDED PERCUTANEOUS ENDOSCOPIC JEJUNOSTOMY IN BARIATRIC SURGERY (SINGLE ANASTOMOSIS DUODENO-ILEAL SWITCH- SADIS). *Endoscopy* 2021; 53: S244.

51-year-old male with bulbar ALS, bariatric surgery (SADIS-S type) reconverted to Roux-en-Y bypass. Absence of transillumination prevents from conventional PEG placement. Proposal for EUS-guided percutaneous feeding tube placement. Percutaneous EUS-target creation with a water-filled glove placing it over the abdomen. Initial attempt to identify EUS-target from stomach, not possible for excessive distance. Advancement to jejunum, EUS-guided transejunal puncture and advancement of a guidewire, knotting it to feeding system and passed into the bowel and drawn back through the mouth. Finally, PEJ placement following traditional technique.

**Comment** Endoscopic alternative in unfit patients for conventional PEG due to bariatric surgery.

### eP447 IS EUS-GUIDED SINGLE-STEP COMPLETE-ASPIRATION USEFUL IN THE MANAGEMENT OF ABDOMINAL COLLECTIONS?

**Authors** Velasquez-Rodríguez JG<sup>1</sup>, Maisterra S<sup>1</sup>, Colan Hernandez J<sup>1</sup>, Gornals JB<sup>1</sup>

**Institute** 1 Hospital Universitari de Bellvitge-IDIBELL, Endoscopy, L'Hospitalet, Barcelona, Spain

DOI 10.1055/s-0041-1724937

**Citation** Velasquez-Rodríguez JG, Maisterra S, Colan Hernandez J et al. eP447 IS

EUS-GUIDED SINGLE-STEP COMPLETE-ASPIRATION USEFUL IN THE MANAGEMENT OF ABDOMINAL COLLECTIONS? *Endoscopy* 2021; 53: S244.

**Aims** Most endoscopic management of abdominal collections includes Endoscopic Ultrasound (EUS)-guided transmural drainage or transpapillary drainage via ERCP. EUS-guided single-step complete-aspiration (SSCA) is little reported and there are some doubts about its real effectiveness.

**Methods** Specific database review and retrospective cohort identification that includes abdominal collections treated by EUS-guided SSCA. The decision to apply this strategy was based on collection size and endoscopist criteria. Exclusion: transmural and/or transpapillary drainage. Technical success: needle access inside the collection and complete liquid aspiration liquid with total collapse. Clinical success defined as reduction  $\geq 50\%$  of initial size or decrease  $<50\%$  with clinical improvement, in subsequent imaging control. Failure: whether increased collection or need for clinical re-intervention. Other variables: demographics, procedure techniques, collection (etiology, size, infection), re-intervention, safety.

**Results** Of 180 collections endoscopically treated, selection of 42 patients and including 40 (23 men, mean age 55years (SD13.6)). Exclusion of 2 cases due lack of follow-up. Collections data: mean size 55-mm (SD19.7); liquid vs solid-content, 77 vs 23%; positive culture in 45%; pancreatic inflammatory nature in 85% (n=34, including 67% pseudocyst and 41% chronic pancreatitis). Technical success of 100%, clinical success of 50% with a first session and 60% after two. Adverse events detected in 5%: one procedure-related bleeding, and one patient with abdominal pain. The most used needle type, 19 G (87%). Mean follow-up, 574-days (SD 442).

No identification of factors related to clinical success (Table). Subgroup analysis according to collection etiology without differences. Failed-SSCA management: 40% conservative attitude vs 60% re-intervention, endoscopic 66.6% (other SSCA in 4; transmural pigtail placement in 3, and lumen-apposing stent in 1), in 25% percutaneous and 8.3% surgery.

**Conclusions** In a percentage of selected abdominal collections treatment by EUS-SSCA could save a more aggressive strategy. No specific factor associated with failure of this strategy has been identified.

► Tab. 1

Sex (Men/Female), n (%)	11(47)/9 (52)	0.74
Etiology (pancreatic/non-pancreatic), n (%)	15(44)/5 (83)	0.077
Microbiology (positive/negative), n (%)	7(38)/13 (68)	0.072
Age, mean (SD), years	56.3	0.493
Clinical success group	(15.0)	
Non-clinical success group	56.5 (12.2)	
Collection size, mean (SD), mm	56.8	0.414
Clinical success group	(17.6)	
Non-clinical success group		

### eP448V MASSIVE CYTOREDUCTION OF GASTRIC LEIOMYOSARCOMA USING ENDOSCOPIC ULTRASOUND GUIDED RADIOFREQUENCY ABLATION (EUS-RFA)

**Authors** Junquera F<sup>1</sup>, Machlab S<sup>1</sup>, Lira A<sup>1</sup>, Puig-Diví V<sup>1</sup>, Martínez-Bauer E<sup>1</sup>, Frisancho E<sup>1</sup>, Hernández L<sup>1</sup>, Pedregal P<sup>1</sup>, Brullet E<sup>1</sup>, Campo R<sup>1</sup>

**Institute** 1 Corporación Universitaria Parc Taulí, Digestive Disease, Sabadell, Spain

DOI 10.1055/s-0041-1724938

**Citation** Junquera F, Machlab S, Lira A et al. eP448V MASSIVE CYTOREDUCTION OF GASTRIC LEIOMYOSARCOMA USING ENDOSCOPIC ULTRASOUND GUIDED RADIOFREQUENCY ABLATION (EUS-RFA). *Endoscopy* 2021; 53: S244.

A woman with gastrointestinal bleeding from gastric leiomyosarcoma was evaluated. Gastroscopy showed a 3 cm polypoid eroded mass in the stomach. EUS revealed an hypoechoic transmural lesion. The tumor was punctured under EUS guidance with a 19G RFA (radiofrequency) needle. During ablation, a hyperechoic halo was visible, releasing 50W. Different punctures were performed using fanning technique until became entirely hyperechoic. After two RFA sessions, a 5mm residual erosion was observed. EUS-RFA procedures were performed on an outpatient basis, without complications and with good tolerance.

**Conclusion** EUS-RFA achieves a massive cytoreduction of gastric leiomyosarcoma in a simple and well tolerated manner.

## eP449V EUS-GUIDED ESOPHAGEAL FIDUCIAL BIOMARKER PLACEMENT FOR STEREOTACTIC BODY RADIATION THERAPY IN A SUPERFICIAL CANCER

**Authors** Velasquez-Rodriguez JG<sup>1</sup>, Boladeras-Inglada A<sup>2</sup>, Garcia-Sumalla A<sup>1</sup>, Maisterra S<sup>1</sup>, Galan M<sup>3</sup>, Gornals JB<sup>1</sup>

**Institute** 1 Hospital Universitari de Bellvitge-IDIBELL, Endoscopy, L'Hospitalet, Barcelona, Spain; 2 Institut Catala Oncologia, Radiotherapy, Barcelona, Spain; 3 Institut Catala Oncologia, Oncology, Barcelona, Spain

**DOI** 10.1055/s-0041-1724939

**Citation** Velasquez-Rodriguez JG, Boladeras-Inglada A, Garcia-Sumalla A et al. eP449V EUS-GUIDED ESOPHAGEAL FIDUCIAL BIOMARKER PLACEMENT FOR STEREOTACTIC BODY RADIATION THERAPY IN A SUPERFICIAL CANCER. *Endoscopy* 2021; 53: S245.

A 59-year-old man diagnosed of superficial esophageal adenocarcinoma and proposed for curative stereotactic body radiotherapy (SBRT).

A post-radiotherapy esophageal stricture did not allow passage of any scope. Dilation with CRE 10-12-mm balloon was performed and scope passage was feasible. One mucosal esophageal nodular area was. EUS-guided puncture using 22-Ga preloaded gold fiducial needle was performed, delivering of one and two perilesional fiducials within proximal border and distal border of the lesion area respectively. Recommendation for SBRT was made. Five-month control by CT-scanner revealed absence of tumoral signs. EUS-guided fiducial placement in esophageal cancer facilitates the efficacy of SBRT.

## eP451 ENDOSCOPIC ULTRASOUND SHARE-WAVE ELASTOGRAPHY OF THE RIGHT AND LEFT HEPATIC LOBE PREDICTS LIVER CIRRHOSIS: A DIAGNOSTIC TRIAL

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Del Valle R<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Dal Bello F<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Alvarado H<sup>1</sup>, Cifuentes C<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute** 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

**DOI** 10.1055/s-0041-1724940

**Citation** Robles-Medranda C, Oleas R, Del Valle R et al. eP451 ENDOSCOPIC ULTRASOUND SHARE-WAVE ELASTOGRAPHY OF THE RIGHT AND LEFT HEPATIC LOBE PREDICTS LIVER CIRRHOSIS: A DIAGNOSTIC TRIAL. *Endoscopy* 2021; 53: S245.

**Aims** We aim to evaluate endoscopic ultrasound share-wave elastography of the liver to predict liver cirrhosis.

**Methods** A single-center, diagnostic cohort study. Consecutive patients with history of chronic liver disease were evaluated with a EUS share wave elastography of the right and left hepatic lobes. Patients without a history of any medical condition despite subepithelial lesions were included as control. A transient elastography measurement of the liver was performed in both study and control patients in order to evaluate for correlation between elastography measurements. We calculated the overall accuracy of EUS- share wave elastography of the liver in the prediction of liver cirrhosis. Statistical analysis was performed on R v.3.6.0.

**Results** Among the 28 patients included, 14 had cirrhosis of the liver. The median age was 65.5 years, 64.3% were female. 92.9% of cirrhotic cases had a Child-Pugh A. The EUS share-wave elastography of the right hepatic lobe has a direct, proportional, and significant correlation ( $r=0.693$  [95% CI 0.431 – 0.847;  $p<0.001$ ]) as well as with the EUS share-wave of the left hepatic lobe ( $r=0.460$  [95% CI 0.105 – 0.711;  $p=0.014$ ]). The EUS-share wave of the right and left hepatic lobe reached an area under the receiver operating characteristics curve (AUROC) of 0.98 and 0.96, respectively. For identification of patients with cirrhosis, the EUS share-wave elastography of the right hepatic lobe with a cut-off value of  $\geq 10.7$  kPa had a sensitivity, specificity, PPV, and NPV of 100%, 93%, 93%, 100%, respectively. In the left hepatic lobe using a cut-off value of  $\geq 14.0$  kPa, EUS-share wave had a sensitivity, specificity, PPV, and NPV of 93%, 93%, 93%, respectively.

**Conclusions** EUS-share wave of the liver accurately diagnoses patients with liver cirrhosis. EUS-share wave of the right and left hepatic lobe correlates with transient elastography measurements of the liver. Larger studies are necessary to validate these data.

## eP452 RED-GREEN-BLUE (RGB) PROFILING OF PANCREATIC MASS-ELASTOGRAPHIES: VALIDATION OF A PREDICTIVE MODEL FOR NON-INVASIVE ASSESSMENT OF MALIGNANCY

**Authors** Razpotnik M<sup>1</sup>, Bota S<sup>1</sup>, Essler G<sup>1</sup>, Weber-Eibel J<sup>1</sup>, Peck-Radosavljevic M<sup>1</sup>

**Institute** 1 Department of Internal Medicine and Gastroenterology (IMuG), Hepatology, Endocrinology, Rheumatology, and Nephrology and Emergency Medicine (ZAE) with Centralized Endoscopy Service, Klinikum Klagenfurt am Wörthersee, Klagenfurt am Wörthersee, Austria

**DOI** 10.1055/s-0041-1724941

**Citation** Razpotnik M, Bota S, Essler G et al. eP452 RED-GREEN-BLUE (RGB) PROFILING OF PANCREATIC MASS-ELASTOGRAPHIES: VALIDATION OF A PREDICTIVE MODEL FOR NON-INVASIVE ASSESSMENT OF MALIGNANCY. *Endoscopy* 2021; 53: S245.

**Aims** Red-green-blue (RGB) profiling is a well-accepted method in imaging science. We aimed to evaluate the accuracy of quantitative image analysis of pancreatic tumor elastographies obtained by EUS to predict malignancy.

**Methods** Elastographies of solid pancreatic masses between 04/2017-04/2020 were extracted from our ultrasound device (Arrieta Hitachi-V70). A validation group was defined (since the software update in 08/2019) to validate the predictive model for malignancy. Quantitative RGB analysis was performed using ImageJ software (NIH). The exact amount of blue (hard), green (intermediate), and red (soft tissue-elasticity) was measured and expressed in pixels and percentages. Only the tumor tissues inside well-defined margins set by the operator were analyzed. The color intensity was measured on a scale of 0-255 for an 8-bit image. The intensity ratio for each color was defined as the relation between the absolute value for this color and the intensity of the sum of all three colors (R+G+B). The final diagnosis was made by histopathology, or a combination of radiological findings, tumor markers and clinical follow-up.

**Results** In main cohort, 59 solid pancreatic lesions evaluated by strain elastography were included: 45(75%) malignant-60% adenocarcinomas, 8.3% metastasis and 6.6% NETs, and 14(23.3%) benign masses. In the validation cohort, 20(76.9%) malignant-73.1% adenocarcinomas, 3.8% metastasis, and 6 (23.1%) benign tumors were included. Cut-off values (CO) for 4 variables (criteria) of the main cohort correlating with the presence of malignancy were calculated: blue color (CO  $>55\%$ -Se 93.3%, Spe 35.7%, AUC 0.62), green color (CO  $<42.5\%$ -Se 97.8%, Spe 42.5%, AUC 0.64), green color intensity ratio (CO  $<56\%$ -Se 71.1%, Spe 78.6%, AUC 0.76), red color intensity ratio (CO  $<18.5\%$ -Se 42.2%, Spe 92.9%, AUC 0.63). Good concordance between the main and the validation group was seen (Table).

**Conclusions** Quantitative image analysis of tumor elastographies obtained by EUS may predict or exclude malignancy with high accuracy.

► Tab. 1

Criteria	Main cohort (04/2017-07/2019)	Risk of malignancy	Validation cohort (08/2019-04/2020)	Risk of malignancy
0	n = 5	0 %	n = 1	0 %
1 or 2	n = 15	60 %	n = 11	63.6 %
3 or 4	n = 39	92.3 %	n = 14	92.9 %

### eP453 A COMPLETE PANCREATICO-BILIARY EXPLORATION PERFORMED WITH A NEW SLIM LINEAR ECHOENDOSCOPE

**Authors** Iglesias-Garcia J<sup>1</sup>, Mejuto R<sup>1</sup>, Lariño-Noia J<sup>1</sup>, De la Iglesia-Garcia D<sup>1</sup>, Jardi-Cuadrado A<sup>1</sup>, Quiroga-Castiñeira A<sup>1</sup>, Dominguez-Muñoz JE<sup>1</sup>

**Institute** 1 Santiago de Compostela, Gastroenterology and Hepatology,

Santiago de Compostela, Spain

DOI 10.1055/s-0041-1724942

**Citation** Iglesias-Garcia J, Mejuto R, Lariño-Noia J et al. eP453 A COMPLETE PANCREATICO-BILIARY EXPLORATION PERFORMED WITH A NEW SLIM LINEAR ECHOENDOSCOPE. *Endoscopy* 2021; 53: S245.

**Aims** To compare the maneuverability and image quality of a newly developed slim linear echoendoscope with the slim standard in the evaluation of bilio-pancreatic diseases.

**Methods** Prospective, cross-sectional, observational study. All patients submitted to an EUS for the evaluation of bilio-pancreatic diseases were evaluated and those cases performed with the slim echoendoscopes were finally included in the study. The new slim EG-34J10 echoendoscope and the standard slim EG-3270UK echoendoscope [Pentax-Medical] were used in combination with the ARIETTA-V70 ultrasound console (Hitachi). Table shows the differences between both echoendoscopes. Maneuverability during esophageal intubation, passage through the pylorus, and access to the second portion of duodenum (D2) (scored from 0 to 3) were evaluated. The image quality was analyzed in the standard stations (esophagus, stomach and duodenum) (scored from 0 to 3). A descriptive analysis was performed, showing results as mean and standard deviation. Data were compared by Chi-square.

**Results** 537 EUS procedures were performed for the evaluation of bilio-pancreatic diseases, 128 (23.8%) with the new EG-34J10, and 353 (65.7%) with the EG-3270UK, which were finally included in the study. Mean age was 63 years (range 22-91, 272 women). A complete bilio-pancreatic exploration was possible in all cases (100%). In terms of maneuverability, the new 34J10 presented a better esophageal intubation (2.9±0.2 vs 2.5±0.4;  $p < 0.05$ ) and access to D2 (2.9±0.2 vs 2.4±0.4;  $p < 0.05$ ), without differences in passage through the pylorus. On image quality, the 34J10 behaved better in duodenal stations (2.9±0.3 vs 2.7±0.4;

$p < 0.05$ ), with no differences in esophageal nor gastric stations. There were no complications related to the procedure echoendoscopy in the study period.

**Conclusions** The new slim linear echoendoscope appears to have better maneuverability and improved image quality compared to the standard slim scope. A complete bilio-pancreatic examination can be performed safely and efficiently with both slim echendoscopes.

### eP454 THE PLACE OF ENDOSCOPIC VARICEAL BAND LIGATION IN THE TREATMENT OF CHILDREN WITH PREHEPATIC PORTAL HYPERTENSION

**Authors** Voroniak D<sup>1,2</sup>, Godik O<sup>2</sup>, Kolomoiets I<sup>1</sup>, Dubrovin O<sup>2</sup>

**Institute** 1 The National Children Specialized Hospital "OHMATDYT",

Diagnostic, Kyiv, Ukraine; 2 Bogomolets' National Medical University, Pediatric Surgery, Kyiv, Ukraine

DOI 10.1055/s-0041-1724943

**Citation** Voroniak D, Godik O, Kolomoiets I et al. eP454 THE PLACE OF ENDOSCOPIC VARICEAL BAND LIGATION IN THE TREATMENT OF CHILDREN WITH PREHEPATIC PORTAL HYPERTENSION. *Endoscopy* 2021; 53: S246.

**Aims** The bleeding from esophageal is one of the most dangerous complications in children with prehepatic portal hypertension (PH). The literature sources systematization shows that the question of choosing the variceal bleeding (VB) prevention optimal method in children remains debatable. The main goal of our study was to determine the optimal management for the VB preventive treatment in children with prehepatic PH.

**Methods** A retrospective review of children (aged from 0 to 18 years) with prehepatic PH and VB high risk treated in The National Children Specialized Hospital «OHMATDYT» was performed from January 1, 2016 to December 31, 2019. We used the endoscopic variceal band ligation and portosystemic shunting variants as two main endoscopic and surgical VB preventing methods.

**Results** The data of 25 patients from the endoscopic group and 53 patients from the surgical group were available for the final analysis. Esophageal varices eradication was achieved in 21 (84%) patients from endoscopic group and 24 (45.3%) from the surgical group. Endoscopic treatment efficacy in achieving esophageal varices eradication and VB recurrence prevention is higher than surgical ( $p < 0.05$ ).

Postoperative complications occurred more frequently in patients who underwent porto-systemic shunting ( $p < 0.05$ ). Although the esophageal varices recurrence risk was higher in endoscopic group ( $p < 0.05$ ).

**Conclusions** Despite their effectiveness in obliterating esophageal varices, endoscopic methods do not affect the pressure in the portal system and do not restore normal portal blood flow to the liver. Porto-systemic shunting is the only method of portal system decompression and restoration of portal blood flow to the liver in children with prehepatic PH. Endoscopic variceal band ligation can be used as a preparatory stage for portosystemic shunting. The obtained results indicate that the optimal option of the variceal bleeding prophylactic treatment may be a combination of endoscopic and surgical treatment methods in children with prehepatic PH.

### eP455 SAFETY AND EFFICACY OF ENDOSCOPIC ULTRASOUND AS A DIAGNOSTIC AND THERAPEUTIC TOOL IN PEDIATRIC PATIENTS: A MULTI-CENTER STUDY

**Authors** Ghoneem E<sup>1,2</sup>, Okasha H<sup>3</sup>, Shiha G<sup>1,2</sup>, Soliman R<sup>4,2</sup>, Gouda M<sup>5</sup>, Ragab K<sup>5</sup>

**Institute** 1 Faculty of Medicine, Mansoura University, Gastroenterology and Hepatology, Mansoura, Egypt; 2 Egyptian Liver Research Institute and Hospital (ELRIAH), Gastroenterology and Hepatology, Mansoura, Egypt; 3 Kasr al-Aini School of Medicine, Cairo University, Internal Medicine, Division of Hepatology and Gastroenterology, Cairo, Egypt; 4 Faculty of Medicine, Port Said University, Tropical Medicine Department, Port Said, Egypt; 5 Theodor Bilharz Research Institute, Hepatology and Gastroenterology, Cairo, Egypt

► Tab. 1

	Slim standard echoendoscope (3270UK)	New slim echoendoscope (34J10)
Scan Angle	120°	150°
Tip angulation	130/130°	160/130°
Distal end width	12.0 mm	12.9 mm
End to anchor balloon	Yes	No

DOI 10.1055/s-0041-1724944

**Citation** Ghoneem E, Okasha H, Shiha G et al. eP455 SAFETY AND EFFICACY OF ENDOSCOPIC ULTRASOUND AS A DIAGNOSTIC AND THERAPEUTIC TOOL IN PEDIATRIC PATIENTS: A MULTI-CENTER STUDY. *Endoscopy* 2021; 53: S246.

**Aims** Assess the feasibility, safety and clinical impact of endoscopic ultrasound in pediatric patients.

**Methods** Between May 2017 to June 2020, at endoscopy unit of four Egyptian tertiary center, we included all pediatric patients (< 18 years) referred to EUS assessment who are clinically fit for the procedure. Significant impact was defined as a new diagnosis or treatment attributed to the EUS examination.

**Results** Twenty-nine pediatric patients (19 males and 10 females) with a median age of nine years (2.5: 15 years) who underwent EUS procedures for diagnostic (n=24 cases; 13 child only for assessment and 11 child for tissue acquisition) and therapeutic (n=5 cases) indications were included. Thirteen cases diagnosed by EUS without tissue acquisition (n=7 chronic pancreatitis, n=2 normal pancreas, n=1 resolving pseudocyst, n=1 rectal abscess with fistula, n=2 duplication cysts), while eleven patients underwent EUS-guided tissue acquisition (n=5 FNA and n=6 FNB) with a definitive histopathological diagnosis in ten patients, while one case of inconclusive finding. Five patients underwent Cystogastrostomy for symptomatic pancreatic pseudocyst with technical and clinical success achieved in all patients. EUS could diagnose the disease in 21 of 24 patients (ten cases were histopathologically proven and 11 cases had the typical EUS criteria of a disease), while those cases unable to be successfully diagnosed included two with normal pancreases and one with inconclusive biopsy findings. There was no procedure related major complication, while minor related complication in two cases (pain in one case of FNB, mild and for 6 h; fever and vomiting in one of cystogastrostomy cases, last for 2 days).

**Conclusions** Standard EUS equipment and accessories can be used safely and effectively in pediatric patients for diagnosis of GI related diseases, especially pancreatico-biliary, and EUS guided Cystogastrostomy.

## eP456 POEM IN CHILDREN

**Authors** Korolev M<sup>1</sup>, Fedotov L<sup>2</sup>, Ogloblin A<sup>2</sup>, Mamedov S<sup>2</sup>, Fedotov B<sup>2</sup>  
**Institute** 1 Saint-Petersburg State Pediatric Medical University, Endoscopy, Saint-Petersburg, Russian Federation; 2 Saint-Petersburg State Pediatric Medical University, Saint-Petersburg, Russian Federation

DOI 10.1055/s-0041-1724945

**Citation** Korolev M, Fedotov L, Ogloblin A et al. eP456 POEM IN CHILDREN. *Endoscopy* 2021; 53: S247.

**Aims** Show the effectiveness of POEM in the treatment of cardiac achalasia in children.

**Methods** Patients were treated at the Department of General Surgery with a course of endoscopy at St. Petersburg State Medical University. In the period from 2016 to 2020, the POEM technique was used in 3 children - 11, 14 and 16 years old. According to the results of the instrumental examinations (gastroscopy, X-ray, CT), the patients were found to have 3d stage of cardiac achalasia. All patients were underweight, the average duration of complaints was 1.5 years. Eckhardt score were 6-8 points. An 11-year-old child suffered from recurrent reflux pneumonia. At the first stage, all patients underwent manual and conservative antispasmodic therapy, without significant effect. A 16-year-old patient underwent a single cardia balloon dilatation without significant effect. All patients underwent POEM along the posterior wall of the esophagus, the average length of the tunnel in the submucosal layer was 10 cm, the mean operation time was 64 minutes, all patients underwent dissection of the circular muscular layer of the cardiac sphincter. All patients in the postoperative period received antibiotic therapy (7 days after operation). On the 3rd day, the patients freely took liquid food, and were discharged on the 7th day of the postoperative period.

**Results** After 14 days, the assessment of the Eckhardt score was 1-2 points. 4 weeks after the operation, all patients underwent a control X-ray examination, there was a free flow of contrast agent into the stomach, the appearance of a gas bubble in the stomach. Clinically, patients indicate an improvement in well-

being, cessation of cough at night, and absence of dysphagia. Nowadays they eat solid and liquid food.

**Conclusions** At present, POEM is the operation of choice in the treatment of cardia achalasia, regardless of the patient's age.

## eP457 ENDOSCOPIC DIAGNOSTIC OF CONGENITAL PARTIAL HIGH OBSTRUCTION IN NEWBORNS: MISTAKES ANALYSIS

**Authors** Kaminskaya Y<sup>1</sup>, Sautin A<sup>1</sup>, Marakhouski K<sup>1</sup>

**Institute** 1 Republican Research Center for Pediatric Surgery, Minsk, Belarus

DOI 10.1055/s-0041-1724946

**Citation** Kaminskaya Y, Sautin A, Marakhouski K. eP457 ENDOSCOPIC DIAGNOSTIC OF CONGENITAL PARTIAL HIGH OBSTRUCTION IN NEWBORNS: MISTAKES ANALYSIS. *Endoscopy* 2021; 53: S247.

**Aims** Diagnostic of congenital partial high intestinal obstruction (CPHIO) is a difficult task due to the hidden clinic and compensated condition of the newborn. Clinical signs of CPHIO may include heavy vomiting or frequent regurgitation, bloating, and weight loss. From the endoscopy point of view, the causes of CPHIO can be divided into intrinsic or extrinsic compression.

**Methods** It was chosen 25 upper GI endoscopy, which were performed on newborns from 2015 to 2020. In all cases, endoscopy was done after X-ray which was exhibited CPHIO signs. All children received surgical correction of the subsequent reasons CPHIO as well as a last diagnostic procedure. Each endoscopy were video archived. Endoscopic picture and intraoperative result were compared.

**Results** Boys - 52%. The average birth weight was 2917.0 g.(95%CI 2636.9 – 3197.1). In 9 out of 25 newborns (36%), endoscopy was performed in the early neonatal period, and in 16 (64%) in the late neonatal. A comparative analysis of archived video recordings and operating protocols revealed that 13 newborns had 100% matching endoscopy and surgery, the accuracy of endoscopic diagnostic was 52%.

The analysis revealed three categories of mistakes:

- I. Different mechanism of stenosis formation (example: an endoscopy shows duodenal membrane, the surgery reveals Ledd's syndrome).
- II. Different level of stenosis formation (an endoscopy shows prepiloric zone, the surgery reveals duodenal zone).
- III. Misinterpreting the characteristics of stenosis (complete atresia – perforated membrane).

**Conclusions** The diagnostic accuracy was 52% and is unsatisfactory, which requires systematization of endoscopic signs to improve the accuracy of studies.

Endoscopic picture (A)	Operating picture (B)	Mistakes	Patient
The perforated membrane of the duodenum; pre/-pyloric stenosis; compression from the outside			13
Duodenal membrane	Annular pancreas, extrinsic compression	I	8
Pre/-pyloric stenosis	Duodenal membrane	II	2
Complete atresia	Duodenal membrane	III	2



## eP458 ENDOSCOPY OF CONGENITAL PARTIAL HIGH INTESTINAL OBSTRUCTION: IMPROVING DIAGNOSTIC ACCURACY

**Authors** Sautin A<sup>1</sup>, Kaminskaya Y<sup>1</sup>, Marakhouski K<sup>1</sup>

**Institute** 1 Republican Research Center for Pediatric Surgery, Minsk, Belarus

**DOI** 10.1055/s-0041-1724947

**Citation** Sautin A, Kaminskaya Y, Marakhouski K eP458 ENDOSCOPY OF CONGENITAL PARTIAL HIGH INTESTINAL OBSTRUCTION: IMPROVING DIAGNOSTIC ACCURACY. *Endoscopy* 2021; 53: S248.

**Aims** Endoscopy allows to determine the cause and localization of congenital high partial intestinal obstruction (CPHIO), but endoscopic picture not always correlates with the surgical findings. Endoscopy in newborns is a technically complicated due to the limited facilities of endoscopic equipment and special patients condition. According to endoscopy, the causes of CPHIO can be assigned to intrinsic or extrinsic compression.

**Methods** Twenty-five upper endoscopies in newborns were performed. In 9 cases (34%), endoscopy was performed in the early neonatal period, and in 16 (56%) in the late one. Causes of CPHIO in these children were diagnosed and removed by surgery procedure. In examining archived image recordings, it was possible to determine type of CPHIO. Accuracy of endoscopic diagnostic was 52%. Retrospective analysis of endoscopic examination connected to surgical result shows recurring endoscopic signs, which were revealed.

**Results** The first group (without lumen):

1. The examined area is straightened completely, with the disappearance of folds.
2. A ring-shaped structure with villi-like elements is visualized on the mucosa.
3. Within this structure, there is an orifice whence bile or bubbles flow.

Second group (extrinsic compression):

1. The lumen is not adequately straightened by air.
2. The overlapping of opposite folds on each other is visualized (like anatomical angles of the colon).
3. When trying to passage the device, there is no movement of the distal end and the device forms a loop in the stomach.

Recorded endoscopic examination were described with indication of the group of endoscopic signs. The following results were obtained:

- type of CPHIO was determined in 21 cases, and the accuracy of endoscopic diagnosis was 84% (Difference 32,0%, 95% CI, 6.1-52.8, chi-squared test 5,765, P=0,0164).

**Conclusions** Belonging of endoscopic signs to one or the other type suggests a set of causes of CPHIO with a high diagnostic accuracy.

## eP459V RECURRENT ACUTE PANCREATITIS IN PEDIATRICS – PANCREAS DIVISUM

**Authors** Moura DB<sup>1</sup>, Nunes N<sup>1</sup>, Flor de Lima M<sup>1</sup>, Chálim Rebelo C<sup>1</sup>, Santos MP<sup>1</sup>, Costa Santos V<sup>1</sup>, Rego AC<sup>1</sup>, Pereira JR<sup>1</sup>, Paz N<sup>1</sup>, Duarte MA<sup>1</sup>

**Institute** 1 Hospital do Divino Espírito Santo de Ponta Delgada, Gastroenterology Department, Ponta Delgada, Portugal

**DOI** 10.1055/s-0041-1724948

**Citation** Moura DB, Nunes N, Flor de Lima M et al. eP459V RECURRENT ACUTE PANCREATITIS IN PEDIATRICS – PANCREAS DIVISUM. *Endoscopy* 2021; 53: S248.

Male patient, 14 years old, presents with recurrent acute pancreatitis. The main causes of acute pancreatitis were excluded and magnetic resonance cholangiopancreatography revealed complete pancreas divisum, the minor papilla draining independently of the main pancreatic duct.

An endoscopic retrograde cholangiopancreatography was performed. The minor papilla was cannulated after primary needle-knife precut, followed by sphincterotomy and plastic stent placement. During follow-up for six months the patient was asymptomatic.

Endoscopic treatment of pancreas divisum is technically difficult. In the presented case it was executed successfully with no complications.

## eP460 10 YEARS OF EXPERIENCE WITH EOSINOPHILIC ESOPHAGITIS IN FIVE CZECH PEDIATRIC ENDOSCOPY CENTERS

**Authors** Pecl J<sup>1</sup>, Jabandziev P<sup>1,2</sup>, Kunovsky L<sup>3,4</sup>, Vaculova J<sup>3</sup>, Karaskova E<sup>5</sup>, Sulakova A<sup>6</sup>, Toukalkova L<sup>7</sup>, Zimen M<sup>8</sup>

**Institute** 1 Department of Pediatrics, University Hospital Brno, Faculty of Medicine, Masaryk University, Brno, Czech Republic; 2 Central European Institute of Technology, Masaryk University, Brno, Czech Republic; 3 Department of Gastroenterology and Internal Medicine, University Hospital Brno, Faculty of Medicine, Masaryk University, Brno, Czech Republic; 4 Department of Surgery, University Hospital Brno, Faculty of Medicine, Masaryk University, Brno, Czech Republic; 5 Department of Pediatrics, University Hospital Olomouc, Faculty of Medicine and Dentistry, Palacky University, Olomouc, Czech Republic; 6 Department of Pediatrics, University Hospital Ostrava, Faculty of Medicine, University of Ostrava, Ostrava, Czech Republic; 7 Department of Pediatrics, Tomas Bata Regional Hospital, Zlin, Czech Republic; 8 Department of Pediatrics, Jihlava Hospital, Jihlava, Czech Republic

**DOI** 10.1055/s-0041-1724949

**Citation** Pecl J, Jabandziev P, Kunovsky L et al. eP460 10 YEARS OF EXPERIENCE WITH EOSINOPHILIC ESOPHAGITIS IN FIVE CZECH PEDIATRIC ENDOSCOPY CENTERS. *Endoscopy* 2021; 53: S248.

**Aims** Eosinophilic esophagitis (EoE) is a chronic, progressive inflammatory disease of the esophagus characterized by local eosinophilic infiltration accompanied by symptoms of esophageal dysfunction. EoE may affect individuals at any age, although the clinical presentation and relevant triggers are different among children and adult patients. The aim of this study was to characterize features and management of pediatric EoE diagnosed in Czech Republic.

**Methods** The observational survey retrospectively analyzed a data set of child patients with histologically proven EoE from five pediatric endoscopy centers in Moravia region. Demographic features; clinical symptoms; laboratory, endoscopic, and histopathological findings; and chosen treatment of patients were recorded and analyzed.

**Results** From 2010 to 2020, 33 new cases of EoE were reported (81% male). The median age of symptom onset was 7 years, while the median age for diagnosis was almost 13 years. The most common symptoms were reflux symptoms in general (39.4%), followed by vomiting (36.4%), and dysphagia (33.3%). Examination for sensitization to food allergens was performed on 23 (69.7%) patients of which 17 (51.5% of all cases) were sensitized to some allergens. Another allergic comorbidity was present in 75.8% of patients, and the most common were bronchial asthma and allergic rhinoconjunctivitis (45.5% and 42.2%, respectively). More than two-thirds of patients (69.7%) had abnormal macroscopic findings during diagnostic endoscopy, and the most common were longitudinal furrows and white exudates. The most common initial modality of treatment was to use proton-pump inhibitors (PPI; 93.9%), followed by food elimination (75.8%) and then by corticosteroid administration (63.6%).

**Conclusions** This is the first retrospective study on pediatric patients with EoE in the Czech Republic. We found similar features of EoE as reported in formerly published works elsewhere. Collecting long-term prospective observational data in a national EoE register of patients in the Czech Republic would significantly improve our knowledge of this disease.

## eP461 NIV SCORE IS A RELIABLE INDEX FOR EVALUATING SMALL BOWEL INVOLVEMENT IN PEDIATRIC CROHN'S DISEASE PATIENTS

**Authors** Hauser G<sup>1</sup>, Palcevski G<sup>2</sup>, Candrljic B<sup>3</sup>, Miletic D<sup>3</sup>, Hrabac P<sup>4</sup>

**Institute** 1 Faculty of Medicine, University of Rijeka, Clinical Hospital Centre Rijeka, Gastroenterology, Rijeka, Croatia; 2 Faculty of Medicine, University of Rijeka, Clinical Hospital Centre Rijeka, Pediatric Gastroenterology, Rijeka, Croatia; 3 Faculty of Medicine, University of Rijeka, Clinical Hospital Centre

**Citation** Hauser G, Palcevski G, Candric B et al. eP461 NIV SCORE IS A RELIABLE INDEX FOR EVALUATING SMALL BOWEL INVOLVEMENT IN PEDIATRIC CROHN'S DISEASE PATIENTS. *Endoscopy* 2021; 53: S248.

**Aims** Crohn's disease (CD) is a chronic inflammatory disorder of the gastrointestinal tract, predominantly involving the small intestine and colon. Up to 66% of patients with Crohn's disease have small-bowel involvement at diagnosis. Ileocolonoscopy is the gold standard in the diagnosis of ileocolonic disease but skip lesions and proximal involvement can be evaluated only by the meaning of capsule endoscopy (VCE) and or MR enterography (MRE). The aim of the study was to correlate findings obtained from MRE and VCE with Paediatric Crohn's disease Activity Index (PCDAI) at the time of disease presentation.

**Methods** At a single-center, tertiary care hospital center we included 52 subjects, 35 boys and 17 girls with a mean age of 14.0 years. After the upper and lower endoscopy was performed, we assessed PCDAI and all patients with suspected small bowel involvement underwent both MRE (1.5 T MRI system, evaluated by Crohn disease MRI index – CDMI) and VCE (SB 3, evaluated by the Capsule Endoscopy Crohn's Disease Activity Index - CECDAI or Niv).

**Results** Mean PCDAI value was 21.3, comparable by sex of the participants but correlating positively and significantly with age ( $r=0.393$ ;  $p=0.004$ ). All CECDAI parameters (proximal, distal, summary) as well as CDMI correlated statistically significantly ( $p<0.01$ ) and positively ( $r>0.5$ ) with PCDAI. Two regression models were evaluated. In the first stepwise model, summary CECDAI was left as the only independent predictor, ( $R^2 = 0.337$ ). In a similar model, but with CDMI as a predictor,  $R^2$  was only marginally lower with a value of 0.332, with other independent variables (age, gender...) excluded from the model as well. Both models were statistically significant at  $p<0.001$ .

**Conclusions** Both summary CECDAI and CDMI were remarkably similar as predictors of the PCDAI as the objective parameter of the disease.

## eP462 ALGORITHM BASED DECISION MAKING IN PAEDIATRIC ENDOSCOPY

**Author** Ahmad WT<sup>1</sup>

**Institute** 1 QMUL, Gastroenterology, London, United Kingdom

DOI 10.1055/s-0041-1724951

**Citation** Ahmad WT eP462 ALGORITHM BASED DECISION MAKING IN PAEDIATRIC ENDOSCOPY. *Endoscopy* 2021; 53: S249.

**Aims** To retrospectively and prospectively assess diagnostic and therapeutic endoscopies performed in children in a single unit.

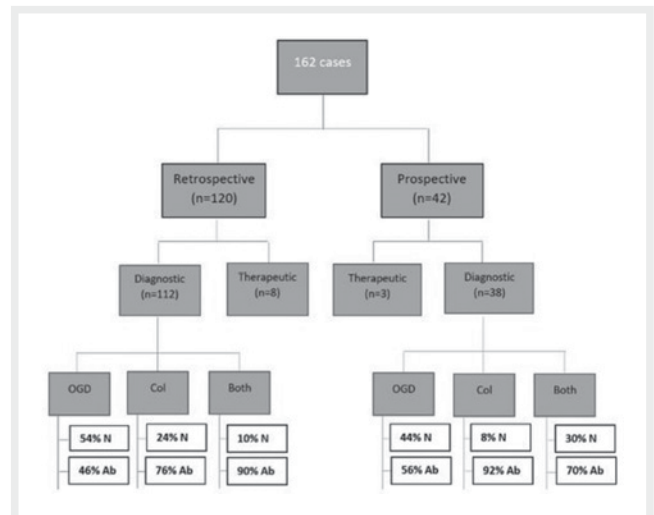
To investigate and analyse indications with the histological outcome of newly presenting and follow-up cases.

To predict the histological outcome of an endoscopy based on clinical presentation and investigations.

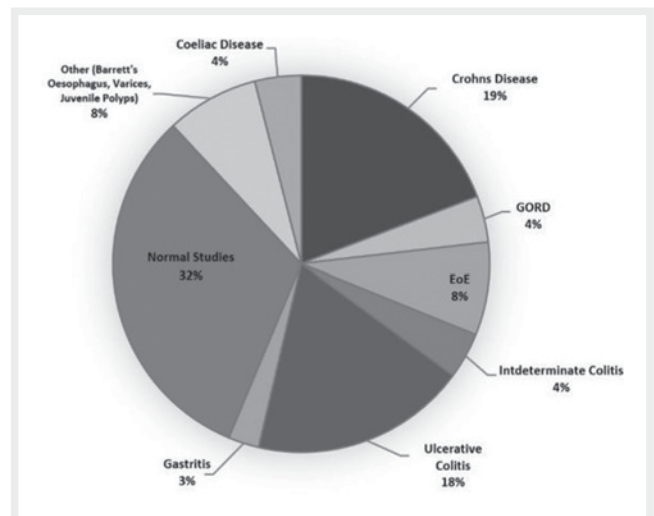
**Methods** This was a 3-months retrospective and 1-month prospective analysis of clinical factors with endoscopic and histological outcome in a single centre of UK. All the diagnostic and therapeutic cases, whether new cases or follow-up cases, were included in this study. Histological outcome was considered as a standard criterion for abnormality as agreed in the weekly multidisciplinary team meeting.

**Results** A total of 162 endoscopy cases were reviewed. 151 diagnostic and 11 therapeutic procedure's data was collected. 32% of the diagnostic cases and 36% of the diagnostic procedures were histologically normal. 129 (85%) of the diagnostic cases were correctly predicted without the knowledge of the outcome of the endoscopy or biopsy report. 82% of new normal cases were predicted accurately. 40% of new endoscopies had normal histology. 60% of the OGDs in this study had normal histological outcome.

Abdominal pain was the symptom-indicator in 44% of diagnostic cases. However, 57% of abdominal pain cases had normal histological outcome in OGDs. Weight loss and anaemia reported a high abnormal outcome of 89% and 92%, respectively.



► Fig.1



► Fig.1

**Conclusions** This study reported almost one third of normal histological outcome of paediatric endoscopies. More than half of OGD were normal studies with no pathology on biopsy. Prediction of outcome of endoscopy on basis of clinical presentation was successfully performed in both aspects of this studies and both new and follow-up cases. This study provides data to design an algorithm using clinical presentation and laboratory data to predict endoscopic outcome and it will also help in the reduction of unnecessary endoscopies.

## eP463 A CASE OF EOSINOPHILIC ESOPHAGITIS IN ADOLESCENT: SIMILARITIES AND DIFFERENCES WITH GASTROESOPHAGEAL REFLUX DISEASE

**Authors** Zavhorodnia N<sup>1</sup>, Zhigir N<sup>1</sup>, Tarabarov S<sup>2</sup>

**Institute** 1 SI "Institute of Gastroenterology of the National Academy of Medical Sciences of Ukraine", Pediatric Department, Dnipro, Ukraine; 2 SI "Institute of Gastroenterology of the National Academy of Medical Sciences of Ukraine", Endoscopic Department, Dnipro, Ukraine

DOI 10.1055/s-0041-1724952

**Citation** Zavhorodnia N, Zhigir N, Tarabarov S eP463 A CASE OF EOSINOPHILIC

ESOPHAGITIS IN ADOLESCENT: SIMILARITIES AND DIFFERENCES WITH GASTROESOPHAGEAL REFLUX DISEASE. *Endoscopy* 2021; 53: S249.

**Aims** To describe the case of eosinophilic esophagitis in adolescent.

**Methods** Clinical, endoscopic, histological, and laboratory examination.

**Results** A 16-year-old male Caucasian patient initially addressed to an otolaryngologist with complaints of frequent respiratory infection, sore throat, and retrosternal chest discomfort which has been observing for two years. After a detailed examination patient was referred to a gastroenterologist due to the association of retrosternal chest discomfort with swallowing. Moreover, the patient had persistent heartburn, epigastric pain after eating. He did not have any allergic reactions before and family histories of an allergic disease. Physical examination revealed a weight deficit (BMI = 17.89 corresponds to -1.5 sigma). Gastroesophageal reflux disease (GERD) was suspected and the patient referred to esophagogastroduodenoscopy (EGD). EGD showed: circular and longitudinal furrows in all segments of the esophagus, edema, decreased vascularity, in the middle third of the esophagus are identified three papillomas (removed by "cold resection"). Biopsies were obtained from the proximal and distal esophagus, in which eosinophilic infiltration (> 30 eos/hpf) of the esophageal mucosa was observed. Laboratory tests revealed specific immunoglobulins E to milk proteins, *Alternaria alternata*, immunoglobulins G to gliadin (>10ULN). Based on the clinical, endoscopic, histological, and laboratory findings, the patient was diagnosed with eosinophilic esophagitis (EoE). Dairy-free and gluten-free diet for 3 months and proton pump inhibitors were prescribed. After a 4-week initial therapy, the patient noted the resolution of symptoms.

**Conclusions** Our case report demonstrates that the main extraintestinal and intestinal symptoms of GERD and EoE are similar and proper examination of patients, especially morphological, is necessary to correctly diagnose EoE.

#### eP464 THE ROLE OF SPECTRAL FOCUSED IMAGING IN DIAGNOSING SUBTLE MUCOSAL CHANGES IN ULCERATIVE COLITIS PATIENTS

**Authors** Ghidersa A<sup>1,2</sup>, SA Tircol<sup>1,2</sup>, Negreanu L<sup>1,2</sup>, State M<sup>3,2</sup>, Dumitru A<sup>4,2</sup>

**Institute** 1 Bucharest Emergency University Hospital, Department of Gastroenterology, Bucharest, Romania; 2 Carol Davila University of Medicine and Pharmacy of Bucharest, Bucharest, Romania; 3 Colentina Clinical Hospital, Department of Gastroenterology, Bucharest, Romania; 4 Bucharest Emergency University Hospital, Department of Pathology, Bucharest, Romania

DOI 10.1055/s-0041-1724953

**Citation** Ghidersa A, Tircol SA, Negreanu L et al. eP464 THE ROLE OF SPECTRAL FOCUSED IMAGING IN DIAGNOSING SUBTLE MUCOSAL CHANGES IN ULCERATIVE COLITIS PATIENTS. *Endoscopy* 2021; 53: S250.

**Aims** The aim of this pilot study was to determine whether virtual chromoendoscopy, represented by SFI, a new optical chromoendoscopy system (from SonoScape) has the potential to enhance the rate of detection for subtle mucosal changes in patients with mild or inactive forms of ulcerative colitis (UC) in comparison to high definition white light endoscopy (HD-WLE).

**Methods** A group of 12 patients with UC were randomly assigned at a 1:1 ratio to undergo colonoscopy with high-definition white light (group A) or SFI (group B). The mucosal pattern, location of mucosal changes (measured in centimeters from the anal verge), morphology, size and duration of the endoscopic procedure were recorded, while disease activity was established following the Mayo Endoscopic Subscore for ulcerative colitis. Subsequent to endoscopic characterization, targeted biopsies (or random biopsies in case of normal colonic mucosa) were obtained from every segment for histopathological follow-up analysis.

**Results** The median endoscopic activity index, based on the Mayo ulcerative colitis endoscopic score, was 1 for both groups of patients. Taking into account the duration of the examination, the median value was 17.3 minutes in group A and 18.5 minutes in group B. Upon examining the concordance between endoscopic prediction of disease activity and histological findings, we obtained a 55% degree of conformity in group A, compared to a degree of 90% in group B.

**Conclusions** The pilot study performed has shown that image enhanced endoscopy using SFI might increase the rate of detection and demarcation for subtle inflammatory changes in the mucosa, correlating with potential histologic activity. Furthermore, this diagnostic tool could provide a more accurate and early identification for areas of minimal inflammation than the conventional techniques.

#### eP465 DIAGNOSTIC USE OF A CAP-ASSISTED-EGD TO EVALUATE THE OESOPHAGUS AND CARDIA (K III-STUDY)

**Authors** Wirsching HB<sup>1</sup>, Abdelhafez M<sup>1</sup>, Schmid RM<sup>1</sup>, Klare P<sup>2</sup>, Ott R<sup>3</sup>, Schulte-Frohlinde E<sup>4</sup>, Neu B<sup>5</sup>, Kurjak M<sup>3</sup>, von Delius S<sup>6</sup>

**Institute** 1 Technical University of Munich, Interdisciplinary Endoscopy Unit, University Hospital Rechts der Isar (MRI), Munich, Germany; 2 Technical University of Munich, Hospital Agatharied, Hausham, Germany; 3 Technical University of Munich, Gastroenterology Outpatient Clinic, Munich, Germany; 4 Technical University of Munich, Hospital Freising, Freising, Germany; 5 Technical University of Munich, Hospital Landshut-Achdorf (LAKUMED Kliniken), Landshut, Germany; 6 Technical University of Munich, Hospital Rosenheim (ROMED Kliniken Rosenheim), Rosenheim, Germany  
DOI 10.1055/s-0041-1724954

**Citation** Wirsching HB, Abdelhafez M, Schmid RM et al. eP465 DIAGNOSTIC USE OF A CAP-ASSISTED-EGD TO EVALUATE THE OESOPHAGUS AND CARDIA (K III-STUDY). *Endoscopy* 2021; 53: S250.

**Aims** Our aim was to evaluate the impact of a cap-assisted approach for diagnostic evaluation of the oesophagus compared to a standard esophagogastroduodenoscopy (EGD).

**Methods** This was a prospective multi-centric randomised controlled study. Subjects scheduled for elective EGD were randomized to undergo either standard EGD or cap-assisted-EGD. All lesions, number of biopsies, duration of examination, sedation doses and histology results were documented.

Our primary outcome was to compare the number of all detected lesions in the oesophagus between standard and cap-assisted-EGD. Secondary outcome measures were subclassification of lesions in the oesophagus, number of lesions in the upper gastrointestinal tract, sedation, number of oesophageal biopsies and their histology, and overall complications.

**Results** We included 1000 patients, 500 of whom received a cap-assisted-EGD. In the cap-assisted group, one or more lesions could be detected in 280 patients (1 lesion: n = 188, 2 lesions: n = 75, 3 lesions: n = 16, 4 lesions n = 1) in comparison to 264 patients in the standard group (1 lesion: n = 160, 2 lesions: n = 82, 3 lesions: n = 18, 4 lesions: n = 4) (p = 0,84).

Among the secondary outcomes, only endoscopic suspicion of Barrett's oesophagus (BE) was significantly more frequent within the cap-assisted group (n = 81) vs the standard EGD group (n = 58), (p = 0,039). However, the histologic correlation rate between these lesions was not statistically significant (p = 0,177).

**Conclusions** For routine examination of the oesophagus a cap-assisted-EGD does not seem to be superior to standard EGD regarding the detection rate of oesophageal lesions.

Although the rate of endoscopic suspicion for BE was higher using a cap-assisted approach, this could not be confirmed histologically.

#### eP466 PREDICTORS OF GASTROINTESTINAL TRANSIT TIMES IN COLON CAPSULE ENDOSCOPY

**Authors** Moen S<sup>1</sup>, Vuik FER<sup>1</sup>, Voortman T<sup>2</sup>, Kuipers E<sup>1</sup>, Spaander MCW<sup>1</sup>

**Institute** 1 Erasmus University Medical Center, Gastroenterology & Hepatology, Rotterdam, Netherlands; 2 Erasmus University Medical Center, Epidemiology, Rotterdam, Netherlands

DOI 10.1055/s-0041-1724955

**Citation** Moen S, Vuik FER, Voortman T et al. eP466 PREDICTORS OF

## GASTROINTESTINAL TRANSIT TIMES IN COLON CAPSULE ENDOSCOPY.

Endoscopy 2021; 53: S250.

**Aims** To obtain images of the entire gastrointestinal tract by Colon Capsule Endoscopy (CCE), transit times have to be fast enough to achieve completion while not missing any lesions. We aimed to identify predictors for CCE transit times in a population-based cohort.

**Methods** Participants received CCE with corresponding bowel preparation (2L polyethylene glycol and 2L water, split-dose) and booster regimen (10mg metoclopramide (if capsule remained in stomach > 1 hour) and 0.5L oral sulfate solution (OSS) split dose). The following predictors were assessed: age, gender, body mass index (BMI), smoking, coffee and fiber intake, physical activity, changed stool pattern, history of abdominal surgery, medication use and CCE findings. Multivariable logistic and linear regressions with backward elimination were performed to predict CCE completion rate and transit times.

**Results** 451 CCE procedures were analyzed. Completion rate was 51.9%. Participants with a lower BMI had a slower stomach, small bowel (SB) and total transit ( $\beta=0.104$ ,  $p=0.014$ ;  $\beta=0.137$ ,  $p=0.001$ ;  $\beta=0.120$ ,  $p=0.013$ ). Other predictors for slower SB transit were unchanged stool pattern ( $\beta=0.084$ ,  $p=0.049$ ) and no need to use the prescribed metoclopramide ( $\beta=0.140$ ,  $p=0.001$ ). Participants with higher fiber intake had a slower colonic transit ( $\beta=0.111$ ,  $p=0.025$ ). Completion rate was higher among older participants (OR 1.539, 95% CI 1.040-2.278,  $p=0.031$ ) and among those with changes in stool pattern (OR 2.273, 95% CI 1.202-4.297,  $p=0.012$ ), while those with history of abdominal surgery (OR 0.536, 95% CI 0.358-0.804,  $p=0.003$ ) had a lower completion rate.

**Conclusions** Lower BMI, unchanged stool pattern, fiber intake, younger age and history of abdominal surgery resulted in slower CCE transit times or lower completion rate. In future practice these factors can be considered to intensify the preparation protocol. The faster SB transit in participants who took metoclopramide due to a long stomach transit suggests that it might be beneficial to use metoclopramide in all CCE procedures.

## eP467 INTERIM RESULTS FROM A PROSPECTIVE MULTICENTRE TRIAL ON REAL TIME OPTICAL DIAGNOSIS- BLAST STUDY

**Authors** Hossain E<sup>1</sup>, Abdelrahim M<sup>1</sup>, Sharmila S<sup>1</sup>, Stefanovic M<sup>2</sup>, Hayee B<sup>3</sup>, Schoon E<sup>4</sup>, Papa S<sup>5</sup>, Bhandari P<sup>1</sup>

**Institute** 1 Portsmouth Hospital NHS Trust, Portsmouth, United Kingdom; 2 Diagnostični Center Bled, Ljubljana, Slovenia; 3 Kings College Hospital, London, United Kingdom; 4 Catharina Hospital, Eindhoven, Netherlands; 5 Fujifilm, Dusseldorf, Germany

DOI 10.1055/s-0041-1724956

**Citation** Hossain E, Abdelrahim M, Sharmila S et al. eP467 INTERIM RESULTS FROM A PROSPECTIVE MULTICENTRE TRIAL ON REAL TIME OPTICAL DIAGNOSIS- BLAST STUDY. Endoscopy 2021; 53: S251.

**Aims** We aim to use Blue Light Imaging (BLI) for real time optical diagnosis during colonoscopy to see if it could meet the PIVI standards.

**Methods** It is a multicentre, prospective study. All endoscopists were trained in BASIC classification. Patients undergoing colonoscopy with 700 series colonoscopes (Fujifilm Co, Tokyo, Japan) on Eluxeo platform from Fujifilm were recruited in the study. Endoscopists were asked to make real time optical diagnosis of colorectal polyps using High Definition White Light (HDWL) and BLI. The accuracy, sensitivity, specificity, and negative predictive value of high-confidence optical diagnosis (adenoma vs. non-adenoma) by either BLI or HDWL for polyps up to 10mm was calculated.

**Results** A total of 370 polyps  $\leq$  10mm were detected in 150 patients. The polyp sizes ranged from 1-10mm. 280 (75.6%) polyps were diminutive ( $\leq$ 5mm) and 255 (68.9%) were adenomas. 131(35.4%) polyps  $\leq$  5mm were detected in the recto-sigmoid. The overall accuracy of BLI compared to HDWL was 91.9% vs 88.9% ( $p=0.2$ ). Overall 82.4% polyps were diagnosed with high confidence with BLI compared to 77.4% with HDWL.

The overall analysis of all polyps  $\leq$ 10 mm is demonstrated in ► **tab. 1**.

► **Tab. 1** Colorectal polyps  $\leq$  10 mm (N= 370) 95 % CI

Accuracy	91.8 %	89.11 % to 95.17 %
Sensitivity	96.8 %	93.94 % to 98.64 %
Specificity	75.8 %	63.64 % to 85.46 %
NPV	86.2 %	75.71 % to 92.61 %

Further analysis of all colorectal diminutive polyps (N=280) demonstrated an accuracy of 89.3%, sensitivity of 94.2%, specificity of 77.1% and NPV of 84.4%. Further sub group analysis of recto-sigmoid diminutive polyps (N= 131) demonstrated accuracy of 89.5%, sensitivity of 95.8%, specificity of 78.2% and **NPV of 90.9%**.

The overall post polypectomy surveillance interval was correctly predicted in 92.5% patients according to ESGE guidelines.

**Conclusions** Real time diagnosis in trained endoscopists using HDWL and BLI along with BASIC meets both PIVI criteria for diminutive recto-sigmoid polyps.

## eP468V NOVEL TECHNOLOGY TO IMPROVE SAFETY OF ESD IN WESTERN SETTING

**Authors** Hossain E<sup>1</sup>, Abdelrahim M<sup>1</sup>, Bhandari P<sup>1</sup>

**Institute** 1 Portsmouth Hospital NHS Trust, Portsmouth, United Kingdom

DOI 10.1055/s-0041-1724957

**Citation** Hossain E, Abdelrahim M, Bhandari P et al. eP468V NOVEL TECHNOLOGY TO IMPROVE SAFETY OF ESD IN WESTERN SETTING. Endoscopy 2021; 53: S251.

Intra-procedural and delayed bleed have been significant risk factors in ESD leading to increased complications thereby steepening the learning curve especially in Western settings. In this video we demonstrate the Olympus EVIS X1 endoscopy system with its novel Red Dichromatic Imaging (RDI) which enhances the visibility of deep blood vessels and bleeding sources. The video clearly demonstrates both the above advantages of RDI. We also demonstrate the use of dual knife with its tip withdrawn and using spray/swift coagulation can result in effective haemostasis thereby minimising instrument exchange and reducing the risk of losing visibility of the bleeding point.

## eP469 PERCUTANEOUS TRANSHEPATIC CHOLANGIOSCOPY - AN OPTION FOR THE TREATMENT OF INTRAHEPATIC LITHIASIS

**Authors** Correia C<sup>1</sup>, Cardoso MJ<sup>2</sup>, Almeida N<sup>1</sup>, Duque M<sup>1</sup>, Agostinho AG<sup>1</sup>, Alexandrino H<sup>1</sup>, Figueiredo P<sup>1</sup>

**Institute** 1 Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal; 2 Faculty of Medicine, University of Coimbra, Coimbra, Portugal

DOI 10.1055/s-0041-1724958

**Citation** Correia C, Cardoso MJ, Almeida N et al. eP469 PERCUTANEOUS TRANSHEPATIC CHOLANGIOSCOPY - AN OPTION FOR THE TREATMENT OF INTRAHEPATIC LITHIASIS. Endoscopy 2021; 53: S251.

**Aims** Stenosis of hepaticojejunostomy (HJ) is a potentially serious postoperative complication after pancreaticoduodenectomy (PD). It causes biliary stasis leading to intrahepatic lithiasis and recurrent cholangitis.

**Methods** We herein describe the case of a patient who underwent PD with Roux-en-Y reconstruction for an ampullary carcinoma six years earlier, developing late HJ stenosis.

**Results** The first episode of cholangitis was four years after surgery. After a trial of percutaneous transhepatic dilation and drainage (PTD), the episodes of cholangitis recurred.

A repeat Magnetic Resonance Cholangiography showed a permeable HJ and development of intrahepatic lithiasis. An Endoscopic Retrograde Cholangiopancreatography with double-balloon enteroscope was unsuccessful due to a slight



twisting of the Roux-en Y anastomosis and the patient was placed with a percutaneous transanastomotic drain to prevent further episodes of cholangitis.

Because of the proximity of the pancreatic anastomosis to the HJ, a surgical approach was considered technically difficult and potentially hazardous. After multidisciplinary discussion, a Percutaneous Transhepatic Cholangioscopy was decided.

The procedure was performed with a dual-image system displaying the progression of the procedure with cholangiographic images alongside the cholangioscopic view, enabling the exact location of the cholangioscope inside the biliary tree.

However, since some debris remained even after copious lavage, a percutaneous transanastomotic drain was left in order to prevent cholangitis. This was removed a week later after repeat cholangiography confirmed clearance of the intrahepatic ducts and a permeable HJ. Six months after the procedure the patient is asymptomatic, with no clinical or biochemical signs of cholangitis or cholestasis.

**Conclusions** This innovative multidisciplinary approach ensured a clearance of the intrahepatic bile ducts, without morbidity or the need for reoperation, making it a therapeutic option in cases of intrahepatic stones and/or complex intrahepatic biliary pathology.

It is a new technique with enormous potential to grow but both worldwide experience and the literature on this topic is still scarce.

## eP470 EFFICACY AND SAFETY OF FULL THICKNESS RESECTION (FTR) FOR COLONIC LESIONS IN A TERTIARY CARE CENTER

**Authors** Magarotto A<sup>1</sup>, Cavalcoli F<sup>1</sup>, Mancini A<sup>1</sup>, Masci E<sup>1</sup>

**Institute 1** IRCCS Istituto Nazionale dei Tumori, Diagnostic and Therapeutic Endoscopy Unit, Milan, Italy

DOI 10.1055/s-0041-1724959

**Citation** Magarotto A, Cavalcoli F, Mancini A et al. eP470 EFFICACY AND SAFETY OF FULL THICKNESS RESECTION (FTR) FOR COLONIC LESIONS IN A TERTIARY CARE CENTER. *Endoscopy* 2021; 53: S252.

**Aims** Aim of this study is to determine the effectiveness and safety of FTR of colic lesions not amenable to resection with traditional techniques or for treating lesions bigger than 2 cm or with a combined endoscopic treatment (EMR and FTR) or with multiple FTR.

**Methods** We describe our experience, in a tertiary care center, using the FTRD for advanced polyps or scarred lesions. In this study we analyzed demographic, endoscopic, histological data, rate of success and complication.

**Results** Between April 2017 and June 2020, 23 patients (15 males) underwent a colonoscopy with FTR. The mean age was 69 years. In this series of patient, 12 had recurrent adenomas, 7 had high-grade dysplasia or intramucosal carcinoma and 4 had a non lifting lesion. Resection was technically successful in all patients. One patient underwent three consecutive procedures in order to obtain a complete resection of the lesion. One patient underwent a combined resection with EMR and FTR for the non lifting part of the polyp. Histologically complete resection (R0) was achieved in 21/23 (91%). There were two major complications (perforation), with a total rate of complication of 8% (2/23 patients). In 3/23 (13%) we found a residual lesion at the follow up colonoscopy, performed between 4 and 6 months. Two of these patients were treated endoscopically, one as a completion of multiple consecutive FTR and one with traditional EMR of the residual adenoma. The third patient decided not to intervene.

**Conclusions** In our experience, FTR is a safe and useful technique for treating colonic lesions not amenable to resection with traditional technique or in patient with a high risk for surgery. It could be useful, in multiple consecutive procedures, for treating lesion bigger than 2 cm or in combined procedures in order to complete the resection in non lifting part of lesion.

## eP471 ENDOSCOPIC RESECTION BY SUBMUCOSAL TUNNELING VERSUS ENDOSCOPIC EXCAVATION OF THE SUBMUCOSA FOR SUBMUCOSAL OF THE ESOPHAGEAL AND STOMACH MUSCULARIS PROPRIA – SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** Ponte Neto FL<sup>1</sup>, Sagae VMT<sup>1</sup>, Ribeiro IB<sup>1</sup>, de Moura DTH<sup>1</sup>, Mancini FC<sup>1</sup>, Boghossian MB<sup>1</sup>, Bernardo WM<sup>1</sup>, Ide E<sup>1</sup>, Miyajima NT<sup>1</sup>, De Moura EGH<sup>1</sup>

**Institute 1** Hospital das Clínicas da Faculdade de Medicina da USP, Gastrointestinal Endoscopy Unit, São Paulo, Brazil

DOI 10.1055/s-0041-1724960

**Citation** Ponte Neto FL, Sagae VMT, Ribeiro IB et al. eP471 ENDOSCOPIC RESECTION BY SUBMUCOSAL TUNNELING VERSUS ENDOSCOPIC EXCAVATION OF THE SUBMUCOSA FOR SUBMUCOSAL OF THE ESOPHAGEAL AND STOMACH MUSCULARIS PROPRIA – SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S252.

**Aims** Tumors of the submucosa (SMT) present as elevated lesions with intact mucosa. Until the emergence of safe endoscopic resection techniques, surgical resection was the main form of removal. This study aims to compare endoscopic submucosal tunneling (STER) and endoscopic submucosa (ESE) excavation for SMT resection of the muscle itself present in the esophagus and stomach, evaluating complete resection rates, en bloc resection rates, recurrence, perforation, complications, bleeding, procedure time and hospital stay.

**Methods** This study was carried out by the PRISMA guidelines and registered with PROSPERO. We searched electronically in databases (MEDLINE, EMBASE and Cochrane Library) until August 2020. We used ROBINS-I to assess the risk of bias. An analysis was performed using RevMan 5.4; Cochrane Collaboration, Oxford, UK. The quality of the evidence was analyzed using the GRADE.

**Results** Five studies were selected, after evaluating 3528 articles. Comparing 269 patients in the STER group and 319 in the ESE group. Only observational studies are included. There was no statistical difference between the groups when evaluated as complete resection rates (RD:0.00, 95% CI:-0.05–0.06, p:0.89, I<sup>2</sup>:62%), block resection (RD:-0.05, 95% CI:-0.16–0.06, p:0.41, I<sup>2</sup>:57%), recurrence (RD:0.00, 95% CI:-0.02–0.03, p:0.82, I<sup>2</sup>:0%), perforation (RD:0.00, 95% CI:-0.02–0.02, p:0.96, I<sup>2</sup>:0%), complications (RD: 0.00, 95% CI:-0.07–0.08, p:0.92, I<sup>2</sup>:0%), bleeding (RD: 0.00, 95% CI:-0.02–0.02, p:0.91, I<sup>2</sup>:0%) and hospital stay (MD:0.61, 95% CI:-0.23–1.45, p:0.15, I<sup>2</sup>:95%). Evaluating the time of the procedure, it was neces-

► **Tab. 1** Results of the main outcomes

Outcome	RD(risk difference)/ MD (mean difference)	95%CI	p (value indicating level of statistical significance)	Heterogeneity (I <sup>2</sup> %)
Complete resection	0.00	-0.05–0.06	0.89	62
Perforation	0.00	-0.02–0.02	0.96	0
Bleeding	0.00	-0.02–0.02	0.91	0
Time	24.62	20.04–29.20	<0.00001	38

sary a longer time to perform STER (MD:24.62, 95% CI:20.04–29.20,  $p < 0.00001$ ,  $I^2:38\%$ ) (► **Tab. 1**).

**Conclusions** STER and ESE are safe and more widespread techniques for endoscopic resection of SMT of the muscularis propria in the esophagus and stomach. ESE tends to be performed in less time than the STER. The rates of complete resection, block resection, recurrence, perforation, complications, bleeding and hospital stay did not show any significant difference.

## eP472 GLYCEMIC AND HEPATIC OUTCOMES AFTER ENDOSCOPIC DUODENAL MUCOSAL RESURFACING: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** de Oliveira GHP<sup>1</sup>, de Moura DTH<sup>1</sup>, McCarty TR<sup>2</sup>, Funari MP<sup>1</sup>, Ribeiro IB<sup>1</sup>, Sagae VMT<sup>1</sup>, Bernardes WM<sup>1</sup>, Freitas Junior JR<sup>1</sup>, Souza GMV<sup>1</sup>, Moura EGH<sup>1</sup>

**Institute** 1 Hospital das Clínicas, University of São Paulo School of Medicine, Gastrointestinal Endoscopy Unit, São Paulo, Brazil; 2 Harvard Medical School - Brigham and Women's Hospital, Division of Gastroenterology, Hepatology and Endoscopy, Boston, United States

DOI 10.1055/s-0041-1724961

**Citation** de Oliveira GHP, de Moura DTH, McCarty TR et al. eP472 GLYCEMIC AND HEPATIC OUTCOMES AFTER ENDOSCOPIC DUODENAL MUCOSAL RESURFACING: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S253.

**Aims** Duodenal mucosal resurfacing (DMR) is a groundbreaking endoscopic bariatric and metabolic therapy (EBMT). It is an upper endoscopic procedure that, using a catheter, performs mucosal ablation in postpapillary duodenum to achieve better glycemic control. This study aimed to evaluate the glycemic and hepatic effects of this new procedure.

**Methods** Only studies evaluating the Revita duodenal mucosal resurfacing procedure (Fractyl Laboratories) device were included. Electronic searches were performed using the Medline (PubMed), LILACS, Cochrane Library, and EMBASE databases, from inception to November, 2020. The primary outcome measurement in this study was the effectiveness of the DMR procedure. Defined by the change in metabolic parameters at 3 and 6 months post-procedure, including changes in HbA1C levels, fasting plasma glucose (FPG), liver enzymes or reduction on hepatic steatosis as measured by magnetic resonance imaging derived proton-density-fat-fraction (MRI-PDFF).

**Results** Based upon this study including 127 patients from 4 studies. There were great changes in glycemic parameters at 3 and 6 months, post-DMR. At 3 months after the procedure was observed a HbA1C decrease of 1.72% [(95% CI, 0.25 to 3.19);  $P=0.020$ ]. HbA1C decreased 0.94%, [(95% CI, 0.68 to 1.21)  $P < 0.001$ ] after 6 months of DMR. FPG was improved, 15.84 mg/dL drop [(95% CI, 2.91 to 28.77);  $P=0.020$ ] after 6 months. ALT levels were noted to significantly improve at both 3 and 6 months post-procedure. With a reduction of 10.48 U/L [(95% CI, 8.75 to 12.22);  $P < 0.001$ ] after 3 months which persisted at 6 months 10.82 U/L [(95% CI, 4.80 to 16.84);  $P < 0.001$ ]. After 3 months of DMR a 6.59% reduction in liver fat was noted [(95% CI, 5.05 to 8.12);  $P < 0.001$ ] when evaluated by MRI-PDFF.

**Conclusions** The currently available data suggests that DMR may be used as an alternative treatment for short-term glycemic control and to reduce hepatic steatosis in non-insulin-dependent patients with sub-optimal control T2D.

## eP473V GAS-ALTERNATING-WATER INFUSION METHOD: A NOVEL TECHNIQUE OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL TUMORS REGARDLESS OF GRAVITY

**Authors** Chen S<sup>1</sup>, Shi H<sup>1</sup>, He H<sup>1</sup>, Dong F<sup>2</sup>, Jiang Y<sup>1</sup>, Huang J<sup>1</sup>, Lin J<sup>1</sup>

**Institute** 1 Fujian Medical University Cancer Hospital, Gastrointestinal Endoscopy, Fuzhou, China; 2 Fujian Medical University, School of Medical Technology and Engineering, Fuzhou, China

DOI 10.1055/s-0041-1724962

**Citation** Chen S, Shi H, He H et al. eP473V GAS-ALTERNATING-WATER INFUSION METHOD: A NOVEL TECHNIQUE OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL TUMORS REGARDLESS OF GRAVITY. *Endoscopy* 2021; 53: S253.

**Aim** To evaluate the feasibility and safety of ESD using gas-alternating-water infusion method (GAW-ESD) for colorectal laterally spreading tumors.

**Method** All the patients were kept in left lateral position during GAW-ESD as follows:(1) C-shaped mucosal incision. (2) The colorectal lumen was instilled with normal saline, followed by a V-shaped dissection on both below and above the liquid surface. (3) Post-ESD defect was closed underwater.

**Result** GAW-ESD was completed without any complications.

**Conclusion** GAW-ESD is safe and effective for en-bloc resection of colorectal tumors, with the advantages of quick gas/liquid switch, buoyancy effect, heat-sink effect, optical zoom effect, and downsizing effect.

## eP474V NEW OPTION IN THE APPROACH OF PANCREATIC NECROSIS

**Authors** Gamelas V<sup>1</sup>, Santos S<sup>1</sup>, Canha I<sup>1</sup>, Carvalho D<sup>1</sup>, Ramos G<sup>1</sup>

**Institute** 1 Centro Hospitalar Universitário de Lisboa Central, Lisboa, Portugal

DOI 10.1055/s-0041-1724963

**Citation** Gamelas V, Santos S, Canha I et al. eP474V NEW OPTION IN THE APPROACH OF PANCREATIC NECROSIS. *Endoscopy* 2021; 53: S253.

The approach of acute pancreatitis complications, such as walled-off necrosis, is challenging and the poor prognosis may be improved by using minimally invasive techniques. After transgastric endoscopic drainage with the placement of a lumen-apposing metal stent, the necrotic site may be accessed for endoscopic necrosectomy. The instruments available were originally designed for other uses, not always providing adequate visual control and removal of necrotic fragments. The EndoRotor (Interscope Medical, Inc), is a recently proposed instrument, which allows to cut and simultaneously aspirate the necrotic content.

We present video-documentation of its use, allowing to discuss its advantages/disadvantages/usefulness in this setting.

## eP475 COST COMPARISONS OF ENDOSCOPIC AND SURGICAL RESECTION OF T1 RECTAL CANCER

**Authors** Arthursson V<sup>1</sup>, Rosén R<sup>1</sup>, Norlin JM<sup>2</sup>, Gralén K<sup>2</sup>, Toth E<sup>3</sup>, Syk I<sup>1</sup>, Thorlacius H<sup>1</sup>, Rönnow CF<sup>1</sup>

**Institute** 1 Lund University, Department of Clinical Sciences, Section of Surgery, Skåne University Hospital, Malmö, Sweden; 2 The Swedish Institute for Health Economics, Lund, Sweden; 3 Lund University, Department of Clinical Sciences, Section of Gastroenterology, Skåne University Hospital, Malmö, Sweden

DOI 10.1055/s-0041-1724964

**Citation** Arthursson V, Rosén R, Norlin JM et al. eP475 COST COMPARISONS OF ENDOSCOPIC AND SURGICAL RESECTION OF T1 RECTAL CANCER. *Endoscopy* 2021; 53: S253.

**Aims** The aim of this study was to compare costs of endoscopic and surgical resection and to investigate hypothetical cost scenarios for the treatment of T1 rectal cancer (RC).

**Methods** Population-based cohort study on prospectively collected data on T1 RC patients treated using endoscopic submucosal dissection (ESD), transanal endoscopic microsurgery (TEM), open (OR), laparoscopic (LR) or robotic (RR) resection in Sweden (2011-2017). Cost-minimisation analysis were calculated on direct costs for procedural and 1-year follow-up periods and included in hypothetical cost scenarios based on the distribution of high risk features of lymph node metastases (LNM).

**Results** 85 patients with T1 RC undergoing, ESD (n=16), TEM (n=17), OR (n=35), LR (n=9), and RR (n=8) were included. ESD had a total 1-year cost of 5 165€ and was significantly less expensive compared to TEM (14871€), OR (21453€), LR (22488€) and RR (26562€). 68% of 779 cases of T1 RC included

in the national cohort had high risk features of LNM. The hypothetical scenario of performing ESD on all T1 RC had the lowest total 1-year per patient cost compared to all other alternatives.

**Conclusions** This is the first study analysing total 1-year costs of endoscopic and surgical methods to resect T1 RC showing that the cost of ESD was significantly lower compared to TEM and surgical resection. In fact, based on hypothetical cost scenarios, ESD is still justifiable from a cost perspective even when all high risk cases are followed by surgery in accordance to guidelines.

### eP476 COMPUTER AIDED DETECTION (CADE) IN COLONOSCOPY: AN END-USER EXPERIENCE USING TWO SYSTEMS

**Authors** Van Langendonck S<sup>1,2</sup>, Corens P<sup>2</sup>, Stragier E<sup>3</sup>, Vanderstraeten E<sup>1</sup>, Walgraeve D<sup>3</sup>, Bouhadan S<sup>2</sup>, Dewint P<sup>1,2</sup>

**Institute** 1 Maria Middelaers Hospital, Gastro-Enterology, Gent, Belgium; 2 University Hospital Antwerp, Gastro-Enterology, Edegem, Belgium; 3 Jessa Hospital, Gastro-Enterology, Hasselt, Belgium  
DOI 10.1055/s-0041-1724965

**Citation** Van Langendonck S, Corens P, Stragier E et al. eP476 COMPUTER AIDED DETECTION (CADE) IN COLONOSCOPY: AN END-USER EXPERIENCE USING TWO SYSTEMS. *Endoscopy* 2021; 53: S254.

**Aims** CAde is a novel technology developed to increase adenoma detection rate (ADR). Recent studies have shown its effectiveness, however data on its acceptance in the endoscopy suite is lacking. This study investigates the perception of endoscopists towards CAde.

**Methods** We performed a prospective, multicenter study including endoscopists at different levels of experience. No endoscopists had prior experience with CAde. 2 different systems were used: Medtronic GI Genius and Fujifilm CAD EYE. For 10 weeks, all colonoscopies performed with CAde were prospectively registered and assessed via a questionnaire, using LimeSurvey. In these, using slider bars (0-100), we explored the subjective experience and perceived performance of CAde, as well as the number of detected relevant lesions by the endoscopist and/or CAde. Relevant lesions were defined as adenomas and sessile serrated lesions.

The data were analyzed using SPSSv26, normality was tested with a Shapiro-Wilk test and continuous variables were compared with an independent sample T-test.

**Results** 791 colonoscopies were performed by 19 endoscopists of whom 3 trainees and 4 young (<5 years experience) consultants.

In total 720 lesions were detected, 54 thanks to CAde, which entails an increase of 8.1% lesions detected and an increase in lesion detection rate from 41.2% to 43.0%.

Endoscopists scored CAde as user-friendly (63.9), not distracting (25.1), nor time-wasting (26.6). In contrast, the auditory signal wasn't positively perceived (23.1). While endoscopists state they're triggered to better characterize the polyps (70.6), they don't feel their ADR increases (53.3), nor do they feel more confident (57.8). Overall CAde was experienced as having some added value (61.9), without significant differences between the 2 systems.

Trainees feel more positive about CAde, giving higher scores for perceived ADR increase (64.9;  $p=0.002$ ), confidence (65.1;  $p=0.037$ ) and overall added value (74.5;  $p<0.001$ ).

**Conclusions** The added value of CAde is perceived lower than the increase in lesion detection probably warrants. This might hinder the implementation of CAde in daily practice. More effort will have to be invested in convincing endoscopists to start using this technology.

### eP477 DEVELOPMENT OF KNOWLEDGE-BASED CLINICAL DECISION SUPPORT SYSTEM FOR PATIENTS INCLUDED IN COLORECTAL SCREENING PROGRAM

**Authors** Lorenzo-Zúñiga V<sup>1</sup>, Bustamante-Balén M<sup>1</sup>, Argüello L<sup>1</sup>, Alonso N<sup>1</sup>, Cristina S<sup>1</sup>, María G<sup>1</sup>, Vicente PB<sup>1</sup>

**Institute** 1 Hospital Universitari i Politècnic La Fe, Endoscopy Unit, Department of Gastroenterology, Valencia, Spain

DOI 10.1055/s-0041-1724966

**Citation** Lorenzo-Zúñiga V, Bustamante-Balén M, Argüello L et al. eP477 DEVELOPMENT OF KNOWLEDGE-BASED CLINICAL DECISION SUPPORT SYSTEM FOR PATIENTS INCLUDED IN COLORECTAL SCREENING PROGRAM. *Endoscopy* 2021; 53: S254.

**Aims** Clinical Decision Support Systems (CDSSs) have recently attracted attention as a method for minimizing medical errors. Colorectal (CRC) screening programs represent a large volume of procedures that need a follow-up endoscopy. A knowledge-based CDSS (K-CDSS) is a technology which contains clinical rules and associations of compiled data that assist with clinical decision-making tasks. Existing CDSSs are limited. To overcome this limitation we develop a K-CDSS based on variables and clinical rules introduced by medical specialist for management of patients included in CRC screening and surveillance of colorectal polyps.

**Methods** We collected information on 48 variables from hospital colonoscopy records at a single centre in Spain between September 2020 and October 2020. Using DILEMMA Solutions (<https://www.dilemmasolution.com>) we developed the prototype K-CDSS (PoliCare), to provide tailored recommendations by combining patients data and current guidelines recommendations. The accuracy of rules was verified using four scenarios (normal colonoscopy, lesions different than polyps, non-advanced adenomas and advanced adenomas). We studied the degree of agreement between the clinical assessments made by expert doctors and nurses equipped with K-CDSS. Two experts confirmed a correlation between guidelines and PoliCare recommendations.

**Results** 56 consecutive endoscopy cases from colorectal screening program were included (62.8 years; range 53-71). Colonoscopy results were: absence of colon lesions ( $n=7$ , 12.5%), lesions in the colon that are not polyps ( $n=3$ , 5.4%) and resected colonic polyps ( $n=46$ , 82.1%; 100% R0 resection). Patients with resected polyps presented non-advanced adenoma ( $n=21$ , 45.6%) or advanced lesions ( $n=25$ , 54.4%). There were no differences in erroneous orders with Policare (Kappa value 1.0).

**Conclusions** The use of K-CDSS can easily integrated into the workflow and can be carry out by endoscopy nursery to manage patients included in CRC screening and surveillance of colorectal polyps.

### eP478 DEVELOPMENT OF PATHOLOGY DETECTION ALGORITHMS BASED ON CONVOLUTIONAL NEURAL NETWORKS (CNN)

**Authors** Khryashchev V<sup>1</sup>, Kashin S<sup>2</sup>, Merkulova A<sup>2</sup>, Stepanova O<sup>1</sup>, Srednyakova A<sup>1</sup>, Tarasova E<sup>2</sup>, Kazina E<sup>1</sup>

**Institute** 1 P.G. Demidov Yaroslavl State University, Infocommunication and Radiophysics Department, Yaroslavl, Russian Federation; 2 Yaroslavl Regional Cancer Hospital, Endoscopy Department, Yaroslavl, Russian Federation  
DOI 10.1055/s-0041-1724967

**Citation** Khryashchev V, Kashin S, Merkulova A et al. eP478 DEVELOPMENT OF PATHOLOGY DETECTION ALGORITHMS BASED ON CONVOLUTIONAL NEURAL NETWORKS (CNN). *Endoscopy* 2021; 53: S254.

**Aims** Development and research of algorithms for detecting pathologies in endoscopic images of stomach based on different architectures of CNN.

**Methods** As the basis for the detection algorithms two efficient CNN architectures were chosen: Single Shot Detector (SSD) and RetinaNet. To create the database for the algorithms training and testing 54 videos of endoscopic examinations were used. From endoscopic videos every fifth frame was selected. Collected database of endoscopic images included 5942 frames. Due to small size of the endoscopic images database we additionally used pre-training of CNN on images from ImageNet database and data augmentation. For evaluating the quality of the algorithms we used AP (Average Precision) and mAP (Mean Average Precision) as ones of the key metrics for analyzing the quality of the object detectors.

**Results** All collected images were annotated and divided into three classes: early gastric cancer (902 images), advanced cancer (297 images), benign lesions: intestinal metaplasia, adenoma, hyperplastic polyp, erosion, ulcer, foveolar hyperplasia, xanthoma (1772 images). The database was divided into training (5594 frames) and test (348 frames) datasets with images belonging to different patients. Algorithms for detecting pathologies in endoscopic images based on CNN SSD and RetinaNet were developed, trained and tested on our database. The AP metric values calculated for the developed algorithms for various classes are summarized in ►**Tab. 1**. The mAP metric value was 0.771 for the CNN SSD and 0.808 for the RetinaNet algorithm.

**Conclusions** Testing has shown that the algorithm based on RetinaNet outperforms the algorithm based on SSD on the AP metric for all classes covered in this study. The mAP metric value for the RetinaNet algorithm was also higher than for the SSD (by 0.037). The obtained values of the metrics are high for both algorithms and prove the possibility of using CNN for detecting pathologies in endoscopic images.

► **Tab. 1**

CNN used as the basis of the algorithm	AP «cancer»	AP «early cancer»	AP «other pathology»
SSD	0.642	0.937	0.453
RetinaNet	0.873	0.976	0.524

## eP479 COMPUTER-AIDED CHARACTERISATION OF COLORECTAL POLYPS USING ARTIFICIAL INTELLIGENCE

**Authors** Kader R<sup>1</sup>, Brandao P<sup>2</sup>, Ahmad O<sup>1</sup>, Hussein M<sup>3</sup>, Islam S<sup>1</sup>, De Carvalho T<sup>2</sup>, Puyal J<sup>2</sup>, Sehgal V<sup>4</sup>, Mountney P<sup>2</sup>, Vega R<sup>4</sup>, Seward E<sup>4</sup>, Stoyanov D<sup>1</sup>, Lovat L<sup>1</sup>

**Institute** 1 University College London (UCL), Wellcome/EPSRC Centre for Interventional and Surgical Sciences (WEISS), London, United Kingdom; 2 Odin Vision, London, United Kingdom; 3 University College London (UCL), Division of Surgery and Interventional Sciences, London, United Kingdom; 4 University College London Hospital, Gastroenterology, London, United Kingdom  
DOI 10.1055/s-0041-1724968

**Citation** Kader R, Brandao P, Ahmad O et al. eP479 COMPUTER-AIDED CHARACTERISATION OF COLORECTAL POLYPS USING ARTIFICIAL INTELLIGENCE. *Endoscopy* 2021; 53: S255.

**Aims** Optical diagnosis is the in-vivo prediction of colorectal polyp histopathology but inter-observer variability amongst endoscopists has limited its application in clinical practice. Artificial Intelligence, using deep learning, may lead to a new generation of clinical support tools capable of characterising polyps. Our aim was to develop a convolutional neural network (CNN) to characterise colorectal polyps as adenomatous or non-adenomatous.

**Methods** Data was collected from unaltered colonoscopy videos from 8 endoscopists at a single centre using Olympus 260 and 290 series scopes. Histopathological classification was recorded for each polyp.

The dataset was created using Narrow Band Imaging (NBI) and NBI-Near Focus (NBI-NF) video sequences. Frames with limited visualisation of the polyp surface texture were excluded. The remaining frames were annotated with bounding boxes around polyps and labelled with the histopathology. The annotations were referenced as the gold standard.

A ResNet-101 CNN pre-trained on ImageNet was developed to classify the visual appearance of colorectal polyps as adenomatous or non-adenomatous. During inference, the probability scores computed by the CNN were used as confidence for its prediction. A score above 70% was defined as a confident

polyp characterisation of adenomatous, below 30% as non-adenomatous, and 30-70% as a low confidence characterisation.

**Results** The dataset consisted of 187 polyps (122 adenomas, 48 sessile serrated lesions, 17 hyperplastic) from 71 patients with a total of 41,171 frames. Data was split into a training (~65%), validation (~5%), and testing set (~30%) with no overlap of data/patients.

The CNN achieved a confident diagnosis in 84% of frames in the test set. On a per-frame analysis, excluding low confident diagnoses, the CNN diagnosed adenomas with a sensitivity of 92% and specificity of 90%. On a per-polyp analysis, sensitivity was 93% and specificity 87%. The area under the curve was 96%.

**Conclusions** The CNN achieved promising results to differentiate adenomatous from non-adenomatous polyps.

► **Tab. 1**

	Training Dataset	Validation Dataset	Testing Dataset
Number of patients	38	7	26
Number of adenomas polyp (frames)	75 (22,007)	6 (1,143)	41 (8,218)
Number of non-adenomatous polyps (frames)	40 (5,412)	2 (788)	23 (3,603)
Total number of frames	27,419	1,931	11,821

## eP480 THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE ADENOMA DETECTION RATE (ADR): A COMPARISON BETWEEN EXPERIENCED AND TRAINEE ENDOSCOPISTS' ADR

**Authors** Bernhofer S<sup>1</sup>, Maieron A<sup>1</sup>  
**Institute** 1 Universitätsklinikum St.Pölten, Gastroenterology and Hepatology, St. Pölten, Austria

DOI 10.1055/s-0041-1724969

**Citation** Bernhofer S, Maieron A eP480 THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE ADENOMA DETECTION RATE (ADR): A COMPARISON BETWEEN EXPERIENCED AND TRAINEE ENDOSCOPISTS' ADR. *Endoscopy* 2021; 53: S255.

**Aims** Colorectal cancer (CRC) is the second most common cause of cancer death in the European Union. Most cases of CRC arise out of adenomas, which could be easily treated in a timely manner by endoscopic removal. Many studies have proven that a high adenoma detection rate (ADR) reduces the incidence of CRC. Artificial Intelligence (AI) is a promising new tool to achieve a high ADR. The aim of this study is to evaluate the impact of AI on the frequency of adenoma detection by endoscopists in training in comparison to the frequency of detection by senior endoscopists.

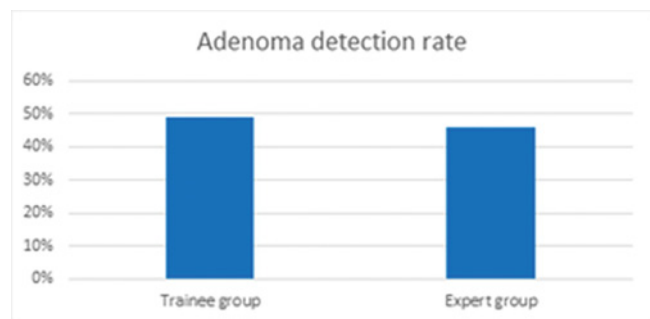
**Methods** Data from all patients who underwent colonoscopy with a GI Genius enhanced colonoscope were collected within a period of two months. Endoscopists were divided into two groups, a trainee group (7 endoscopists; <500 colonoscopies) and an expert group (4 endoscopists; >1000 colonoscopies). The polyp and adenoma detection rates of both groups were calculated and compared using cross tabulation and the chi-square test.

**Results** So far 150 patients (77 male, 73 female), mean age: 60 (SD± 16) years have been included. The most common indications for colonoscopy were screening (21,3%), surveillance (17,3%), GI disturbances (12,7%), bleeding/



anemia (12%), CED (10,7%) and elective polypectomy (10%). Most procedures were done by the trainee group (n=94). In total 311 polyps were removed. The polyp detection rate (PDR) was 69,1% in the trainee group and 67,9% in the expert group. The adenoma detection rate was 48,9% in the trainee group and 46,4% in the expert group. There was no significant difference between both groups in terms of PDR ( $p=0,869$ ) and ADR ( $p=0,766$ ).

**Conclusions** Our interim analysis shows that Artificial Intelligence can help to minimize the difference of ADR between experienced and trainee endoscopists.



► Fig.1

## eP481 DETECTION OF CELIAC DISEASE USING A DEEP LEARNING ALGORITHM

**Authors** Scheppach MW<sup>1</sup>, Rauber D<sup>2</sup>, Mendel R<sup>2</sup>, Palm C<sup>2</sup>, Byrne MF<sup>3</sup>, Messmann H<sup>1</sup>, Ebigbo A<sup>1</sup>

**Institute** 1 Augsburg University Hospital, Department of Gastroenterology, Augsburg, Germany; 2 Ostbayerische Technische Hochschule, Regensburg, Germany; 3 University of British Columbia, Division of Gastroenterology, Vancouver, Canada

DOI 10.1055/s-0041-1724970

**Citation** Scheppach MW, Rauber D, Mendel R et al. eP481 DETECTION OF CELIAC DISEASE USING A DEEP LEARNING ALGORITHM. *Endoscopy* 2021; 53: S256.

**Aims** Celiac disease (CD) is a complex condition caused by an autoimmune reaction to ingested gluten. Due to its polymorphic manifestation and subtle endoscopic presentation, the diagnosis is difficult and thus the disorder is underreported. We aimed to use deep learning to identify celiac disease on endoscopic images of the small bowel.

**Methods** Patients with small intestinal histology compatible with CD (MARSH classification I-III) were extracted retrospectively from the database of Augsburg University hospital. They were compared to patients with no clinical signs of CD and histologically normal small intestinal mucosa. In a first step MARSH III and normal small intestinal mucosa were differentiated with the help of a deep learning algorithm. For this, the endoscopic white light images were divided into five equal-sized subsets. We avoided splitting the images of one patient into several subsets. A ResNet-50 model was trained with the images from four subsets and then validated with the remaining subset. This process was repeated for each subset, such that each subset was validated once. Sensitivity, specificity, and harmonic mean (F1) of the algorithm were determined.

**Results** The algorithm showed values of 0.83, 0.88, and 0.84 for sensitivity, specificity, and F1, respectively. Further data showing a comparison between the detection rate of the AI model and that of experienced endoscopists will be available at the time of the upcoming conference.

**Conclusions** We present the first clinical report on the use of a deep learning algorithm for the detection of celiac disease using endoscopic images. Further evaluation on an external data set, as well as in the detection of CD in real-time, will follow. However, this work at least suggests that AI can assist endoscopists in the

endoscopic diagnosis of CD, and ultimately may be able to do a true optical biopsy in live-time.

## eP482 PRACTICAL DEEP LEARNING TOOL FOR SCORING OF ULCERATIVE COLITIS DISEASE ACTIVITY IN CENTRAL READING

**Authors** Byrne MF<sup>1</sup>, East JE<sup>2</sup>, Iacucci M<sup>3</sup>, Travis SP<sup>4</sup>, Kalapala R<sup>5</sup>, Duvvur NR<sup>5</sup>, Rughwani H<sup>5</sup>, Singh AP<sup>5</sup>, Monsurate R<sup>6</sup>, Soudan F<sup>7</sup>, Laage G<sup>7</sup>, Cremonese ED<sup>7</sup>, Canaran L<sup>7</sup>, St-Denis L<sup>7</sup>, Nikfal S<sup>7,7</sup>, Asselin J<sup>7</sup>, Henkel ML<sup>8</sup>, Parsa N<sup>9</sup>, Panaccione R<sup>10</sup>

**Institute** 1 Vancouver General Hospital, Gastroenterology, Vancouver, Canada; 2 John Radcliffe Hospital, Gastroenterology, Oxford, United Kingdom; 3 Institute of Translational of Medicine Immunology & Immunotherapy, Gastroenterology, Birmingham, United Kingdom; 4 John Radcliffe Hospital, Oxford University, Translational Gastroenterology Unit, Experimental Medicine Division, Oxford, United Kingdom; 5 Asian Institute of Gastroenterology (AIG Hospitals), Telangana, India; 6 University of British Columbia, Vancouver, Canada; 7 IVADO Labs, Montreal, Canada; 8 University of Buenos Aires, Gastroenterology, Buenos Aires, Argentina; 9 University of Missouri, Gastroenterology, Columbia, United States; 10 University of Calgary, Gastroenterology, Calgary, Canada

DOI 10.1055/s-0041-1724971

**Citation** Byrne MF, East JE, Iacucci M et al. eP482 PRACTICAL DEEP LEARNING TOOL FOR SCORING OF ULCERATIVE COLITIS DISEASE ACTIVITY IN CENTRAL READING. *Endoscopy* 2021; 53: S256.

**Aims** To create software with a graphic user interface(GUI)to reduce the time to review&score a UC video & improve the accuracy of scoring.

**Methods** We built a web-based interface that read&write multiple databases&data stores displaying videos to be scored by a central reader,as well as the associated metadata required to improve the process.Our GUI shows a timeline under the video,with markers indicated for colon segments&sections that are blurry,poorly prepped,or otherwise highlighted in different colours.While we could also highlight video sections with the precise score assigned to it by AI,this would unnecessarily bias the central reader's opinion.We hide the score generated by our AI models & instead display 3 colours for low,medium or high disease activity.When a video is loaded to be read,the playback marker is set to the first high disease activity section,consisting of a few seconds of video,that video is played back continuously in a loop until the reader selects the appropriate UCEIS or Mayo score. When the reader saves the section,the software moves the video cursor to the next highest scored section of the video.This way,the central reader can review only relevant video portions to confirm the score from each segment.If the reader's scores do not align well with the AI scores the software continues to show more sections of the video,including sections it labelled as unscorable,that may be scorable.The interface allows changes in playback speed.

**Results** Reviews by 3 key opinion leaders(KOLs),user experience was overwhelmingly positive.Not only does the system allow the reader's attention to be more efficiently used,but the interface allows both AI&central reader scores to be saved,allowing for the latter to be used iteratively to re-train&improve the underlying AI model(s).

**Conclusions** We have developed a practical AI tool that hopefully can improve the efficiency&accuracy of the central reading process in clinical trials for UC. Further improvements are ongoing.

## eP483 DELINEATION OF BARRETT'S NEOPLASIA USING DEEP NEURAL NETWORKS

**Authors** Abdelrahim M<sup>1</sup>, Saikou M<sup>2</sup>, Maeda N<sup>3</sup>, Hossain E<sup>1</sup>, Subramaniam S<sup>1</sup>, Bhandari P<sup>1</sup>

**Institute** 1 Queen Alexandra Hospital, Portsmouth, United Kingdom; 2 Biometrics Research Laboratories, NEC, Kanagawa, Japan; 3 NEC Corporation, Tokyo, Japan

**Citation** Abdelrahim M, Saikou M, Maeda N et al. eP483 DELINEATION OF BARRETT'S NEOPLASIA USING DEEP NEURAL NETWORKS. *Endoscopy* 2021; 53: S256.

**Aims** Accurate delineation of Barrett's neoplasia is crucial to detection and planning of endoscopic resection. However, this task can be very challenging. The aim of this study is to develop and validate an artificial intelligence algorithm based on deep neural networks for delineation of Barrett's neoplasia.

**Methods** The AI algorithm, based on SegNet architecture, was trained and validated on 75,305 images (94 videos) of neoplastic Barrett's and 44,586 images (62 videos) of non-neoplastic Barrett's. For testing, we prospectively recorded videos of histologically confirmed Barrett's neoplasia independent of the training and validation datasets. Ground truth was histological diagnosis and delineation of neoplasia by 3 experts. AI delineation was assessed against each individual expert's marking (individual spot), the overlap of all experts marking (optimum spot), as well as the overall area covered by all expert's markings (total spot).

**Results** We included 30 videos of histologically confirmed Barrett's neoplasia assessed using all 3 major endoscopy platforms. The AI system correctly detected neoplasia in all videos. We used a 20% threshold for precision to calculate the accuracy of delineation. The threshold is intended to enable AI-based targeted biopsies. Compared to optimum spot, AI delineated neoplasia lesions with accuracy, mean IoU and mean precision of 83.3%, 0.41, and 0.43 respectively. When compared to at least one of the individual spots, AI delineated lesions with accuracy, mean IoU and mean precision of 100%, 0.53 and 0.62% respectively. ► **Tab. (1)** summarizes the results.

**Conclusions** Our deep learning system delineated Barrett's neoplasia on prospectively recorded endoscopic videos with high accuracy and good overlap compared to expert's marking. This needs to be validated during real time endoscopy assessment. If proven, this can potentially change the current surveillance protocol from quadratic random biopsies to targeted biopsies and improve the R-0 rates during endoscopic resection.

► **Tab. 1** Summary of AI performance metrics

	Accuracy	m-precision	m-IoU
<b>Optimum spot</b>	83.3 %	0.43	0.41
<b>Individual spot</b>	100 %	0.62	0.54
<b>Total spot</b>	60.0 %	0.30	0.29

## eP484 ENDOSCOPY SERVICE – BACK ON TRACK BETWEEN COVID-19 SURGES: A GLOBAL EVALUATION

**Authors** Elshaarawy O<sup>1,2</sup>, Le Ngoc Hoa N<sup>3</sup>, Pawlak K<sup>4</sup>, Shanker Behl N<sup>5</sup>, Alavinejad P<sup>6</sup>, Bronswijk M<sup>7,8</sup>, Voiosu A<sup>9</sup>, Hollenbach M<sup>10</sup>, Cúrdia Gonçalves T<sup>11,12</sup>, Antonelli C<sup>13</sup>, Piscocoy A<sup>14</sup>, Trung Tran Q<sup>15,16</sup>, Prijic R<sup>17</sup>, Wong Z<sup>18</sup>, Hyub S<sup>19</sup>, Dao Viet H<sup>20,21</sup>, Salman S<sup>22</sup>, Trong Nguyen K<sup>23</sup>, Cai M<sup>24</sup>, Alborai M<sup>25</sup>

**Institute** 1 National Liver Institute, Menoufia University, Gastroenterology and Hepatology, Shebine Elkom, Egypt; 2 Heidelberg University, Salem Medical Center, Heidelberg, Germany; 3 Semmelweis University, Gastroenterology Division, Internal Medicine and Haematology Department, Budapest, Hungary; 4 Hospital of the Ministry of Interior and Administration, Department of Internal Medicine, Cardiology, Gastroenterology and Endocrinology, Szczecin, Poland; 5 Fortis Hospitals, Institute of Gastrointestinal and Liver Diseases, Ludhiana, India; 6 Ahvaz Jundishapur University of Medical Sciences, Alimentary Tract Research Centre, Ahvaz, Iran, Islamic Republic of; 7 University Hospitals Leuven, Department of Gastroenterology and Hepatology, Leuven, Belgium; 8 Imelda General Hospital, Bonheiden,

Belgium; 9 Colentina Clinical Hospital, Gastroenterology Division, Bucharest, Romania; 10 University of Leipzig Medical Centre, Medical Department II – Gastroenterology, Hepatology, Infectious Diseases, Pulmonology, Leipzig, Germany; 11 Hospital da Senhora da Oliveira, Department of Gastroenterology, Guimarães, Portugal; 12 School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal; 13 Nuovo Regina Margherita Hospital, Endoscopy Unit, Rome, Italy; 14 Universidad SanIgnacio de Loyola (USIL) Hospital Guillermo Kaelin de la Fuente, EsSalud - Unidad de Revisiones Sistemáticas y Meta-análisis (URSIGET), Lima, Peru; 15 Hue University of Medicine and Pharmacy, Hue University, 15. Department of Internal Medicine, Hue, Vietnam; 16 University Medicine Greifswald, Department of Medicine A, Greifswald, Germany; 17 University Hospital Centre Zagreb, Endoscopy Unit, Division of Gastroenterology and Hepatology, Internal Medicine Department, Zagreb, Croatia; 18 Faculty of Medicine, The National University of Malaysia, Gastroenterology and Hepatology Unit, Department of Medicine, Kuala Lumpur, Malaysia; 19 Seoul National University College of Medicine, Department of Internal Medicine and Liver Research Institute, Seoul National University Hospital, Seoul, Korea, Republic of; 20 Hanoi Medical University Hospital, Endoscopic Centre, Hanoi, Vietnam; 21 Institute of Gastroenterology and Hepatology, Hanoi, Vietnam; 22 The Hashemite University Faculty of Medicine, Zarqa, Jordan; 23 Kaiser Permanente of Orange County, Department of Gastroenterology, California, United States; 24 Zhongshan Hospital Fudan University, Endoscopy Centre and Endoscopy Research Institute, Shanghai, China; 25 Al-Azhar University, Department of Internal Medicine, Cairo, Egypt  
DOI 10.1055/s-0041-1724973

**Citation** Elshaarawy O, Le Ngoc Hoa N, Pawlak K et al. eP484 ENDOSCOPY SERVICE – BACK ON TRACK BETWEEN COVID-19 SURGES: A GLOBAL EVALUATION. *Endoscopy* 2021; 53: S257.

**Aims** An outbreak of coronavirus disease 19 (COVID-19) has altered the dynamic of endoscopic practices. Many guidelines, questionnaires have been published addressing service resumption during the pandemic. Curious about the situation in different endoscopic units across the globe, the study was designed to evaluate different aspects of practice resumption worldwide and their adherence to guidelines.

**Methods** An online questionnaire was created and distributed by national/regional representatives and societies. Redcap platform was used as the interface; afterwards, Microsoft Excel 2016 and Prism 5 were utilized for data analysis.

**Results** From a total of 307 responses from 47 countries/regions was collected, 290 valid answers were analyzed. Almost half (47%) were in post-peak period by August, 2020. Many units were not designated to be COVID-oriented facility. About 15.5% of centers remained unrecovered, mainly in North and South America; those were recovered, training was still withheld significantly. Nevertheless, opened centers kept safety measurements strictly. Patient load was decreased by 37%, but waiting list was increased 0-25%. Among many surveillance methods, body temperature, PCR and chest CT were the most common. 74.8% increased post-procedural disinfection time and 68.2% increase in per-case inspection were noted. PPE usage was implemented highly and shortage of these posed as one of the resumption barriers. Post-procedural patient surveillance was not reinforced.

**Conclusions** The study represented real-time global endoscopic service's adaptation to COVID-19 pandemic. Previously published barriers upon practice resumption remained. Despite Delphi consensus' emphasis on post-procedural surveillance, application was not widely reinforced, raising concerns in disease control.

## eP485 CLINICAL FOLLOW-UP ON COVID-19 INFECTION IN PATIENTS UNDERGOING GASTROINTESTINAL ENDOSCOPY: A MULTICENTER PROSPECTIVE STUDY

**Authors** Albert M<sup>1,2</sup>, Oliveras B<sup>1</sup>, Perpinyà J<sup>1</sup>, Pamplona J<sup>3</sup>, Busquets D<sup>1</sup>, Hombrados M<sup>1</sup>, Torrealba L<sup>1,2</sup>, Miquel O<sup>1,2</sup>, Figa M<sup>1</sup>, Pardo L<sup>1,3</sup>, Sabat M<sup>3</sup>, Mohamed F<sup>1,3</sup>, Peries L<sup>1</sup>, Gutierrez L<sup>1</sup>, Guarnier E<sup>1</sup>, Huertas C<sup>1</sup>, Aldeguer X<sup>1,2,3</sup>

**Institute 1** Hospital Universitari de Girona Doctor Josep Trueta, Gastroenterology, Girona, Spain; **2** Hospital d'Olot Comarcal Garrotxa, Olot, Spain; **3** Hospital Santa Caterina, Gastroenterology, Salt, Spain  
DOI 10.1055/s-0041-1724974

**Citation** Albert M, Oliveras B, Perpinyà J et al. eP485 CLINICAL FOLLOW-UP ON COVID-19 INFECTION IN PATIENTS UNDERGOING GASTROINTESTINAL ENDOSCOPY: A MULTICENTER PROSPECTIVE STUDY. *Endoscopy* 2021; 53: S257.  
**Aims** Experience during the Covid-19 pandemic suggests that digestive endoscopy (DE) is a potential source of infection for patients and healthcare workers (HCW). The difficult situation in Spain's hospitals forced the endoscopy units to be almost closed for weeks. Endoscopic scientific societies, like ESGE, published strategies for their re-start; prioritization and Covid-19 screening were two essential conditions.

Analyze the incidence and effects of Covid-19 transmission in patients undergoing DE and HCW during the endoscopic activity reestablishment in 3 centers in Girona's area of health care.

**Methods** Prospective multicentric study with consecutive collection of elective DE during the reintroduction of endoscopic activity with previous Covid-19 PCR performed. Clinical data from patients and HCW are documented, as well as from the examination. Telephone questionnaire is done two weeks after the DE and an interview to the HCW.

**Results** 338 procedures were collected in 306 patients (mean age 60.63 years). Previous PCR done in 305 patients, being negative in 96.72%. A total of 224 patients (73.2%) were contacted, 34 (15.18%) explained compatible symptoms, with fever being the most reported (3.13%). 4.46% had needed medical consultation, non of them requiring admission or treatment. 18 (8.04%) underwent another Covid-19 test, being 94.44% negative.

A questionnaire was administered to 39 HCW (mean age 41.33 years). 92.31% used PPE and 76.92% used a surgical mask and FFP2 simultaneously. 4 (10.26%) reported symptoms. 92.31% of them had previously been tested for Covid-19; serological test in 25 (69.44%) being negative in 92%, and in 11 the PCR test being negative in 90.91%.

**Conclusions** Although performing a second PCR test was extremely difficult due to low availability, our study could suggest that with protection measures implementation, there is a low incidence of infection and/or symptoms suggestive of covid-19 in patients who undergo DE and HCW assigned to the endoscopy area.

## eP486 DOES CONSERVATIVE MANAGEMENT IN UPPER GI BLEEDING DURING COVID-19 LEAD ON TO ADVERSE OUTCOMES?

**Authors** Ghodeif A<sup>1</sup>, Al-Rifaie A<sup>1</sup>, Gawn A<sup>1</sup>, Yeo Y<sup>1</sup>, Thoufeeq M<sup>1</sup>

**Institute 1** Sheffield Teaching Hospitals Foundation Trust NHS, Gastroenterology, Sheffield, United Kingdom

DOI 10.1055/s-0041-1724975

**Citation** Ghodeif A, Al-Rifaie A, Gawn A et al. eP486 DOES CONSERVATIVE MANAGEMENT IN UPPER GI BLEEDING DURING COVID-19 LEAD ON TO ADVERSE OUTCOMES?. *Endoscopy* 2021; 53: S258.

**Aims** We aimed to assess outcomes of patients with upper gastrointestinal bleeding (UGIB) during the Covid-19 induced 1<sup>st</sup> lockdown during the pandemic in our unit who were either managed conservatively without endoscopy or with endoscopy.

**Methods** We analysed 81 patients retrospectively, who were admitted between 23/03/2020 and 31/05/2020 (First national lockdown period) and managed as confirmed or suspected UGIB during their admission. We collected;

- clinical details, laboratory results, endoscopic findings and management.
- Risk assessment; Charlson Comorbidity Index, Glasgow-Blatchford Bleeding Score (GBS) and Rockall score (pre and post-endoscopy)
- Outcomes; length of hospital stay, ITU admission, rebleeding and 30-day all-cause mortality.

**Results** 81 patients were enrolled; 44 patients had endoscopy (group A) while 37 patients received conservative management (group B) based on clinical decision.

There was no significant difference regarding age (Mean 64.6 yrs. for A, 67.4 yrs. for B), Charlson comorbidities index (Mean 4.59 for A, 4.36 for B), systolic blood pressure (Mean was 118 for A, 126 for B), heart rate Mean 94.7 for A and 88.5 for B), Urea (Mean 10.8 for A and 10.6 for B) and Rockall pre endoscopy score (mean 3.77 for A and 3.43 for B).

There was no significant difference in outcome regarding; length of hospital stay (mean 8.36 for A and 6.64 for B), rebleed (9.09% for A and 8.10% for B), ITU admission (2.27% for A and 5.4% for B) and 30-day mortality (13.63% for A and 18.91% for B).

There was a significant difference between the two groups regarding Hb level and GBS score.

**Conclusions** There was no significant difference regarding the outcome in conservative and endoscopic management for UGIB during this period. Higher GBS and lower Hb were associated with a higher rate of endoscopic management. This supports the concept that correct triage for UGIB was not affected by the pandemic.

► Tab. 1

	Endoscopy (group A)	Conservative (group B)	
Total patients	44	37	81 patients
Covid positive	2.27%	10.81%	P value 0.17
Haemoglobin level (Hb)	Mean 86.9 g/l	Mean 103 g/l	P value 0.03
Glasgow Blatchford score (GBS)	Mean 9.65	Mean 7.81	P value 0.04

## eP487 PATIENT EXPERIENCE AT ENDOSCOPY CENTERS IN THREE WEST AFRICAN COUNTRIES DURING THE COVID-19 PANDEMIC

**Authors** Guingane NA<sup>1</sup>, Houndonougbo ESY<sup>2</sup>, Soli JA<sup>3</sup>, Sombié AR<sup>1</sup>, Bougouma A<sup>1</sup>

**Institute 1** Université Joseph Ki-Zerbo, Médecine, Hépatogastroentérologie, Ouagadougou, Burkina Faso; **2** Hôpital Saint Jean de Dieu, Médecine, Hépatogastroentérologie, Tanguéta, Benin; **3** Hôpital Général de Référence du Niger, Médecine, Hépatogastroentérologie, Niamey, Niger

DOI 10.1055/s-0041-1724976

**Citation** Guingane NA, Houndonougbo ESY, Soli JA et al. eP487 PATIENT EXPERIENCE AT ENDOSCOPY CENTERS IN THREE WEST AFRICAN COUNTRIES DURING THE COVID-19 PANDEMIC. *Endoscopy* 2021; 53: S258.

**Aims** The aim of this study was to assess the experience of patients in endoscopy rooms in three West African countries during the COVID-19 epidemic.

**Methods** This was a multicenter cross-sectional study that took place over a period of 3 months (June to August 2020) in endoscopy centers in Burkina Faso, Benin and Niger. An online survey was sent to patients who had performed upper and lower digestive endoscopies, in 8 endoscopy centers including private, public and confessional health centers. The survey were either sent electronically or completed in the endoscopy room with the help of field investigators, according to patients' preferences. The choice of centers was randomly made from the list of centers.

**Results** A total of 294 patients answered to the online survey. There were 37 lower endoscopies and 257 upper endoscopies. Most of the patients came

from confessional health centers (147 or 50%). The wait times for obtaining an endoscopy appointment were 48 hours for 111 patients (37.8%) and 72 hours for 70 patients 23.8%. One hundred and eight patients or 36.7% noted the absence of a sorting center in the health centers. In the endoscopy departments, 112 patients (38.1%), were questioned about the risk factors for contamination to SARS-CoV-2. Among the risk factors found, 6 patients (2%) traveled abroad in the 2 weeks preceding the examination, 4 patients 1.4% had already been in contact with a subject at risk. The most frequent symptoms were abdominal pain (162 patients; 55.1%) and nausea (48 patients; 16.3%). The indications for the examinations were dominated by abdominal pain (156 patients; 53.1%). Twenty-two patients (7.4%) felt highly exposed to COVID-19 during the endoscopy examination.

**Conclusions** The risk associated with infection in SARS-CoV-2 does not seem to have been sufficiently taken into account in endoscopy centers in the aforementioned 3 countries.

### eP488 RAPID COVID-19 ANTIBODIES SCREENING TESTING COMBINED WITH CLINICAL EVALUATION FOR RESUMING ACTIVITIES IN THE ENDOSCOPY UNIT: A SINGLE-CENTER EXPERIENCE

**Authors** Robles-Medranda C<sup>1</sup>, Oleas R<sup>1</sup>, Alcivar-Vasquez J<sup>1</sup>, Puga-Tejada M<sup>1</sup>, Sanchez E<sup>1</sup>, Del Valle R<sup>1</sup>, Cifuentes C<sup>1</sup>, Alvarado H<sup>1</sup>, Pitanga-Lukashok H<sup>1</sup>

**Institute** 1 Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil, Ecuador

**DOI** 10.1055/s-0041-1724977

**Citation** Robles-Medranda C, Oleas R, Alcivar-Vasquez J et al. eP488 RAPID COVID-19 ANTIBODIES SCREENING TESTING COMBINED WITH CLINICAL EVALUATION FOR RESUMING ACTIVITIES IN THE ENDOSCOPY UNIT: A SINGLE-CENTER EXPERIENCE. *Endoscopy* 2021; 53: S259.

**Aims** We aimed to evaluate the combination of telemedicine consultation and routinely serological screening for resuming activities in the endoscopy unit.

**Methods** A single-center, cohort study (April/15 to May/22). Patients were screened via telemedicine consult by a pulmonologist for a history of acute symptoms, close contacts, or exposure to COVID-19. Serological screening within 24-hours prior to endoscopic procedures was performed and combined with clinical interpretation. The endoscopy staff was screened for symptoms and COVID-19 infection via PCR-swab before and after the protocol instauration for resuming activities. Social distancing on the preparation, endoscopy, and recovering room, as well as personal protective equipment, and an aerosol box shield for intubation in those cases requiring general anesthesia. Patients were follow-up up to 4-weeks and screened for COVID-19 symptoms.

**Results** 127 patients were included in the study period. 9/127 exhibited positive IgM antibodies against COVID-19 (7/9 patients had mild clinical presentation whereas 2/9 were asymptomatic). Their endoscopic procedures were differed until a negative PCR-swab test was obtained. 118 patients were submitted to endoscopic procedures following the protocol. The median age was 45 years, 64.4% were female. The mean body temperature of 37 C. 13.6% were hospitalized patients. Of the 118 patients treated, 53.4% were for therapeutic procedures while 46.6% were diagnostic. 85.6% of the procedures were categorized as non-urgent whereas 14.4% as urgent. The frequencies of the endoscopic procedures were described as: Esophagogastroduodenoscopy 45.8%, colonoscopy 2.5%, ERCP 22.0%, cholangioscopy 15.3%, and endoscopic ultrasound 14.4%. Any nosocomial COVID-19 infection within the endoscopy staff and patients was reported during the protocol and 1-month follow-up.

**Conclusions** A combined telemedicine consultation following by a serological screening allows a safe resuming of activities in the endoscopy unit at a low cost. Social distancing during preparation and recovery room, as well as personal protective equipment, plays a role in managing the spreading of COVID-19.

### eP489V CAPSULE ENDOSCOPY IN ACTIVELY BLEEDING COVID-19 PATIENT

**Authors** Taleb A<sup>1</sup>, El-Mikkawy A<sup>2</sup>, Roshdy N<sup>3</sup>, Ibrahim M<sup>3,2</sup>

**Institute** 1 New Giza University, Cairo, Egypt; 2 Theodor Bilharz Research Institute, Gastroenterology and Hepatology, Cairo, Egypt; 3 ROEYA Gastroenterology and Endoscopy Center, Cairo, Egypt

**DOI** 10.1055/s-0041-1724978

**Citation** Taleb A, El-Mikkawy A, Roshdy N et al. eP489V CAPSULE ENDOSCOPY IN ACTIVELY BLEEDING COVID-19 PATIENT. *Endoscopy* 2021; 53: S259.

Patients with suspected active bleeding in the gastrointestinal tract (GIT) typically undergo upper endoscopy and/or colonoscopy, depending on their presentation. However, bleeding source is not always identified via these procedures. Additionally, with the ongoing pandemic, invasive endoscopic techniques carry increasingly higher risks of viral infection transmission. Capsule endoscopy is a safe solution that can be used to examine and diagnose GIT pathologies, including actively bleeding lesions. We report a case of successful identification of bleeding source in a COVID-19 patient using capsule endoscopy.

### eP490 WORK OF THE ENDOSCOPIC DEPARTMENT OF A MULTI-SPECIALTY HOSPITAL IN THE CONTEXT OF A PANDEMIC COVID-19

**Authors** Antipova M<sup>1,2</sup>, Rusanov D<sup>1</sup>, Ogloblin A<sup>1,2</sup>, Zarubova I<sup>1</sup>, Taronishvili A<sup>1</sup>, Korolev M<sup>1,2</sup>

**Institute** 1 City Mariinsky Hospital, Endoscopy, Saint Petersburg, Russian Federation; 2 State Pediatric Medical University, General Surgery with Course of Endoscopy, Saint Petersburg, Russian Federation

**DOI** 10.1055/s-0041-1724979

**Citation** Antipova M, Rusanov D, Ogloblin A et al. eP490 WORK OF THE ENDOSCOPIC DEPARTMENT OF A MULTI-SPECIALTY HOSPITAL IN THE CONTEXT OF A PANDEMIC COVID-19. *Endoscopy* 2021; 53: S259.

**Aims** To analyze the results of the endoscopic department of a large multi-specialty city hospital in the context of the COVID-19 pandemic and assess the prospects for further effective functioning of the endoscopic service.

**Methods** Over the past period, from april 2020, 465 endoscopic studies were performed, of which 223 (48%) were bronchoscopic examinations, 218 (47%) examinations on the upper digestive tract, 24 (5%) colonoscopies and other manipulations. It should be noted that 204 (44%) patients were examined due to anemia and the clinic of gastrointestinal bleeding.

**Results** Analysis of the sources of bleeding showed that in 74% of cases it is erosive-hemorrhagic gastroduodenopathy, in 15% - acute stress ulcers of the duodenum and stomach, 11% - chronic duodenal ulcers and stomach cancer. In addition, 78% of patients with severe comorbid patholog. Average age was 66.1±2.8 years. There was no correlation between the volume of lung damage by CT, laboratory parameters (CRP, fibrinogen, interleukins) and the volume of lesions of the upper gastrointestinal mucosa. Mortality in the this group was 19% and was not associated with acute blood loss. Also, attention was drawn to the frequent detection of mycotic lesions of the esophageal mucosa, oral cavity and colon in patients with COVID-19, which was indicated by dysphagia and abdominal pain. These findings may have been a manifestation of dysbiosis against the background of ongoing therapy and immunosuppression.

**Conclusions** The technical features of manipulations with the exception of anti-epidemic measures do not differ from those performed in routine practice. Currently, there is no correlation between gastrointestinal complications and the course of COVID-19, but the most common source of bleeding was erosive-hemorrhagic gastroduodenopathy, has a rather specific endoscopic picture. Due to the uncertain timing of the end of the COVID-19 pandemic, an increase in the volume of work of the endoscopy department should be expected in the future.



## eP491 KEEPING THE ENDOSCOPY SHIP AFLOAT AGAINST THE FIRST WAVE OF COVID -19 -THE UTILISATION OF A PRIVATE INSTITUTION TO BOLSTER MMUH GI SERVICES DURING COVID-19

**Authors** Kerr H<sup>1</sup>, Byrne MC<sup>1</sup>, Cudmore J<sup>1</sup>, Byrne S<sup>2</sup>, Bohan A<sup>2</sup>, Lahiff C<sup>1</sup>, Galvin Z<sup>1</sup>, Kelleher B<sup>1</sup>, Leyden J<sup>1</sup>, Stewart S<sup>1</sup>, Mac Mathuna P<sup>1</sup>, Bennett G<sup>1</sup>

**Institute** 1 Mater Misericordiae University Hospital, Department of Gastroenterology, Dublin, Ireland; 2 Mater Private Hospital, Dublin, Ireland

DOI 10.1055/s-0041-1724980

**Citation** Kerr H, Byrne MC, Cudmore J et al. eP491 KEEPING THE ENDOSCOPY SHIP AFLOAT AGAINST THE FIRST WAVE OF COVID -19 -THE UTILISATION OF A PRIVATE INSTITUTION TO BOLSTER MMUH GI SERVICES DURING COVID-19. *Endoscopy* 2021; 53: S260.

**Aims** During COVID-19, guidelines for performance of endoscopy meant procedure numbers were significantly curtailed. From April-June 2020, the Health Authorities in Ireland procured private hospitals for public use.

The aims of this study were

1. to determine if additional private hospital capacity was utilised effectively for endoscopy, as this model is often employed to deal with long waiting lists in Ireland.
2. to compare pathology and follow up rates between the two institutions.

**Methods** We analysed all documentation relating to 242 endoscopy procedures outsourced to the private institution (MPH).

For the period of June 2020 we compared indications, follow up rates and pathology for outpatient endoscopy procedures performed in our public institution, MMUH (n = 111) and MPH (n = 104).

**Results** 197/242 (81.4%) procedures in 167 patients were completed. Non-completion was due to refusal or failure to attend (32) and illness (6). 102 patients (61%) were subsequently discharged to the GP and 39% of patients required hospital follow up.

There was no significant difference between indications in both institutions (p = 0.843). As shown in Table 1, rates of significant pathology in MPH vs MMUH were not statistically significant, 4% vs 7%; p = 0.315. There was no difference in follow up rates in MPH vs MMUH, 62% vs 51%, p = 0.849.

**Conclusions** The use of private capacity in MPH during the first wave of COVID-19 significantly reduced the burden on the public system for GI procedures. However arranging the necessary follow up for the 39% of patients from the MPH generated a substantial clinical and administrative workload on the public system.

Although the endoscopy procedures performed in both institutions were deemed 'urgent', significant pathology was rare, between 4-7%, suggesting more stringent criteria for endoscopy should be considered in the future.

► **Tab. 1** Significant pathology on urgent outpatient endoscopy procedures between MPH(private institution) and MMUH in June 2020

Significant Pathology	MPH (n = 104)	MMUH (n = 111)
New IBD	2	2
Ulcers	1	4
Upper GI cancers	0	2
Lower GI cancers	1	0

## eP492 IMPLEMENTATION OF A PROTECTION PROTOCOL AGAINST COVID-19 IN A BIG ENDOSCOPY UNIT. ASSESSMENT OF ITS EFFICACY

**Authors** Hervas N<sup>1</sup>, Rodríguez Mendiluce I<sup>1</sup>, Arrubla A<sup>1</sup>, Gomez Alonso M<sup>1</sup>, Uribarri L<sup>1</sup>, Busto V<sup>1</sup>, Areste I<sup>1</sup>, Estremera F<sup>1</sup>, Basterra M<sup>1</sup>, Lopez S<sup>1</sup>, Vila JJ<sup>1</sup>

**Institute** 1 Complejo Hospitalario de Navarra, Endoscopy Unit.

Gastroenterology Dpt., Pamplona, Spain

DOI 10.1055/s-0041-1724981

**Citation** Hervas N, Rodríguez Mendiluce I, Arrubla A et al. eP492 IMPLEMENTATION OF A PROTECTION PROTOCOL AGAINST COVID-19 IN A BIG ENDOSCOPY UNIT. ASSESSMENT OF ITS EFFICACY. *Endoscopy* 2021; 53: S260.

**Aims** To assess the efficacy of a protocol based on two different levels of protective equipment (PE) to avoid Covid 19 (C19) infections in the endoscopy unit.

**Methods** To resume our endoscopic activity after the first wave of C19 infection, a protection protocol depending on C19 reverse transcription polymerase chain reaction (PCR) test result and clinical triage before endoscopy was established. Two protection levels were defined: Low (negative PCR and triage), requiring basic protection (hat, gloves, permeable coat, surgical mask in lower and fpp2 in upper endoscopy); and high (positive PCR or symptoms), requiring advanced protection (hat, ocular protection, fpp2 mask, gloves and waterproof coat). Non urgent endoscopies were cancelled if PCR was positive. A prospective research evaluating the efficacy of this protocol was completed from april 27th to june 24th. Patients were contacted 2 weeks later to exclude a possible C19 infection.

**Results** 2304 patients, 46.1% women, were included with mean age of 59.88 ±15.547. 987 gastroscopies, 1084 colonoscopies, 113 ERCP, 101 ecoendoscopies, 9 enteroscopies and 173 rectosigmoidoscopies were performed. Previous PCR was made to 2302 patients and was positive in 10 (7 endoscopies were cancelled). We classified 2291 (99.7%) patients as low risk and 13 as high. The PE used by the endoscopist was considered appropriate in 42.2%, excessive in 41% and insufficient in 16.7% according to the protection protocol. This was influenced by the endoscopist (p < 0,01) and the type of endoscopy: in 43.1% of the colonoscopies the PE was excessive (p < 0,001). None of the endoscopists were infected by C19 during the research period. We contacted 1744 patients (75.9%) with no suspicion of C19 in any.

**Conclusions** A protocol based on two protection levels according to the risk of patients to be infected and the type of endoscopic procedure, seems to be useful to avoid C19 infections in the endoscopy unit.

## eP493 COVID-19 TRANSMISSION RISK FOLLOWING ENDOSCOPY DURING ENDOSCOPY ACTIVITY REDUCTION AT FIRST UK LOCKDOWN

**Authors** Al-Rifaie A<sup>1</sup>, Gawn A<sup>1</sup>, Woodun H<sup>1</sup>, Gariballa M<sup>1</sup>, Ghodeif A<sup>1</sup>, Sreh A<sup>1</sup>, Tariq Z<sup>1</sup>, Di-Marco N<sup>1</sup>, Tunbridge A<sup>2</sup>, Thoufeeq M<sup>1</sup>

**Institute** 1 Sheffield Teaching Hospitals NHS Foundation Trust, Gastroenterology, Sheffield, United Kingdom; 2 Sheffield Teaching Hospitals NHS Foundation Trust, Infectious Diseases and Tropical Medicine, Sheffield, United Kingdom

DOI 10.1055/s-0041-1724982

**Citation** Al-Rifaie A, Gawn A, Woodun H et al. eP493 COVID-19 TRANSMISSION RISK FOLLOWING ENDOSCOPY DURING ENDOSCOPY ACTIVITY REDUCTION AT FIRST UK LOCKDOWN. *Endoscopy* 2021; 53: S260.

**Aims** The rate of incidence and outcome of COVID-19 infection following endoscopic procedures during the first UK lockdown period was evaluated. We also assessed risk factors for transmission of COVID-19 infection post-endoscopy.

**Methods** Patients who had endoscopic procedures in our unit from 23/3/2020 to 31/5/2020 were included. During this period, only emergency and urgent procedures were undertaken. Follow up calls were made subsequently to all

patients to enquire about COVID-19 symptoms, hospital admissions and COVID-19 testing within 14 days of their procedures. To identify risk factors for COVID-19 transmission post-endoscopy, we performed binominal logistic regression.

**Results** 391 endoscopies were included (table). 1.5% (6/391) patients developed COVID-19 symptoms post-endoscopy. Median age is 80 (mean 75.8) with female to male ratio 2:1. The most common symptoms were fever, cough and breathlessness 83.3% (5/6). The percentage of the confirmed cases by COVID-19 PCR swab test was 1.3% (5/391). The median days that those 5 patients developed confirmed COVID-19 post-endoscopy was 7 (range 3-13). 0.8% (3/391) died from COVID-19-related complications within 30 days after endoscopic procedure. One had gastroscopy, one flexible sigmoidoscopy and one ERCP, these procedures were performed on different dates and by different teams. The unadjusted 30-days all-cause mortality rate post-endoscopy was 3.6% (14/391), all of them were inpatients.

On univariate binominal logistic regression, age as a continuous variable (OR 1.122; 95% CI [1.021-1.234];  $p=0.017$ ), less than 10 day hospital stay (OR 0.057; 95% CI [0.008-0.400];  $p=0.004$ ) and hospital stay between 11-20 days (OR 0.067; 95% CI [0.005-0.842];  $p=0.036$ ) were associated with COVID-19 transmission. Combining the above factors into a multivariable regression model, no factor achieved statistical significance.

**Conclusions** The risk of transmission of clinical COVID-19 seems to be low for patients in the context of endoscopy procedures when the appropriate personal protective measures are in place. No risk factor reached statistical significance.

GENERAL HOSPITAL OF ATHENS IN THE PERIOD OF COVID-19 LOCKDOWN FORCED IN GREECE. *Endoscopy* 2021; 53: S261.

**Aims** A full lockdown was forced in Greece due to the COVID-19 pandemic for 53 days and specifically from 03/13/2020 to 05/04/2020. The objective of this study was to assess the impact of lockdown on the number of patients visiting the Emergency Surgical Department (ESD) of a tertiary Greek hospital. It is common sense that the vast majority of patients examined in the ESDs have no symptoms related to SARS-CoV-2.

**Methods** In this retrospective study, data exported from the Sismanogleio General Hospital's Emergency Department (ED) were studied during 4 different periods; a) the full lockdown period of 53 days, from 03/13/2020 to 05/04/2020, b) the period of 53 days right before the lockdown, from 01/20/2020 to 03/12/2020, c) the period of 53 days right after the lockdown, from 05/05/2020 to 06/26/2020 and d) the time period of the previous year that is analogous with the lockdown duration, from 03/13/2019 to 05/04/2019.

**Results** The number of patients visiting the ESD of our hospital was significantly altered during the lockdown period (► **Tab. 1**). The reduction of this number is remarkable compared to the rest time periods of the study. To be exact, this decrease is 55.32%, 52.58%, and 55.79% compared to the pre-traffic ban duration, the post-ban span, and the previous year's similar time period.

**Conclusions** Data provided by our ED is congruent with many other reports all over the world showing a dramatic lessening of people attending the ESD amid the outbreak of COVID-19. People's angst about contracting the disease was undoubtedly the most obvious reason for that.

► **Tab. 1**

Procedure: Inpatients (IP)/Outpatients (OP)	Post Endoscopy COVID-19 Symptoms within 2 weeks IP/OP	Post Endoscopy COVID-19 positive IP/OP	30 days post endoscopy hospital admission IP/OP	Unadjusted 30 days Mortality IP/OP
Gastroscopy: (159/45)	2/1	2/0	0/0	11/0
Lower GI endoscopy: (38/65)	1/0	1/0	0/0	2/0
Endoscopic ultrasound: (4/3)	1/0	1/0	0/0	0/0
Endoscopic retrograde	1/0	1/0	0/4	1/0

► **Tab. 1**

	03/13/2020 - 05/04/2020	01/20/2020 - 03/12/2020	05/05/2020 - 06/26/2020	03/13/2019 - 05/04/2019
Time period description	full lockdown	before full lockdown	after full lockdown	last year, a period similar to that of lockdown
Number of patients visiting the ESD of Sismanogleio General Hospital	248	555	523	561

#### eP494 THE REDUCTION OF PATIENTS VISITING THE EMERGENCY SURGICAL DEPARTMENT OF A TERTIARY GENERAL HOSPITAL OF ATHENS IN THE PERIOD OF COVID-19 LOCKDOWN FORCED IN GREECE

**Authors** Tsekouras K<sup>1</sup>, Karlis G<sup>1</sup>, Orfanos S<sup>1</sup>, Tsitsinakis G<sup>1</sup>  
**Institute** 1 Sismanogleio General Hospital, Emergency Department, Marousi, Greece  
**DOI** 10.1055/s-0041-1724983

**Citation** Tsekouras K, Karlis G, Orfanos S et al. eP494 THE REDUCTION OF PATIENTS VISITING THE EMERGENCY SURGICAL DEPARTMENT OF A TERTIARY

#### eP495 ENDOSCOPIC FINDINGS IN SARS-COV-2 ICU PATIENTS WITH GASTRO INTESTINAL BLEEDING

**Authors** Taiymi A<sup>1</sup>, Belhorma S<sup>1</sup>, Dedane E<sup>1</sup>, Raiss K<sup>1</sup>, El Moutaouakki N<sup>1</sup>, El Mekkaoui A<sup>1</sup>, Kharrasse G<sup>1</sup>, Zazour A<sup>1</sup>, Khannoussi W<sup>1</sup>, Ismaili Z<sup>1</sup>  
**Institute** 1 Hepatogastroenterology Department, Mohammed VI University Hospital, Digestive Disease Research Laboratory, Mohammed 1st University, Oujda, Morocco  
**DOI** 10.1055/s-0041-1724984

**Citation** Taiymi A, Belhorma S, Dedane E et al. eP495 ENDOSCOPIC FINDINGS IN SARS-COV-2 ICU PATIENTS WITH GASTRO INTESTINAL BLEEDING. *Endoscopy* 2021; 53: S261.

**Aims** To identify the endoscopic findings in patients with severe SARS COV2 admitted in ICU and presenting GI bleeding.

**Methods** A retrospective case series, including all patients with SARS COV2 admitted in ICU presenting GI bleeding between March 2020 and November 2020. Data regarding clinical presentations were analysed by SPSS.

**Results** 12 patients were included. The median age was 65 years [38-93] with a male predominance of 91,7% . Comorbidities were: hypertension 41,6%, obesity 41,6%, diabetes type II 33,4%, cardiomyopathy 25%, cirrhosis 8,1% . All patients needed respiratory support,25% with mechanical ventilation, 8,3% noninvasive ventilation, 41,7% nonbreather mask and 16,7 % nasal oxygen cannula .Empiric Full dose anticoagulation was administered in 91,6 % and 58,3 % received prophylactic PPIs therapy. 60% had Naso gastric tube. Upper GI bleeding was diagnosed in 83,4% and lower GI bleeding in 16,6%. Mean delay between GI bleeding and anticoagulant intake was 8 days. Mean Hemoglobin level was 9,2 g/dl. Endoscopy was performed in 66,6%, 25% died before endoscopy by respiratory worsening and 8,4% had no emergency indication for endoscopy . Endoscopic findings were ulcers in 75%: gastric 33,3%, duodenal bulb 66,6%, multiple 66,6%, unique 33,3%,classified as Forrest IIa 16,6%, IIb 33,3%, III 50% with the mean size at 22 mm . Other findings were: oesophagitis 25%, erosive gastritis 12,5%, gastric tumor 12,5%, esophageal blood clot with no GI bleeding origin 12,5%. Hemostasis clip was placed in 33,3%,blood transfusion in 58,3% associated to PPIs therapy in all patients .No recurrence of GI bleeding in 33,3% while 66,6 % died by respiratory complications.

**Conclusions** In our study, main endoscopic findings were ulcers in 75% .Prophylactic PPIs should be considered in patients with severe SARS COV2 in ICU requiring anticoagulation therapy.

#### eP496 IMPACT OF THE COVID 19 PANDEMY ON THE EMERGENCY ENDOSCOPIC ACTIVITY

**Authors** Nasiri M<sup>1</sup>, El Mqaddem O<sup>1</sup>, Taiymi A<sup>1</sup>, Zazour A<sup>1</sup>, El Mekkaoui A<sup>1</sup>, Khannoussi W<sup>1</sup>, Kharrasse G<sup>1</sup>, Ismaili Z<sup>1</sup>

**Institute** 1 University Mohammed I, Hepato-Gastro-Enterology, Oujda, Morocco

**DOI** 10.1055/s-0041-1724985

**Citation** Nasiri M, El Mqaddem O, Taiymi A et al. eP496 IMPACT OF THE COVID 19 PANDEMY ON THE EMERGENCY ENDOSCOPIC ACTIVITY. *Endoscopy* 2021; 53: S262.

**Aims** Determine the impact of the covid 19 pandemy on the emergency endoscopic activity.

**Methods** The is a retrospective,descriptive and comparative study of epidemiological, clinical and endoscopic characteristics of patients who had emergency ERCP over two successive 8 months:Period(1):01/03/2019-31/10/2019 and Period(2):01/03/2020-31/10/2020 in our department of hepatogastroenterology of university hospital Mohammed VI Oujda.

**Results** The average age of patients was 62 years(12-93) during period(2) versus 67 years(25-104)during period(1),there were a female predominance in two groups.During period(2) 145 ERCP were performed,87(60%) were in emergency context for acute cholangitis,9 had acute pancreatitis associated,12.6% were in grade III of acute cholangitis and the average of bilirubin before the procedure was 115 mg/l and 54 mg/l after versus 166 ERCP during the period(1),93(56%) having emergency ERCP for acute cholangitis,and acute pancreatitis was associated in 9 patients,17.2% were in grade III,and the average of bilirubin before the procedure was 130 mg/l and 64 mg/l after during period(1),52.9% patients who had placement of prosthesis in period(2) versus 47.3% in period(1),and 57.5% patients had an endoscopic sphincterotomy versus 57% respectively.In period(2),the etiology was lithiasis in 51.7% patients,tumoral in 43.7% patients,and hydatid cyst in 4.6% patients.In period(1)the lithiasis pathology was in 58% patients,tumoral in 36.8% patients,two cases of prosthesis dysfunction,1 with hydatid cyst and 1 with sump syndrom.In period(2), failed drainage was noted in 3(3.4%)patients:2 patients:surgical drainage,1

►Tab. 1 Mains Reslts

	Period(2)	Period(1)
Stone extraction	82%	72%
Post-ERCP pancreatitis	4.3%	1.15%
Average length of hospital staying	5 days	7 days
Delay to perform ERCP	24 Hours	48 Hours

patient:nasobiliary drainage,in period(1) 5(5.3%)patients:3 patients:surgical drainage 2 patients:percutaneous drainage.

**Conclusions** The results of our comparative study between period (1) and (2) are the age was around 60, female sex predominate over male, therefore lithiasis pathology was the most predominant cause due to not having cholecystectomy, followed by the tumoral cause which is tardily diagnosed after complications and requiring drainage,placement of prosthesis was preferred during the covid period to reduce the risk of recurrence,the delay to perform ERCP, complications post-ERCP and hospital staying are decreased during the period(2), given the constraints of the pandemy.

#### eP497 IMPACT OF COVID-19 PANDEMIC ON THE UPPER DIGESTIVE ENDOSCOPY: COMPARATIVE STUDY DURING 2 DISTINCT PERIODS

**Authors** Elmqaddem O<sup>1</sup>, Nasiri M<sup>1</sup>, Taiymi A<sup>1</sup>, Zazour A<sup>1</sup>, Elmekkaoui A<sup>1</sup>, Khannoussi W<sup>1</sup>, Kharrasse G<sup>1</sup>, Ismaili Z<sup>1</sup>

**Institute** 1 University Hospital Mohammed VI Oujda, Hepato-Gastroenterology, Oujda, Morocco

**DOI** 10.1055/s-0041-1724986

**Citation** Elmqaddem O, Nasiri M, Taiymi A et al. eP497 IMPACT OF COVID-19 PANDEMIC ON THE UPPER DIGESTIVE ENDOSCOPY: COMPARATIVE STUDY DURING 2 DISTINCT PERIODS. *Endoscopy* 2021; 53: S262.

**Aims** Determine the impact of the COVID-19 pandemic on the upper endoscopic activity of the emergency departments of our service by comparing the epidemiological, clinical and endoscopic profile of patients who had an upper digestive endoscopy in an emergency context in 2 distinct periods before and during the pandemic COVID-19.

**Methods** It's a retrospective, descriptive and comparative study of patients who had an upper digestive endoscopy (UDE), over two successive 8 months Period (1) non COVID-19: 01/03/2019 -31/10/2019 and Period (2) COVID 19: 01/03/2020 -31/10/2020 in the hepato-gastroenterology department of the university hospital Mohammed VI Oujda.

**Results** During the study period, 54 urgent UDE were performed during period (2) versus 153 endoscopies during period (1)

The average age of our patients was 60±2 during period (2) versus 56±3 during period (1), sex ratio (H/F) was 1.8 in period (1) and 1.2 in period (2)

Concerning gastroduodenal ulcer during the period (2) 11% were stage IIb-I with 24% bulbar locations compared to 6% stage IIb-I during period (1).

The 2 endoscopies performed in patients with COVID-19 pneumonia had esophageal various and stage IIb gastric ulcer therapeutic endoscopic procedures were performed for 15% patients during period (2) including clips, ligations and APC compared with 13% during period (1).

**Conclusions** There is a marked reduction in UDE case volume during the COVID-19 period. Self-medication by non-steroidal anti-inflammatory drugs was higher during this period with a slight increase in the prevalence of ulcer disease with advanced lesions and the use of an interventional endoscopic gesture during this period.

**► Tab. 1 Table of the main results of survey**

	Period (1)	Period (2)
Self-medication with non-steroidal anti-inflammatory	1 %	7 %
The average delay of endoscopy	72H	40H
Reason for consultation	Digestive bleeding 79 % Dysphagia 6.5 % Abdominal pain 2.6 %	Digestive bleeding 79 % Dysphagia 7 % Abdominal pain 5 %
Result of endoscopy	Signs of Portal hypertension 13 % gastroduodenal ulcer 32 % gastric or oesophageal tumor 11 %	Signs of Portal hypertension 14 % gastroduodenal ulcer 37 % gastric or oesophageal tumor 12 %

In addition, there is a stability in the number of hemorrhagic decompensations of chronic liver disease and also in the prevalence of tumor pathology diagnosed on endoscopy during this period that can be related the silent evolution of these pathologies.

#### eP498 INFLUENCE OF FULL LOCKDOWN ON PATIENTS' ATTENDANCE IN THE EMERGENCY SURGICAL SPECIALTIES DEPARTMENT OF A TERTIARY HOSPITAL IN ATHENS, GREECE; PRELIMINARY RESULTS AMID COVID-19 OUTBREAK

**Authors** Tsekouras K<sup>1</sup>, Orfanos S<sup>1</sup>, Karlis G<sup>1</sup>, Tsitsinakis G<sup>1</sup>

**Institute** 1 Sismanogleio General Hospital, Emergency Department, Marousi, DOI 10.1055/s-0041-1724987

**Citation** Tsekouras K, Orfanos S, Karlis G et al. eP498 INFLUENCE OF FULL LOCKDOWN ON PATIENTS' ATTENDANCE IN THE EMERGENCY SURGICAL SPECIALTIES DEPARTMENT OF A TERTIARY HOSPITAL IN ATHENS, GREECE; PRELIMINARY RESULTS AMID COVID-19 OUTBREAK. *Endoscopy* 2021; 53: S263.

**Aims** A full lockdown was forced in Greece due to the COVID-19 pandemic for 53 days and specifically from 03/13/2020 to 05/04/2020. The objective of this study was to assess the impact of lockdown on the number of patients visiting the Emergency Surgical Specialties Department (ESSD) of a tertiary Greek hospital. It is common sense that the vast majority of patients examined in the ESSD have no symptoms related to SARS-CoV-2. In the Emergency Department (ED) of our hospital, there are 6 different surgical specialties domains; Vascular Surgery, Thoracic Surgery, Urology, Ophthalmology, General Surgery, and Otorhinolaryngology.

**Methods** In this retrospective study, data exported from the Sismanogleio General Hospital's Emergency Department were studied during 4 different periods; a) the full lockdown period of 53 days, from 03/13/2020 to 05/04/2020, b) the period of 53 days right before the lockdown, from 01/20/2020 to 03/12/2020, c) the period of 53 days right after the lockdown, from 05/05/2020 to 06/26/2020 and d) the time period of the previous year that is analogous with the lockdown duration, from 03/13/2019 to 05/04/2019.

**Results** The number of patients visiting the ESSD of our hospital was significantly altered during the lockdown period (► **Tab. 1**). The reduction of this number is remarkable compared to the rest time periods of the study. To be exact, this decrease is 54.74 %, 51.53 %, and 61.93 % compared to the pre-

**► Tab. 1**

	03/13/2020 - 05/04/2020	01/20/2020 - 03/12/2020	05/05/2020 - 06/26/2020	03/13/2019 - 05/04/2019
Time period description	full lockdown	before full lockdown	after full lockdown	last year, a period similar to that of lockdown
Number of patients visiting the ESSD of Sismanogleio General Hospital	745	1646	1537	1957

traffic ban duration, the post-ban span, and the previous year's similar time period.

**Conclusions** Data provided by our ED is congruent with many other reports all over the world showing a dramatic lessening of people attending the ESSD amid the outbreak of COVID-19. People's angst about contracting the disease was undoubtedly the most obvious reason for that.

#### eP499 IMPACT OF THE COVID-19 PANDEMIC IN THE GASTROENTEROLOGY DEPARTMENT – THE GASTROENTEROLOGISTS' PERSPECTIVE NATIONWIDE AND THE REAL IMPACT IN A PORTUGUESE CENTER

**Authors** Gomes C<sup>1</sup>, Pinho R<sup>1</sup>, JC Silva<sup>1</sup>, Afecto E<sup>1</sup>, Correia J<sup>1</sup>, Carvalho J<sup>1</sup>

**Institute** 1 Centro Hospitalar Vila Nova de Gaia/Espinho, Gastroenterology, Vila Nova de Gaia, Portugal

DOI 10.1055/s-0041-1724988

**Citation** Gomes C, Pinho R, Silva JC et al. eP499 IMPACT OF THE COVID-19 PANDEMIC IN THE GASTROENTEROLOGY DEPARTMENT – THE GASTROENTEROLOGISTS' PERSPECTIVE NATIONWIDE AND THE REAL IMPACT IN A PORTUGUESE CENTER. *Endoscopy* 2021; 53: S263.

**Aims** Several Gastroenterology Societies created recommendations in order to reduce any non-essential exposure to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus. The purposes of this paper are 1) to evaluate the national gastroenterologists' perspective of the impact of COVID-19 and 2) to evaluate the impact of the reorganization of the Gastroenterology department of Centro Hospitalar Vila Nova de Gaia/Espinho (CHVNG/E) during COVID-19 Pandemic.

**Methods** For the 1<sup>st</sup> purpose, an online survey of 32 questions was distributed to gastroenterologists nationwide. For the 2<sup>nd</sup> purpose the authors conducted a retrospective analysis of some endoscopic procedures performed at the Gastroenterology Department of CHVNG/E between March 16 and May 8 during the years 2019 and 2020.

**Results** 67 gastroenterologists have answered our survey between April 15th and May 5th 2020, mostly females (53.7 %) and 55 to 65 years-old group was the most prevalent (25.4 %). Only 14.9 % were residents. 86.6 % worked in a hospital with COVID-19 patients, with 16.4 % assigned to assist those patients. All the departments had suffered modifications. 90 % of the residents affirmed that their activity has changed mainly endoscopic practice, and 64.2 % respondents agreeing with an internship extension. 94 % declared to have non-



essential endoscopic procedures postponed. 85.1% maintained in-person medical visits, 88.1% were already having remote consultations and 11.9% did not have any clinical visit. In our gastroenterology unit, the number of endoscopic procedures had decreased 73.1% from 2019 to 2020.

**Conclusions** The advent of the COVID-19 outbreak has led to important changes among Gastroenterology activities in Portugal, and national gastroenterology units are complying with the recommendations. Furthermore, Portuguese Gastroenterologists believed that the decrease in endoscopic activity can compromise residents' education and training. The gastroenterology department at CHVNG/E has shown a significant reduction in the number of endoscopic procedures performed during the same period from 2019 to 2020.

### eP500 PATIENT'S PERSPECTIVE ON THE IMPLEMENTATION OF MEASURES TO CONTAIN THE SARS-COV-2 PANDEMIC IN A PORTUGUESE GASTROENTEROLOGY DEPARTMENT

**Authors** Gomes C<sup>1</sup>, Ponte A<sup>1</sup>, Pinho R<sup>1</sup>, Silva JC<sup>1</sup>, Afecto E<sup>1</sup>, Correia J<sup>1</sup>, Carvalho J<sup>1</sup>

**Institute** 1 Centro Hospitalar Vila Nova de Gaia/Espinho, Gastroenterology, Vila Nova de Gaia, Portugal

**DOI** 10.1055/s-0041-1724989

**Citation** Gomes C, Ponte A, Pinho R et al. eP500 PATIENT'S PERSPECTIVE ON THE IMPLEMENTATION OF MEASURES TO CONTAIN THE SARS-COV-2 PANDEMIC IN A PORTUGUESE GASTROENTEROLOGY DEPARTMENT. *Endoscopy* 2021; 53: S264.

**Aims** As the COVID-19 pandemic rages around the world, hospital departments had to adapt their activities, which could ultimately jeopardize patient's best interests. Our gastroenterology department of Centro Hospitalar Vila Nova de Gaia/Espinho (CHVNG/E) was forced to undergo dynamic changes and adjusted its clinical practice. The aim of this paper is to evaluate the patient's perspective to the implementation of SARS-CoV-2 measures in our department.

**Methods** A survey with 13 questions was created using an online platform and available to the patients via an automatic short message service (SMS). To be included patients had to have at least one gastroenterology appointment at our center in the year 2019.

**Results** 973 patients completed the survey between April 27<sup>th</sup> and May 24<sup>th</sup> 2020, 51.6% females, 82.6% with less than 65 years-old. 50.7% patients were not working. 49.5% had an appointment for monitoring a suspected or established Inflammatory Bowel Disease (IBD). 76.8% and 69.6% agreed in postponing endoscopic and non-endoscopic procedures, respectively. 93.6, 94.3% and 95.7% patients declared to be worried about postponing of endoscopic procedures, non-endoscopic procedures and medical visits, respectively. 88.8% supported remote consultations and 77.3% were satisfied with this type of appointment, independently of the age group ( $p = 0.66$ ). 80.9% of IBD patients treated with immunosuppression (IS) or biologics were concerned about a severe infection by COVID-19. However, only 42.5% assume to feel safer with a SARS-CoV-2 screening before treatment.

**Conclusions** Around 80% of respondents had less than 65 years old and a great part belong to IBD appointments, which could be due to the fact that these patients are usually younger and more easily adapted to electronic devices and online surveys. The majority agreed in postponing procedures, although they feel concerned with this situation. Almost all patients supported remote consultations, and most patients found them positive.

### eP501 NON VARICEAL UPPER GASTROINTESTINAL BLEEDING DURING COVID 19 OUTBREAK. INCIDENCE AND CLINICAL CHARACTERISTICS

**Authors** Garcia-Sague B<sup>1</sup>, Brunet E<sup>1</sup>, Llovet L<sup>1</sup>, Garcia-Iglesias P<sup>1</sup>, Frisnacho E<sup>1</sup>, Melcarne L<sup>1</sup>, Martinez- Bauer E<sup>2</sup>

**Institute** 1 Hospital Universitari Parc Tauli, Gastroenterology, Sabadell, Spain; 2 Hospital Universitari Parc Tauli, Endoscopy, Sabadell, Spain  
**DOI** 10.1055/s-0041-1724990

**Citation** Garcia – Sague B, Brunet E, Llovet L et al. eP501 NON VARICEAL UPPER GASTROINTESTINAL BLEEDING DURING COVID 19 OUTBREAK. *INCIDENCE AND CLINICAL CHARACTERISTICS*. *Endoscopy* 2021; 53: S264.

**Aims** During the COVID 19 pandemic, healthcare was predominantly for the treatment of COVID patients. This raised concerns about the impact on health care for unrelated illnesses. The aims of this study was to determine if COVID19 has produced changes in the incidence and clinical characteristics of non-variceal upper gastrointestinal bleeding (NVUGB) compared to a period of time prior to the pandemic.

**Methods** Upper gastrointestinal endoscopies (UGE) performed during the COVID period and those performed in the same equivalent period in the previous year were selected from the hospital database of the endoscopy unit. NVUGB was defined: haemorrhage originating proximal to the ligament of Treitz with the presence of melena, hematochezia or rectal bleeding with a potentially bleeding lesion in the endoscopy or active bleeding in the arteriography and/or CT angiography. Clinical and analytical characteristics were compared with the non-parametric Mann-Whitney U test. A p value <0.05 was considered significant.

**Results** 32 patients were identified (9 during the Covid19 period). The characteristics of the patients and the comparison between the periods are summarized in Table 1. No significant differences were found between the variables compared.

#### Conclusions

The incidence of NVUGB was lower in the Covid19 period compared to the non-Covid19 period. However, no significant differences were found in the variables analyzed.

► Tab. 1

Period	No COVID 19 (n= 23)	COVID 19 (n=9)	P value
Age (years) (median)	78	79	no signif (ns)
Men	16 (69.6%)	8 (88.9%)	ns
PAS (mmHg)	118	124	ns
FC (bpm)	80	83	ns
Hb (gr/dl)	97	80	ns
Rockall pre endoscopic	3	3	ns
Rockall	4	4	ns
Charlson Index	5	5	ns
Blachford - Glasgow	10	10	ns
Rebleeding	0	0	ns
Readmission	0	0	ns
Transfusion	0	2 (22.2%)	ns
Mortality	14(60.9%)	6 (66.7%)	ns
Endoscopic Treatment	7 (30.4%)	1 (11.1%)	ns

## eP502 IMPACT OF RESTRICTIONS DUE TO COVID -19 ON A QUALITY ASSURED SCREENING COLONOSCOPY PROGRAM

**Authors** Hinterberger A<sup>1,2</sup>, Jiricka L<sup>1,2</sup>, Waldmann E<sup>2,1</sup>, Penz D<sup>2,1</sup>, Majcher B<sup>2,1</sup>, Asaturi A<sup>2,1</sup>, Szymanska A<sup>2,1</sup>, Rockenbauer L<sup>2,1</sup>, Ferlitsch A<sup>2</sup>, Trauner M<sup>2,1</sup>, Ferlitsch M<sup>2,1</sup>

**Institute** 1 Medical University of Vienna, Department of Internal Medicine III, Vienna, Austria; 2 Austrian Society for Gastroenterology and Hepatology, Quality Assurance Working Group, Vienna, Austria

**DOI** 10.1055/s-0041-1724991

**Citation** Hinterberger A, Jiricka L, Waldmann E et al. eP502 IMPACT OF RESTRICTIONS DUE TO COVID -19 ON A QUALITY ASSURED SCREENING COLONOSCOPY PROGRAM. *Endoscopy* 2021; 53: S264.

**Aims** On February 25<sup>th</sup>, the first patient was diagnosed with COVID-19 in Austria. On March 16<sup>th</sup> (week 12) Austrian government imposed restrictions and subsequently the Austrian Medical Association has recommended to minimize screening examinations in compliance with government restrictions.

**Aim** Aim was to evaluate the impact of this recommendation on the number of weekly performed colonoscopies, detection of non-advanced adenomas, advanced adenomas (AA) and colorectal cancer (CRC) and to calculate how many undetected adenomas could develop into CRC.

**Methods** We analyzed number of colonoscopies and pathological findings within a quality assured national colorectal cancer screening program before the COVID-19 pandemic (January 1<sup>st</sup> 2019 – July 5<sup>th</sup> 2019, Period 1) and compared those rates to months with limited access to colonoscopy (January 1<sup>st</sup> 2020 and July 5<sup>th</sup> 2020, Period 2) with a two-tailed T-test, a Wilcoxon-rank-test and a chi-square test.

**Results** 23.700 colonoscopies were performed in Period 1, and 15.569 in Period 2. The mean rate of colonoscopies per week in Period 1 was significantly higher than in Period 2 (877,78 [SD=190,44] versus 576,63 [SD=350,58],  $p=0,003$ ). 4.655 non-advanced adenomas were detected in Period 1 versus 3.221 in Period 2 ( $p=0,012$ ). In total 1.863 AAs and 170 CRCs were detected in Period 1 versus 1.166 AAs and 91 CRCs in Period 2. These rates did not differ significantly ( $p=0,177$ , and  $p=0,131$ ).

**Conclusions** During the COVID-10 the number of performed colonoscopies per endoscopist was significantly lower compared to the years before but there was no difference in the detection of CRCs and AAs.

## eP503 THE IMPACT OF THE COVID-19 PANDEMIC ON GASTROINTESTINAL ENDOSCOPY ACTIVITY IN A TERTIARY CARE CENTER FROM NORTH-EASTERN ROMANIA

**Authors** Chiriac S<sup>1,2</sup>, Stanciu C<sup>2</sup>, Cojocariu C<sup>1,2</sup>, Sfarti C<sup>1,2</sup>, Singeap A-M<sup>1,2</sup>, Girleanu I<sup>1,2</sup>, Cuciureanu T<sup>1</sup>, Huiban L<sup>1</sup>, David D<sup>1</sup>, Zenovia S<sup>1</sup>, Nastasa R<sup>1</sup>, Balan GG<sup>1,2</sup>, Trifan A<sup>1,2</sup>

**Institute** 1 "Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania; 2 St. Spiridon" Emergency Hospital, Institute of Gastroenterology and Hepatology, "Iasi, Romania

**DOI** 10.1055/s-0041-1724992

**Citation** Chiriac S, Stanciu C, Cojocariu C et al. eP503 THE IMPACT OF THE COVID-19 PANDEMIC ON GASTROINTESTINAL ENDOSCOPY ACTIVITY IN A TERTIARY CARE CENTER FROM NORTH-EASTERN ROMANIA. *Endoscopy* 2021; 53: S265.

**Aims** The outbreak of the corona-virus disease 2019 (COVID-19) has led to significant changes in endoscopy units worldwide, with potential impact on patients' welfare as well as on endoscopy training. We aimed to assess the real-life impact of COVID-19 on the endoscopy unit in a tertiary care center from Romania.

**Methods** We performed a service evaluation using the local endoscopy database. Two time periods were analyzed, namely from the 1<sup>st</sup> of March to 15 September 2020, during the COVID-19 pandemic and a similar period between 1<sup>st</sup> of March – 15 September 2019.

**Results** There was a 6.2 fold decrease of the number of endoscopic procedures as a result of COVID-19. The most important reduction was found in colonoscopy, from 916 to 42 procedures,  $P<0.001$ , followed by flexible sigmoidoscopy, from 189 to 14 procedures,  $P=0.009$ , upper gastrointestinal endoscopy, from 2269 to 401 procedures,  $P=0.006$ , and ERCP, from 234 to 125 procedures,  $P<0.001$ . The percentage of emergency procedures increased (38.8% vs 26.2%,  $P<0.001$ ), as well as the rate of endoscopies performed for upper GI bleeding (42.5% vs 24.4%, respectively,  $P<0.001$ ). The detection of cancers was considerably reduced (57 compared to 249,  $P=0.001$ ). Surprisingly the rate of complications was lower and the success of the procedures higher (7.6% vs 19.2%,  $P<0.001$ , and 94.2% vs 90.7%, respectively). Fellow participation was also reduced from 90% before the pandemic to 40.9% during COVID-19 time ( $P<0.001$ ).

**Conclusions** The COVID-19 pandemic has significantly altered the workflow of the endoscopy unit, lowering the number of procedures performed and potentially compromising the early detection of cancers.

## eP504 CASE REPORT: DUODENAL PERFORATION IN A CRITICALLY ILL PATIENT WITH COVID-19

**Authors** Prinz F<sup>1</sup>, Braun G<sup>1</sup>, Ebigo A<sup>1</sup>, Messmann H<sup>1</sup>

**Institute** 1 Universitätsklinikum Augsburg, Gastroenterology, Augsburg, Germany

**DOI** 10.1055/s-0041-1724993

**Citation** Prinz F, Braun G, Ebigo A et al. eP504 CASE REPORT: DUODENAL PERFORATION IN A CRITICALLY ILL PATIENT WITH COVID-19. *Endoscopy* 2021; 53: S265.

**Aims** We report the case of a 54 - year old male who was admitted to our intensive care unit due to respiratory failure and COVID-19 disease. The patients' comorbidities were allergic asthma and obesity; he was on no regular medication. On day 15 after admission to the ICU, invasive ventilation was started, and on day 19, melena, with a drop in hemoglobin level from 12.9 g/dl to 8.5 g/dl, was observed.

**Methods** In the emergency gastroscopy, three ulcerations were seen in the duodenal bulb. Two ulcerations showed visible vessels (Forrest IIa), and were treated with a standard hemoclip as well as an "Over-the-Scope-Clip" (OTSC, Ovesco). The third ulceration was covered by a large clot (F IIb). After mobilization of the clot, the ulceration was seen to have perforated into the retroperitoneum.

**Results** The patient underwent emergency surgery in which the perforation was sutured.

**Conclusions** Studies have shown a high risk for gastrointestinal complications, such as gastrointestinal ischemia and ileus in critically ill patients with COVID-19 disease. In this case, we postulate that critically ill patients with COVID-19 may have a higher risk of GI bleeding and ulcer perforation. However, it is unclear whether these complications can be specifically attributed to the underlying COVID-19 disease or the therapeutic anticoagulation, which all critically ill patients with COVID-19 receive as standard of care. Further studies are needed to confirm or rule out these assumptions. Nevertheless, special attention should be paid to gastrointestinal complications in critically ill COVID-19 patients.

## eP505 IS THE DECLINE IN ACUTE UPPER GASTROINTESTINAL BLEEDING ASSOCIATED WITH THE LOCKDOWN DURING PANDEMIC PERIOD OF COVID-19?

**Authors** Živković M<sup>1</sup>, Budimir I<sup>1</sup>, Ratkajec V<sup>2</sup>, Bakula D<sup>1</sup>, Budimir jr I<sup>3</sup>, Ratković A<sup>4</sup>, Nikolić M<sup>1</sup>

**Institute** 1 «Sestre Milosrdnice» University Hospital Center, Division of Gastroenterology, Department of Internal Medicine, Zagreb, Croatia; 2 County Hospital Virovitica, Virovitica, Croatia; 3 University Hospital Dubrava, Zagreb, Croatia; 4 County Hospital Gospić, Gospić, Croatia

**DOI** 10.1055/s-0041-1724994

**Citation** Živković M, Budimir I, Ratkajec V et al. eP505 IS THE DECLINE IN

ACUTE UPPER GASTROINTESTINAL BLEEDING ASSOCIATED WITH THE LOCKDOWN DURING PANDEMIC PERIOD OF COVID-19? *Endoscopy* 2021; 53: S265.

**Aims** The aim of this prospective cohort trial is to show the change trend of clinical, epidemiological and endoscopic characteristics of upper gastrointestinal bleeding (UGIB) during the “lockdown” pandemic (COVID -19) compared to pandemic-free period.

**Methods** In our study we compared 42 patients from period of the „lockdown“ (from 1st March to 30 th April 2020) with 103 patients from the pandemic-free period (from 1st March to 30th April 2019).

All of these patients were referred to University Hospital Center «Sestre Milosrdnice» with symptoms of bleeding from upper gastrointestinal tract. Urgent upper endoscopy performed within 24 hours of admission.

**Results** During the “lockdown” for COVID-19 pandemic period, the number of patients with UGIB was 2.5 times lower compared to pandemic-free period.(42 vs. 103 patients). The mostly of patients (about 90%) have had non variceal upper gastrointestinal bleeding (NVB). During the “lockdown” significant reduction in relative number of patients with peptic ulcer bleeding (PUB) was not found (0.34 vs 0.44).

The percentage of patients with low-risk peptic ulcers (Forrest 2c and Forrest 3) was significantly higher in “lockdown” COVID – 19 pandemic group compared to pandemic-free group, respectively. (61.5 vs. 36.6%,  $p < 0.001$ ). When comparing “lockdown” COVID – 19 pandemic and pandemic – free period, there was no observed difference in the recurrence of bleeding (7.7 vs 9.8%), 15-day mortality (7.7 vs 7.3%), in red blood cell transfusion(53.8 vs 56.1%), fresh frozen plasma transfusion (23.1% vs 12.2%), and the length of hospital stay (8 vs 7 days). There was no surgical intervention in patients with PUB during the “lockdown” pandemic COVID – 19 period.

**Conclusions** During the “lockdown” pandemic of COVID -19 the number of patients with symptoms of UGIB was decreased without changing the proportion of individual types of NVB.

## eP506 AIR CIRCULATION IN GASTROINTESTINAL LIGHT SOURCE BOX AND ENDOSCOPE IN THE ERA OF SARS-COV-2 AND MICROORGANISMS AIRBORNE TRANSMISSION

**Authors** [Chaussade S<sup>1</sup>](#), [Abou Ali E<sup>1</sup>](#), [Hallit R<sup>1</sup>](#), [Belle A<sup>1</sup>](#), [Barret M<sup>1</sup>](#), [Coriat R<sup>1</sup>](#)

**Institute** 1 Cochin Hospital, Gastroenterology, Paris, France

**DOI** [10.1055/s-0041-1724995](https://doi.org/10.1055/s-0041-1724995)

**Citation** Chaussade S, Abou Ali E, Hallit R et al. eP506 AIR CIRCULATION IN GASTROINTESTINAL LIGHT SOURCE BOX AND ENDOSCOPE IN THE ERA OF SARS-COV-2 AND MICROORGANISMS AIRBORNE TRANSMISSION. *Endoscopy* 2021; 53: S266.

**Aims** The role of air circulation through GI endoscopy system in microorganism airborne transmission has never been investigated. We discuss the potential risk of transmission and potential improvements.

**Methods** We investigated and described the air circulation into GI endoscopes proposed by companies (Fujifilm©, Olympus©, Pentax©).

**Results** The light source box contains a lamp, either Xenon or LED. The temperature of light is high and is regulated by a forced-air cooling system to maintain a stable temperature in the middle of the box. The air used by the forced-air cooling system is sucked from the closed environment of the patient through an aeration port, located close to the light source and evacuated out of the box by one or two ventilators. No filter existed to avoid the dispersion of particles outside of the processor box. The light source box also contains an insufflation air pump. The air is sucked from the light source box through one or two holes of the air pump and pushed from the air pump into the air pipe of the endoscope through a plastic tube. As the air pump did not had no dedicated HEPA filter, microorganisms transmission cannot be excluded.

**Conclusions** Changes are necessary to prevent airborne transmission: exclusive use of an external CO2 pump and wrapping the endoscope platform by a plastic film that will limit microorganism scattering. In the era of pandemic

virus with airborne transmission, improvement of GI ventilation system are necessary to avoid patients and health care workers contamination.

## eP507 COVID-19 OUTBREAK IMPACT ON A PORTUGUESE ENDOSCOPIC UNIT

**Authors** [Rafael MA<sup>1</sup>](#), [Correia F<sup>1</sup>](#), [Branco J<sup>1</sup>](#), [Carvalho Lourenço L<sup>1</sup>](#), [Carvalho R<sup>1</sup>](#), [Martins A<sup>1</sup>](#)

**Institute** 1 Hospital Professor Doutor Fernando Fonseca, Gastroenterology, Amadora, Portugal

**DOI** [10.1055/s-0041-1724996](https://doi.org/10.1055/s-0041-1724996)

**Citation** Rafael MA, Correia F, Branco J et al. eP507 COVID-19 OUTBREAK IMPACT ON A PORTUGUESE ENDOSCOPIC UNIT. *Endoscopy* 2021; 53: S266.

**Aims** We evaluated the initial impact of COVID-19 outbreak on endoscopic procedures from a Gastroenterology department in a Portuguese hospital.

**Methods** All esophagogastroduodenoscopies (EGD), colonoscopies, endoscopic retrograde cholangio-pancreatographies (ERCP) and endoscopic ultrasounds (EUS) performed between April and June 2020 were compared with all these procedures performed between April and June 2019. In EGD and colonoscopies, whether they were elective or urgent was registered. The reasons of procedures leading to new cancer diagnosis and the presence of advanced polyps in colonoscopies were recorded.

**Results** Between April and June 2020, 513 EGD and colonoscopies were performed, 42% of those performed during the same trimester in 2019. Although this difference occurred mainly due to a reduction to 34.5% in the number of elective procedures, urgent EGD and colonoscopies were also reduced to 73.2%. The detection rate of advanced adenomas was similar in 2019 and 2020 (16.8% in 2019 and 17.8% in 2020), meaning that only one third were detected in 2020. In 2020, 87.2% of ERCP and 46.3% of EUS from 2019 were done. 4 EGD in COVID-19 positive patients were performed in this trimester.

In 2020, only 46% of new cancer diagnosis were made, when compared to the same period of 2019. This reduction was significant in colorectal and esophageal cancers, but not in gastric cancer. The proportions of new oncological diagnosis during urgent procedures in 2019 and 2020 were 20.5% and 38.9% respectively.

**Conclusions** Although repercussions from this pandemic on digestive Oncology are already evident, its real impact is far from being known. The delay of colorectal cancer diagnosis, the second most common cause of cancer death in Europe, will lead to a significant increase in overall morbimortality. National and international programs to recover this fall in endoscopic procedures will be of the most importance to reduce this outcome of COVID-19.

## eP508 ENDOSCOPY DURING THE COVID-19 PANDEMIC: HOW TO MINIMIZE THE RISKS? A SINGLE OUTPATIENT CENTRE EXPERIENCE

**Authors** [Panarese A<sup>1</sup>](#), [Licinio R<sup>1</sup>](#), [Palermo S<sup>1</sup>](#), [Marucci C<sup>1</sup>](#), [Lovero R<sup>1</sup>](#), [Abbruzzi F<sup>1</sup>](#), [Labarile N<sup>1</sup>](#)

**Institute** 1 "SS Annunziata" Hospital, Department of Gastroenterology and Digestive Endoscopy, Taranto, Italy

**DOI** [10.1055/s-0041-1724997](https://doi.org/10.1055/s-0041-1724997)

**Citation** Panarese A, Licinio R, Palermo S et al. eP508 ENDOSCOPY DURING THE COVID-19 PANDEMIC: HOW TO MINIMIZE THE RISKS? A SINGLE OUTPATIENT CENTRE EXPERIENCE. *Endoscopy* 2021; 53: S266.

**Aims** All gastrointestinal endoscopic procedures have a high risk of aerosol contamination of the novel coronavirus to all healthcare workers. For this reason, during the lockdown the health systems reduced all non-urgent endoscopic activities. On this second wave of the coronavirus disease 2019 (COVID 19) pandemic we cannot afford to suspend activities, as the health system is already overloaded. Our centre has continued regular endoscopic activity following a strict protocol to ensure maximum safety for patients and for endoscopy staff.

**Methods** Since October 2020 all patients requiring endoscopy examinations undergo a telephone triage two days before, which includes questions regarding body temperature, travel history, symptoms. In asymptomatic patients throat swabs for COVID-19 nucleic acid polymerase chain reaction testing are collected the day before; for those with symptoms, endoscopy is postponed and they follow the protocols provided by our government as well as those who tested positive for the swab. During the endoscopy examination, endoscopy staff wear all personal protective equipment: surgical masks, face shields, disposable hats, shoe covers, gowns and gloves.

**Results** In these two months, despite the exponential increase in infections, we ensured 20 endoscopies a day for 6 days a week. 1040 patients have been subjected to our protocol: 12 were symptomatic, 5 were already aware of being Covid-19 positive and they were in quarantine, 148 refused procedure for several reasons and 3 tested positive for the swab. To date we have secured 83.8% of our unit's full capacity and no endoscopy-related COVID-19 nosocomial infections have been reported because of the strict execution of screening protocols.

**Conclusions** Our experience shows that normal endoscopic activity can continue thanks to a strict screening procedures, ensuring the safety of patients and healthcare workers. It is also a way to screen all the population preventing the spread of COVID-19.

## eP509 GASTROINTESTINAL BLEEDING IN COVID-19 PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Authors** [Marasco G<sup>1</sup>](#), [Maida M<sup>2</sup>](#), [Morreale GC<sup>2</sup>](#), [Licata M<sup>2</sup>](#), [Cremon C<sup>1</sup>](#), [Stanghellini V<sup>1</sup>](#), [Barbara G<sup>1</sup>](#)

**Institute** 1 University of Bologna, Department of Medical and Surgical Science, Bologna, Italy; 2 Gastroenterology and Endoscopy Unit, S. Elia-Raimondi Hospital, Caltanissetta, Italy

**DOI** [10.1055/s-0041-1724998](https://doi.org/10.1055/s-0041-1724998)

**Citation** Marasco G, Maida M, Morreale GC et al. eP509 GASTROINTESTINAL BLEEDING IN COVID-19 PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Endoscopy* 2021; 53: S267.

**Aims** The novel SARS-CoV-2 disease (COVID-19) has been reported to affect the gastrointestinal (GI) system with a wide variety of symptoms, including GI bleeding. The aim of this meta-analysis is to estimate the rate of GI bleeding of patients infected with SARS-CoV-2.

**Methods** MEDLINE via PubMed, Ovid Embase, Scopus and Cochrane Library were systematically searched through October, 10th 2020. Studies simultaneously reporting cohorts of COVID-19 patients with and without GI bleeding were included. A random-effect model was applied for pooling results; heterogeneity was expressed as  $I^2$ . Impact of confounding covariates on the meta-analytic results was evaluated using meta-regression analysis.

**Results** Seven studies (including a total of 1047 COVID-19 patients) met the inclusion criteria and were included in the analysis.

Among COVID-19 patients with gastrointestinal bleeding, 93 experienced upper and 21 lower GI bleeding. The mean age of participants ranged from 45.3 to 73.7 years. Four studies have been carried out in Western countries (2 in the US, 1 in Italy and 1 in Israel), and 3 in Eastern countries (China). Three studies reported the rate of patients taking anticoagulants or antiplatelets, ranging from 37.4% to 100%. The overall pooled bleeding rate was 9% [95% CI: 2% to 20%], with high heterogeneity ( $I^2$  96.4%), and no "small study effect" observed using the Egger test ( $p=0.979$ ). The pooled upper gastrointestinal bleeding rate was 7% (95% CI: 1% to 17%,  $I^2$  95.3%, Egger test  $p=0.835$ ), whereas the pooled lower gastrointestinal bleeding rate was 1% (95% CI: 0% to 4%,  $I^2$  82.4%, Egger test  $p=0.437$ ). Meta-regression analysis showed that overall risk bleeding was significantly affected by the geographic area of the study ( $\beta$  0.899±0.027) and the upper source of bleeding ( $\beta$  1.010±0.003).

**Conclusions** In this meta-analysis of published studies, individuals with SARS-CoV-2 infections were found to be at risk for GI bleeding, especially upper GI bleeding.

## eP510 PREVALENCE AND CLINICAL CHARACTERISTICS OF GASTROINTESTINAL MANIFESTATIONS IN COVID-19 PATIENTS IN PERU: A MULTICENTER COHORT STUDY

**Authors** [Agurto HS<sup>1</sup>](#), [Veramendi-Schultz I<sup>2</sup>](#), [Vásquez-Elera L<sup>3</sup>](#), [Gonzales-Soler Z<sup>4</sup>](#), [Lozano A<sup>5</sup>](#), [Zavaleta Alva R<sup>2</sup>](#), [Marín-Dueñas I<sup>6</sup>](#), [Vega J<sup>6</sup>](#), [Bautista-Altamirano C<sup>7</sup>](#)

**Institute** 1 Universidad Peruana Cayetano Heredia, Lima, Peru; 2 Hospital Nacional Hipólito Unanue, Gastroenterology, Lima, Peru; 3 Hospital Regional José Cayetano Heredia, Gastroenterology, Piura, Peru; 4 Hospital Santa Rosa, Gastroenterology, Piura, Peru; 5 Hospital Nacional Arzobispo Loayza, Gastroenterology, Cercado de Lima, Peru; 6 Hospital Nacional Arzobispo Loayza, Gastroenterology, Lima, Peru; 7 San Pablo Clinic, Gastroenterology, Lima, Peru

**DOI** [10.1055/s-0041-1724999](https://doi.org/10.1055/s-0041-1724999)

**Citation** Agurto HS, Veramendi-Schultz I, Vásquez-Elera L et al. eP510 PREVALENCE AND CLINICAL CHARACTERISTICS OF GASTROINTESTINAL MANIFESTATIONS IN COVID-19 PATIENTS IN PERU: A MULTICENTER COHORT STUDY. *Endoscopy* 2021; 53: S267.

**Aims** World Health Organization defined the Coronavirus Disease 2019 as an international public health emergency. Although the majority have respiratory symptoms; there is evidence that it can also present with digestive symptoms such as diarrhea or abdominal pain. Our objective was to determine the prevalence and describe clinical characteristics of gastrointestinal manifestations in patients hospitalized for coronavirus in a multicenter cohort from Peru.

**Methods** We designed a prospective, descriptive and cross-sectional study in adults patients from four Hospitals in Peru. The study population were patients older than 18 years with a diagnosis of COVID-19, in the period from May 22 to July 11, 2020 and who met the inclusion criteria. The Chi-Square test was used for the qualitative variables and the Mann-Whitney "U" test for the quantitative variables, statistical significance was considered a value of  $p < 0.05$ . The IBM SPSS v 23 program was used.

**Results** From a total of 1313 patients, 35.9% of the patients had at least one gastrointestinal symptom, being diarrhea (12.9%) the most frequent. Patients with gastrointestinal symptoms had higher rates of fever, fatigue, headache, sore throat, dysosmia and dysgeusia. Diabetes Mellitus, Arterial Hypertension, dyslipidemia and obesity were also found more frequently in this group. There were no differences in terms of laboratory, severity and mortality in both groups.

**Conclusions** Health personnel should bear in mind that digestive symptoms can be one of the forms of presentation of COVID-19; for timely identification and early treatment.

## eP511 DOES PERSONAL PROTECTIVE EQUIPMENT IN THE ERA OF COVID-19 INFLUENCE QUALITY OF COLONOSCOPY?

**Authors** [Nascimento C<sup>1</sup>](#), [Ramos L<sup>1</sup>](#), [Frias Gomes C<sup>1</sup>](#), [Revés J<sup>1</sup>](#), [Morão B<sup>1</sup>](#), [Palmela C<sup>1</sup>](#), [Ferreira A<sup>1</sup>](#), [Glória L<sup>1</sup>](#)

**Institute** 1 Hospital Beatriz Ângelo, Loures, Portugal

**DOI** [10.1055/s-0041-1725000](https://doi.org/10.1055/s-0041-1725000)

**Citation** Nascimento C, Ramos L, Frias Gomes C et al. eP511 DOES PERSONAL PROTECTIVE EQUIPMENT IN THE ERA OF COVID-19 INFLUENCE QUALITY OF COLONOSCOPY? *Endoscopy* 2021; 53: S267.

**Aims** In March 2020, COVID-19 has been declared as a pandemic, resulting in modulation of endoscopic activity and enhancement of personal protective equipment (PPE) when performing colonoscopy. Recently, it has been shown



that such PPE interferes with visual and auditory perception. Our aim was to evaluate if PPE may negatively impact colonoscopy quality.

**Methods** Cross-sectional retrospective study comparing colonoscopy quality indicators between elective outpatient non-therapeutic colonoscopies performed between April and May 2019 and 2020 (lockdown period). We included patients aged > 50 years old and excluded patients with inflammatory bowel disease, history of colon surgery or cancer (CRC). 300 colonoscopies were randomly and evenly selected from the two groups. Cecal intubation rate (CIR), adenoma detection rate (ADR), mean number of polyps, adenomas and serrated sessile lesions (SSL) per colonoscopy were assessed and compared.

**Results** Groups were similar regarding gender, mean age and exam indication. Indications for colonoscopy were classified as screening (25 % vs 22 %), diagnosis (41 % vs 48 %) and post-polypectomy surveillance (33 % vs 29 %). There was no significant difference in CIR (90 % vs 88 %), adequate bowel preparation (70.5 % vs 70.6 %,  $p = 0.970$ ) and procedure duration. Polyp, adenoma and SSL detection rates were similar in both groups (66.7 % vs 66.7 %,  $p = 0.999$ ; 57.4 % vs 51.4 %,  $p = 0.609$ ; 5.5 % vs 9.5 %,  $p = 0.173$ ). There was no difference in the mean number of polyps and adenomas. For polyps < 5 mm the mean number was lower in 2020 (1.59 vs 1.09,  $p = 0.028$ ). There was no difference in high-risk patients (19.3 % vs 21.1 % ( $p = 0.143$ ) and CRC (4.7 % vs 2 %,  $p = 0.335$ ). The ADR difference remained non-significant, after adjusting (multivariate analysis) for bowel preparation, intubation detection rate, endoscopist and exam duration.

**Conclusions** In our study, the use of PPE did not influence key performance measures of colonoscopy quality.

## eP512 THE IMPACT OF SARS-COV-2 ON THE IRISH NATIONAL COLORECTAL CANCER SCREENING PROGRAMME: A REPORT FROM TWO HIGH-VOLUME ENDOSCOPY CENTRES

**Authors** Ring E<sup>1,2</sup>, Conlon C<sup>2</sup>, Kerr H<sup>2</sup>, O'Grady J<sup>2</sup>, Devlin S<sup>1</sup>, Stewart S<sup>2</sup>, Leyden J<sup>2</sup>, Cullen G<sup>1</sup>, Horgan G<sup>1</sup>, Sheridan J<sup>1</sup>, Mulcahy H<sup>1</sup>, Buckley M<sup>1</sup>, MacMathuna P<sup>2</sup>, Doherty G<sup>1</sup>, Lahiff C<sup>2</sup>

**Institute** 1 St Vincents University Hospital, Gastroenterology, Dublin, Ireland; 2 Mater Misericordiae University Hospital Dublin, Gastroenterology, Dublin, Ireland

DOI 10.1055/s-0041-1725001

**Citation** Ring E, Conlon C, Kerr H et al. eP512 THE IMPACT OF SARS-COV-2 ON THE IRISH NATIONAL COLORECTAL CANCER SCREENING PROGRAMME: A REPORT FROM TWO HIGH-VOLUME ENDOSCOPY CENTRES. *Endoscopy* 2021; 53: S268.

**Aims** The Irish National BowelScreen programme paused activities in March 2020 to prioritise the emergency response to the SARS-CoV-2 pandemic. As a result, patients with positive fecal immunochemical test (FIT) results that had already been returned, experienced delays in time to colonoscopy. The standard lead time in BowelScreen is 20 working days. The aim of this study was to examine the impact of this delay on time to colonoscopy for index FIT positive cases in two tertiary endoscopy units.

**Methods** Index cases affected by the pause which were subsequently completed (up to July 2020) were analyzed and compared to the same period in 2019. All colonoscopy's were performed by a BowelScreen accredited consultant endoscopist. Endoscopy and histology data was obtained from the BowelScreen database and patient records.

**Results** In total, 111 colonoscopies were performed during the study period. During the same period in 2019, 226 index colonoscopies were completed. The median lead time in 2020 was 38 working days, or almost double the recommended lead time. The median age in 2020 was 66.5 years (IQR 60-70) and in 2019 63 years (IQR 60-70). Men accounted for 55 % of patients in 2020 and 66 % in 2019. A total of 191 polyps were detected in the 2020 group, 16 % of which were advanced adenomas (adenoma  $\geq 10$ mm). There were 394 polyps identified in the 2019 group, 16 % of which were advanced adenomas.

The majority of these advanced adenomas (77 % in 2020 and 90 % in 2019) were left sided. High grade dysplasia was detected in one polyp in 2020 and in five in 2019. There were 3 cancers detected in 2020 and 11 in 2019.

**Conclusions** There was a significant delay in lead time to index colonoscopy for FIT positive patients in BowelScreen. Despite this, the two groups had comparable advanced adenoma and cancer pathology detection rates.

## eP513 THE IMPACT OF THE COVID-19 PANDEMIC ON COLORECTAL CANCER SCREENING IN THE CZECH REPUBLIC

**Authors** Suchanek S<sup>1</sup>, Ngo O<sup>2,3</sup>, Grega T<sup>1</sup>, Kouril J<sup>3</sup>, Vojtechova G<sup>1</sup>, Majek O<sup>2,3</sup>, Zavoral M<sup>1</sup>

**Institute** 1 Faculty of Medicine, Charles University, Military University Hospital, Department of Internal Medicine, Prague, Czech Republic; 2 Faculty of Medicine, Masaryk University, Institute of Biostatistics and Analyses, Brno, Czech Republic; 3 Institute of Health Information and Statistics, Prague, Czech Republic

DOI 10.1055/s-0041-1725002

**Citation** Suchanek S, Ngo O, Grega T et al. eP513 THE IMPACT OF THE COVID-19 PANDEMIC ON COLORECTAL CANCER SCREENING IN THE CZECH REPUBLIC. *Endoscopy* 2021; 53: S268.

**Aims** The population-based National Colorectal Cancer (CRC) Screening Program in the Czech Republic is offered to asymptomatic individuals aged over 50. Two methods are available: the fecal immunochemical fecal test (FIT) at age 50 – 54 annually; at age  $\geq 55$  biennially (followed by FIT+ colonoscopy, if positive) and screening colonoscopy at age  $\geq 50$  in 10 years interval. Besides these screening methods, colorectal adenomas and cancers might be found out with diagnostic colonoscopy or diagnostic FIT. During the first period of the COVID-19 pandemic (March to May) majority of the Endoscopy Units were closed or their activity was limited. Aim of the analysis was the evaluation of the CRC related procedures (screening and diagnostic FIT; screening colonoscopies; diagnostic colonoscopies) performed in the first six months of the year 2020 compared to the same period in the year 2019.

**Methods** The analysis was performed using the National Registry of Reimbursed Health Services in the Czech Republic.

**Results** Comparing the periods from January to June in year 2020 and 2019, the analyzed procedures altogether dropped by 20.6 % with maximum decrease in April (-71.6 %) and recovery phase in June (+27.6 %). The most noticeable impact was on the screening FIT (detail results in the table).

**Conclusions** The decline of the colorectal cancer prevention related procedures in the first period of COVID-19 pandemic was followed by the intensive recovery phase. The long-term impact on CRC incidence and mortality will be influenced by the ongoing second phase of the pandemic and its future development.

Supported by the Czech Ministry of Health grants No. NV18-08-00246 and No. 17-31909A and projects MO1012 and Progres Q28/LF1.

Procedure/time period	April	June	January-June
Screening FIT	-75.9 %	+32.2 %	-22.6 %
Screening colonoscopy	-58.4 %	-7.0 %	-20.5 %
Diagnostic FIT	-67.8 %	+67.5 %	+10.8 %
Diagnostic colonoscopy	-53.8 %	+4.7 %	-17.6 %

## eP514 BIOFILM FORMATION IN DUODENOSCOPE WORKING CHANNELS IN A SIMULATED ERCP SETTING

**Authors** Kwakman J<sup>1,2</sup>, Bruno M<sup>1</sup>, Vos M<sup>2</sup>

**Institute** 1 Erasmus Medical Center, Department of Gastroenterology & Hepatology, Rotterdam, Netherlands; 2 Erasmus Medical Center, Department of Medical Microbiology and Infectious Diseases, Rotterdam, Netherlands  
**DOI** 10.1055/s-0041-1725003

**Citation** Kwakman J, Bruno M, Vos M. eP514 BIOFILM FORMATION IN DUODENOSCOPE WORKING CHANNELS IN A SIMULATED ERCP SETTING. *Endoscopy* 2021; 53: S269.

**Aims** Despite adjustments of the distal tip, with completely disposable caps and elevators, contamination of duodenoscopes still prevails. This might be due to biofilm formation inside the channels. In this study, biofilm formation inside working channels of duodenoscopes was researched in a simulated ERCP setting.

**Methods** Three new duodenoscopes (DEC ED34-i10T2, Pentax) were used in a simulated ERCP setting where they were soiled with artificial test soil (ATS2015, Healthmark) containing an excessive amount of 10<sup>8</sup> CFU/mL of *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Escherichia coli* and *Enterococcus faecium*. Soiling was followed by manual cleaning, high level disinfection (HLD) and overnight storage in drying cabinets. After forty tests, only the *P. aeruginosa* strain (Pa-Type 1) was switched to a different *P. aeruginosa* strain (Pa-Type 2) for twenty subsequent tests. Cultures of the tip and working channel were acquired after HLD and overnight storage. Maldi-Tof MS was used to differentiate between the presence of the two different *P. aeruginosa* strains.

**Results** One of the three duodenoscopes showed persistent growth of *P. aeruginosa* from the fifth test until the end of the study. Pa-Type 1 remained present in the cultures of this duodenoscope, despite the fact that soiling with that specific strain was discontinued, until the end of the study with just a few negative tests in between. Quickly after introduction, Pa-Type 2 became also present in conjunction to Pa-Type 1. Borescope inspections of all three duodenoscopes revealed no abnormalities. The other two duodenoscopes only showed incidental contamination.

**Conclusions** The persistent contamination by Pa-Type1, even after replacing with Pa-Type2 and 55 times HLD, of one duodenoscope, suggests presence of a biofilm. No clear explanation was found for the formation of this biofilm, as no abnormalities of this duodenoscope were identified and the other two exact same duodenoscopes did not develop persistent positive cultures.

## eP515 ADDITION OF NEUTRALIZER TO DUODENOSCOPE SAMPLES INCREASES YIELD OF CULTURES ACQUIRED AFTER HIGH LEVEL DISINFECTION

**Authors** Kwakman J<sup>1,2</sup>, Bruno M<sup>1</sup>, Vos M<sup>2</sup>

**Institute** 1 Erasmus Medical Center, Department of Gastroenterology & Hepatology, Rotterdam, Netherlands; 2 Erasmus Medical Center, Department of Medical Microbiology and Infectious Diseases, Rotterdam, Netherlands  
**DOI** 10.1055/s-0041-1725004

**Citation** Kwakman J, Bruno M, Vos M. eP515 ADDITION OF NEUTRALIZER TO DUODENOSCOPE SAMPLES INCREASES YIELD OF CULTURES ACQUIRED AFTER HIGH LEVEL DISINFECTION. *Endoscopy* 2021; 53: S269.

**Aims** A reliable culturing method is necessary to properly monitor contamination of duodenoscopes. The CDC advises addition of neutralizers to culture samples to neutralize remaining detergents or disinfectants. However, evidence that this method promotes appropriate outcomes of culturing and circumvents false negative results is not available. This study compares the yield of cultures with and without addition of a neutralizer.

**Methods** We found two brand new duodenoscopes of the same type (DEC ED34-i10T2, Pentax) to show persistent contamination after they were subjected to simulated ERCP procedures with an artificial test soil (ATS2015, Healthmark) containing a very high concentration (10<sup>8</sup> CFU/mL) of gut flora. The soiling was followed by manual cleaning, high level disinfection (HLD) and overnight storage in a drying cabinet. Samples of duodenoscope 1 were collected after HLD or drying and samples of duodenoscope 2 were collected at both points. Sampling included a swab of the distal tip and a flush-brush-flush of the working channel. Only samples of duodenoscope 2 were supplemented with Dey-Engley neutralizing broth.

**Results** Duodenoscope 1 completed 70 tests (38 samples after HLD, 32 after drying). Duodenoscope 2 completed 60 tests. Of duodenoscope 2, significantly ( $P < 0,001$ ) more samples collected immediately after HLD were positive compared to samples of duodenoscope 1, respectively 57 (95%) and 3 (7.9%). There was no significant difference in samples collected after drying, 23 (71.9%) positive tests in duodenoscope 1 and 49 (81.7%) in duodenoscope 2 ( $P = 0.278$ ).

**Conclusions** The difference in yield of samples collected directly after HLD is likely due to false negative cultures in those samples not treated with neutralizers. No increased yield was found in samples collected with or without a neutralizer after overnight storage. Neutralizers should be added to samples collected of wet duodenoscopes to avoid false negative culture results. Neutralizers are not needed when sampling dried duodenoscopes.

## eP516 ATP TESTS AFTER MANUAL CLEANING DO NOT PREDICT THE PRESENCE OF MICROORGANISMS ON DUODENOSCOPES AND LINEAR ECHOENDOSCOPES AFTER HIGH LEVEL DISINFECTION

**Authors** Kwakman J<sup>1,2</sup>, Rauwers A<sup>1,2</sup>, Vos M<sup>2</sup>, Bruno M<sup>1</sup>

**Institute** 1 Erasmus Medical Center, Department of Gastroenterology & Hepatology, Rotterdam, Netherlands; 2 Erasmus Medical Center, Department of Medical Microbiology and Infectious Diseases, Rotterdam, Netherlands  
**DOI** 10.1055/s-0041-1725005

**Citation** Kwakman J, Rauwers A, Vos M et al. eP516 ATP TESTS AFTER MANUAL CLEANING DO NOT PREDICT THE PRESENCE OF MICROORGANISMS ON DUODENOSCOPES AND LINEAR ECHOENDOSCOPES AFTER HIGH LEVEL DISINFECTION. *Endoscopy* 2021; 53: S269.

**Aims** Microbiological culturing is the gold standard in monitoring contamination of endoscopes, but has a considerable turnaround time. Adenosine triphosphate (ATP) tests promise to detect any biological material on endoscopes quickly, however, their reliability to detect contamination is not conclusively proven. We investigated the value of ATP tests after manual cleaning to predict the presence or absence of microorganisms shown by culture after high level disinfection (HLD) in duodenoscopes and linear echoendoscopes (DLE).

**Methods** ATP surface and water tests (Clean-Trace, 3M Company) were performed on samples taken from the cap, forceps elevator and flush of the working channels of DLEs after manual cleaning. These results were compared to the growth of any microorganisms in cultures acquired after HLD. ATP tests with >200 relative light units (RLU) were considered positive. ROC curves were used to compare the RLU levels with presence of microorganisms in the cultures.

**Results** In total, 901 tests were performed involving 26 different DLEs. The forceps elevator had a positive ATP test in 306 tests (34.0%), the cap in 146 tests (45.3%) and the channel in 116 tests (12.9%). The ATP test was false-negative in 219 (36.8%) of the forceps elevator samples, in 37 (21%) of the cap samples, and in 257 (32.9%) of the channel samples. Irrespective of the type of microorganisms, type of DLE and sample site, no correlation was found between ATP test results after manual cleaning and microbial growth in cultures acquired after HLD. The area under the curves of different ROC curves were low, with a maximum of 0.607.

**Conclusions** We found no evidence that ATP tests performed after manual cleaning can predict the presence or absence of microorganisms after HLD as shown by culture. This cannot be explained by the effect of HLD alone, since there was also a high number of false-negative ATP tests.

### eP517 GASTROINTESTINAL ENDOSCOPE CONTAMINATION RATE BEYOND THE ELEVATOR: A SYSTEMATIC REVIEW AND META-ANALYSIS BASED ON EUROPEAN DATA

**Authors** Larsen S<sup>1</sup>, Birk Larsen N<sup>2</sup>, Klinten Ockert L<sup>1</sup>, Adamsen S<sup>1,3</sup>

**Institute** 1 Ambu A/S, Ballerup, Denmark; 2 Aalborg University, School of Medicine and Health, Aalborg, Denmark; 3 Bispebjerg Hospital, University of Copenhagen, Digestive Disease Center, Copenhagen, Denmark  
DOI 10.1055/s-0041-1725216

**Citation** Larsen S, Birk Larsen N, Klinten Ockert L et al. eP517 GASTROINTESTINAL ENDOSCOPE CONTAMINATION RATE BEYOND THE ELEVATOR: A SYSTEMATIC REVIEW AND META-ANALYSIS BASED ON EUROPEAN DATA. *Endoscopy* 2021; 53: S270.

**Aims** The elevator has been suggested a key factor in multiple European outbreaks associated with contaminated reusable patient-ready duodenoscopes. The outbreaks have led to increased focus on contamination of the elevator. However, numerous studies have documented microbes in gastrointestinal (GI) endoscopes without an elevator and in the channels of both duodenoscopes and linear echoendoscopes. We aimed estimate the contamination rate beyond the elevator of GI endoscopes based on currently available European data.

**Methods** We searched PubMed, Web of Science, and Embase from 1 January 2010 until 10 October 2020, for European studies investigating contamination rates of patient-ready GI endoscopes. Analysis and inclusion criteria were based on the PRISMA guideline. A random-effects model based on the proportion distribution was used to calculate the total weighted contamination rate beyond the elevator of patient-ready GI endoscopes. Heterogeneity between the included studies was analysed using the inconsistency index ( $I^2$ ) statistics. Publication bias was assessed using funnel plot and Egger's regression test.

**Results** Based on the inclusion criteria, we identified seven European studies including 383 positive cultures from a total of 1,834 samples. The total weighted contamination rate was  $18.16\% \pm 0.053$  (95% confidence interval [CI]: 7.75% - 28.57%).  $I^2$  indicated high heterogeneity (98.1%). Egger's regression test indicated significant publication bias (Egger's test of publication bias:  $p=0.0025$ ).

**Conclusions** Our analysis demonstrates, that 18.16% of patient-ready GI endoscopes may be contaminated when used in patients. These findings highlight that the elevator mechanism is not the only obstacle when reprocessing flexible reusable GI endoscopes. Additionally, these findings also indicate that contamination issues are present in European health care settings despite less

acknowledgement compared to the United States. However, high heterogeneity and significant publication bias should be considered when interpreting these results.

### eP518 STATED CONTAMINATION RATES ASSOCIATED WITH REUSABLE COLONOSCOPES AND GASTROSCOPES AMONGST EUROPEAN ENDOSCOPISTS: A SURVEY-BASED INVESTIGATION

**Authors** Larsen S<sup>1</sup>, Klinten Ockert L<sup>1</sup>, Kryger Rindorf D<sup>1</sup>, Adamsen S<sup>1,2</sup>

**Institute** 1 Ambu A/S, Ballerup, Denmark; 2 Bispebjerg Hospital, University of Copenhagen, Digestive Disease Center, Copenhagen, Denmark  
DOI 10.1055/s-0041-1725217

**Citation** Larsen S, Klinten Ockert L, Kryger Rindorf D et al. eP518 STATED CONTAMINATION RATES ASSOCIATED WITH REUSABLE COLONOSCOPES AND GASTROSCOPES AMONGST EUROPEAN ENDOSCOPISTS: A SURVEY-BASED INVESTIGATION. *Endoscopy* 2021; 53: S270.

**Aims** Studies have demonstrated contamination rates of reusable colonoscopes and gastroscopes, which have led to several updates of reprocessing guidelines. We aimed to investigate the contamination rate of colonoscopes and gastroscopes stated amongst gastrointestinal (GI) endoscopist in five European countries.

**Methods** Between 24 September 2020 and 12 October 2020, a total of 459 GI endoscopists from the UK ( $n=100$ ), France ( $n=90$ ), Germany ( $n=72$ ), Italy ( $n=99$ ) and Spain ( $n=99$ ) answered an electronic survey concerning perceived contamination rates and reprocessing setups. Data were collected using QuestionPro and analysed using Microsoft Excel.

**Results** Across all five countries the average stated contamination rate was 12.6% and 10.2% for colonoscopes and gastroscopes, respectively. Italian GI endoscopists reported the highest contamination rate (21.2% for colonoscopes and 12.7% for gastroscopes), whereas GI endoscopists from the UK reported the lowest contamination rate (6.5% for colonoscopes and 7.2% for gastroscopes). The majority used high-level disinfection (HLD, [31.2%]) followed by double HLD (25.7%), whereas 25.9% of the respondents were unaware of the reprocessing setup at their endoscopy unit. There were no significant differences between the stated contamination rate and reprocessing method ( $p=0.2293$ ). Endoscopists from the UK were most often unaware of the reprocessing method used (59.0%) followed by endoscopists from France (23.3%). There were no significant differences between stated contamination rates and annual procedure volume ( $p=0.0602$ ).

**Conclusions** Our findings indicate that contamination issues of colonoscopes and gastroscopes are acknowledged amongst European GI endoscopists. The average stated contamination rate across countries was 12.6% and 10.2% for colonoscopes and gastroscopes, respectively. A total of 26% of the endoscopists were unaware of the reprocessing setup at their endoscopy unit.

## Authors' Index

- A**
- Abbruzzi F S266  
 Abd El Razeq M S188  
 Abd Elmoety A S149  
 Abd Elmoneim RS S149  
 Abd El-Rahim A S231  
 Abd-Almonem E S117  
 Abdel-Fattah A S231  
 Abdelhafez M S28, S107, S171, S242, S250  
 Abdelli MN S113, S182  
 Abdelrahim M S9, S50, S251, S256  
 Abdel-Samiee M S117  
 Abo Elezz M S225  
 Abobakr S S225  
 Abo-Elazm O S135  
 Abou Ali E S38, S190, S266  
 Abou El-Magd ES S132  
 Abouali E S156  
 Aboukamar WA S169  
 Abu Asbeh Y S113  
 Abu Baker F S63, S98, S178  
 Abu Freha N S157, S166  
 Abu Tailakh M S157, S166  
 Abu-Freha O S157, S166  
 AC Caetano S98  
 AC Lopez S66  
 Aceituno M S121  
 Acharjee A S73  
 Adam M S139  
 Adamsen S S136, S162, S270  
 Aden K S74  
 Aerts M S39  
 Afecto E S179, S263, S264  
 Affi A S50  
 Affi M S199  
 Affy A S135  
 Affy S S199  
 Afonso LP S22, S52  
 Agarwala R S67, S233, S239  
 Ageykina N S200  
 Agostinho AG S251  
 Agostinho C S131  
 Agudo B S59, S80, S213  
 Aguilar A S123  
 Agurto HS S267  
 Ahmad A S60, S76, S137, S154  
 Ahmad O S8, S10, S255  
 Ahmad OF S58  
 Ahmad WT S249  
 Ahmed W S41, S216, S232  
 Aibidi A S131  
 Aicart Ramos M S5  
 Ai'ming Y S193  
 Aithal GP S41  
 Aizawa M S84  
 Ajana FZ S100, S112, S201, S204, S206, S217, S231, S234  
 Ajana F-Z S99  
 Ajmi S S82, S108, S110, S155, S166, S182, S184  
 Akan K S126  
 Akkari I S117, S118, S185, S186  
 Akshintala VS S84, S242  
 Aksionchik M S109  
 Akyuz F S183  
 Al Ghamdi S S242  
 Alamour O S157, S166  
 Alavinejad P S257  
 Albeniz E S34, S48, S84, S91, S92, S109, S201  
 Albéniz-Arbizu E S90  
 Albert J S55, S56  
 Albert M S257  
 Albillos A S5, S110, S111  
 Alborae M S257  
 Albouys J S34, S86, S88, S234  
 Albuquerque M S15, S78, S213, S214  
 Alcivar-Vasquez J S23, S24, S54, S66, S71, S198, S245, S259  
 Aldave A S219  
 Aldeguer X S257  
 Aleksandr D S143  
 Aleksandr K S143  
 Alenezi M S13  
 Alexandrino G S141, S142, S157, S160, S210  
 Alexandrino H S251  
 Alizade N S183  
 Alkandari A S34, S108  
 al-Kandari A S9  
 Alkhalaf A S14, S30, S31  
 Almeida A S28, S137  
 Almeida N S131, S135, S192, S217, S251  
 Alonso Casado O S220  
 Alonso N S13, S21, S254  
 Alós S S224  
 Al-Rifaie A S258, S260  
 Alruzug IM S169  
 Alsibai TMA S169  
 Altamirano MI S5  
 Alvarado H S23, S54, S198, S245, S259  
 Álvarez Díaz N S110  
 Alvarez Herrero L S30, S31  
 Álvarez-Delgado A S90  
 Alvarez-Gonzalez MA S54, S88, S163, S164, S192  
 Alvaro D S36  
 Alves S S45, S119, S168, S197  
 Alves Silva J S44  
 Alves-Silva J S103  
 AM Ghiuchici S48, S49  
 AM Möller S227  
 A-M Singeap S102  
 Amalou K S6, S56, S203  
 Amaro A S131  
 Amaro P S73, S156, S169, S170  
 Amata M S43, S172, S236  
 Amato A S6, S41, S68, S237  
 Amaya-Vasquez N S219  
 Ambardekar P S166  
 Amer A S199  
 Amer H S199  
 Amin M S188  
 Amissah D S220  
 Amlani B S164, S181  
 Amorós Martínez J S54  
 Amorós-Tenorio A S90  
 Amoyel M S190  
 Ananias-Mariscal F S219  
 Anderloni A S6, S41, S68, S91, S92, S108, S233, S237  
 Anderson J S136, S142  
 Andrews E S195  
 Andrii S S143  
 Andrisani G S60  
 Andriulli A S153  
 Andújar X S27, S87, S121, S122  
 Annibale B S36, S122  
 Antípova M S259  
 Antonelli G S6, S9, S50, S53, S60, S95, S171, S257  
 Antoniello LM S91  
 Antônio Prince Franzini T S55  
 Antunes P S141  
 Antypas P S79  
 Aoko O S13, S103  
 Aoula SEI S201  
 AP Oliveira S49, S216  
 Aparicio JR S45, S46  
 Apolito P S25, S172  
 Aradya H S39, S182  
 Aragona G S41, S68  
 Arantes de Carvalho Visconti T S69  
 Ararem I S6  
 Arau B S121  
 Araujo I S23  
 Araújo R S52  
 Araújo T S146, S147, S212  
 Araújo-Martins M S158  
 Arberas Diez B S195  
 Archer S S161  
 Arcidiacono P S39  
 Arcidiacono PG S93  
 Arebi N S60  
 Areia M S45, S52, S119, S168, S197  
 Areste I S243, S260  
 Arew M S63  
 Arguelles-Estrada P S144, S216  
 Argüello L S13, S21, S254  
 Arias Rivera ML S5  
 Arieira C S127  
 Arihiro K S127  
 Armao FT S203  
 Armas D S23, S54  
 Armas-Ramírez I S147  
 Armelao F S100, S101  
 Armellini E S41, S68, S235  
 Armentano R S96  
 Armstrong P S136  
 Arnau A S76, S88  
 Arribas Anta J S5  
 Arribas J S9  
 Arrubla A S39, S48, S243, S260  
 Arthursson V S253  
 Artillo M S80  
 Artru P S237  
 Arvanitaki M S11  
 Arvanitakis M S101, S214  
 Arvaniti E S125  
 Asaturi A S265  
 Ascón N S76  
 Ashrafian H S139, S161  
 Askar M S151  
 Asselin J S57, S256  
 Assisi D S177, S228, S229  
 Astheimer P S16, S215  
 Atıcı A S183  
 Atsma F S84  
 Attallah H S231  
 Attardo S S108, S176  
 Attili F S41  
 Auditeau E S88  
 Aung MM S180  
 Aung NN S180  
 Auriemma F S38, S185, S221  
 Ausania F S224  
 Awadie H S140, S213  
 Ayadi S S81, S111  
 Ayari M S81, S111  
 Aye PS S180  
 Ayeboa-Sallah B S188  
 Ayuso JR S224  
 Azevedo Rodrigues J S108  
 Azouz MM S115, S116  
 Azzolini F S107, S174, S175  
 Azzouz M S164, S202  
 Azzouz MM S118, S146, S148, S149, S150, S196, S198, S204, S208, S211  
 Azzouz MM S118, S146, S148, S149, S150, S196, S198, S204, S208, S211
- B**
- Baak LC S26  
 Baatenburg de Jong RJ S104



- Baatrup G S96, S194  
 Bachmann J S171  
 Badas R S41, S68, S237  
 Baddi FZ S219  
 Baddour N S149  
 Badir M S113  
 Bakula D S230, S265  
 Balaguer F S77, S224  
 Balan GG S265  
 Bălănescu P S214  
 Baldaro F S63  
 Ballarè M S41  
 Ballester-Clau R S87, S114  
 Baltes P S7  
 Balzarini M S202  
 Bana e Costa T S212  
 Bang EJ S120, S149  
 Bangmao W S193  
 Banhudo A S134, S187  
 Banks M S8, S10  
 Bansi D S216  
 Bapaye A S64, S69, S86  
 Bapaye H S64, S69, S86  
 Baracat R S56  
 Barbara G S267  
 Barbaro F S85  
 Barboi O S194  
 Barbulescu A S190  
 Bardin I S90  
 Barhoom T S81  
 Barreiro Alonso E S5  
 Barreiro P S52, S59, S92, S108, S120  
 Barreiro-Alonso E S216  
 Barresi V S34  
 Barret M S15, S34, S84, S156, S190, S266  
 Barreto L S156, S169  
 Baršić N S191, S230  
 Barthet M S11, S16, S243  
 Bas-Cutrina F S87, S122  
 Basha J S223  
 Basina O S191  
 Bassi F S174  
 Bassi M S25, S172  
 Bassiokas S S15  
 Basterra M S260  
 Bastiaansen BAJ S34, S77  
 Bastos P S43, S106, S222  
 Batchelor J S135  
 Bautista-Altamirano C S267  
 Baxevasos G S125  
 Bayas Pástor DC S213, S214  
 Bazaga-Perez De Rozas S S244  
 Bazarova A S73  
 Bazerbachi F S53, S134  
 Beaton D S139  
 Beaumont H S7  
 Becar A S243  
 Becker T S42  
 Beegan R S135  
 Beer S S195  
 Bejinariu N S72  
 Bejjani M S242  
 Bel Hadj Mabrouk E S81, S111  
 Belghanem F S6, S56, S203  
 Belhassine M S147  
 Belhorma S S261  
 Belle A S156, S190, S266  
 Belletrutti PJ S176  
 Bellil N S79, S115, S117, S154, S155, S184, S196, S198, S200, S203  
 Bellum BL S233, S239  
 Bellumat A S130  
 Beltran V S144, S216  
 Ben abdallah H S113, S182  
 Ben abdallah H S113, S182  
 Ben Abdesselem K S110  
 Ben Ameur W S82, S108, S110, S155, S166, S182, S184  
 Ben Farha F S154  
 Ben Farhat F S115, S117, S165, S184, S196  
 Ben Jazia E S117, S118, S185, S186  
 Ben Mahmoud A S182  
 Ben Mohamed A S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S204, S208, S211  
 Ben Mohamed A S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S204, S208, S211  
 Ben Nejma H S165, S170, S183, S188, S199, S228  
 Ben Nejma H S165, S170, S183, S188, S199, S228  
 Ben Slama A S82, S108, S110, S155, S166, S182, S184  
 Ben slimen B S113  
 Bende F S48, S49  
 Benedetti A S36  
 Benelbarhadid I S99, S100, S112, S201, S204, S206, S217, S231, S234  
 Benesova K S82  
 Bengus A S82, S205, S214  
 Benhaim M S18, S19  
 Bennani A S219  
 Bennato R S148  
 Bennett G S161, S260  
 Benosman H S47, S238, S241  
 Bento Miranda M S156  
 Bento-Miranda M S104, S141  
 Benzarti Z S117  
 Berger A S15  
 Bergman JJ S31  
 Bergman JJGJM S14, S30, S31  
 Bernad Cabredo B S54  
 Bernardes WM S253  
 Bernardo WM S19, S46, S56, S124, S252  
 Bernhofer S S255  
 Berra SA S143  
 Bertani H S29  
 Bertomoro P S91  
 Beşişik F S183  
 Besselink MG S5, S26, S93  
 Bethge J S74  
 Bettinger D S102  
 Beyna T S65, S68, S143  
 Bhalla A S26  
 Bhandari M S135  
 Bhandari P S9, S34, S50, S53, S77, S251, S256  
 Bialek A S92  
 Bianchetti M S185, S221  
 Biasutto D S70  
 Bibani N S79, S115, S154, S155, S184, S196, S198, S200, S203  
 Bielicki D S152  
 Bielow T S195  
 Bikov M S24  
 Bilal S S116, S146  
 Binda C S41, S68, S89, S221, S233, S237  
 Binmoeller K S168  
 Birk Larsen N S270  
 Bisagni PAG S203  
 Bisello M S91  
 Bisschops R S8, S10, S42, S45, S58, S61, S77  
 Bisseling T S77  
 Bizid S S113, S182  
 Bizzotto A S51, S130  
 Bjoersum-Meyer T S194  
 Bjorsum-Meyer T S96  
 BL Bellum S67  
 Blakemore Kocadag T S58  
 Blancas-Valencia JM S128  
 Blanco-Velasco G S128  
 Blasberg T S81, S177  
 Błaszczczyńska M S62  
 Blazquez E S80  
 Ble M S168  
 Blero D S11, S35, S86, S101, S146, S214  
 Boal Carvalho P S7, S32, S52, S127, S129, S138, S145, S193, S208, S209  
 Boda T S124  
 Boermeester MA S5  
 Boeva I S70  
 Bofill A S48, S224  
 Bofill Diez-Cascón A S16  
 Boghossian MB S46, S252  
 Bogte A S30, S31  
 Bohan A S260  
 Böhlig A S195  
 Boladeras-Inglada A S245  
 Boland K S13  
 Bolboacă SD S222  
 Bollen TL S5  
 Bollina R S119, S177  
 Bonaccorsi Riani E S217  
 Bonaccorso A S43, S172, S236  
 Bond Boghossian M S55  
 Bongiovanni A S221  
 Bonniaud P S90, S153  
 Bonura GF S65, S219  
 Borahma M S99, S100, S112, S201, S204, S206, S217, S231, S234  
 Borca F S135  
 Bordalo Ferreira F S11, S160  
 Borges-Canha M S158  
 Borkar M S64  
 Bosch L S180  
 Boschetto R S91  
 Boskoski I S13, S20, S21, S85, S144, S214  
 Bossa F S153  
 Bossard C S15  
 Bota S S210, S223, S229, S230, S245  
 Bote M S80  
 Botella M S13  
 Bouali MR S182  
 Bouali R S113  
 Bouchabou B S165, S170, S183, S188, S199, S228  
 Bougassas W S165, S170, S183, S188, S199, S228  
 Boughoula K S113  
 Bougouma A S258  
 Bouhadan S S254  
 Bouras E S44  
 Bourgaux JF S40  
 Bourke M S34  
 Bourou MZ S12  
 Bousselob A S6, S56, S203  
 Boustière C S16  
 Bouwense SA S5  
 Bove V S20, S21, S80, S144  
 Bowman N S10  
 Boxhoorn L S5  
 BP Mohan S71  
 Bradai S S115, S116, S118, S146, S148, S149, S150, S196, S197, S198, S204, S208, S211  
 Braga Ribeiro I S55, S69  
 Braham A S82, S108, S155, S166, S182  
 Brahem A S110, S184  
 Brahmabhatt B S44  
 Brancaccio ML S41, S68, S237  
 Branche J S40, S221  
 Branco J S266  
 Branco JC S157  
 Brandão C S222  
 Brandao P S255  
 Braun G S43, S243, S265  
 Breekveldt ECH S17, S37  
 Breitling L S16, S215  
 Breslin N S101, S102, S133

Brito D S45, S119, S168, S197  
 Brito M S141  
 Brodersen JB S158  
 Broglia F S203  
 Bronswijk M S67, S93, S214, S257  
 Brookman-Amisshah D S51  
 Brosens LA S118  
 Brosens LAA S14  
 Broughton R S139  
 Brozzi L S114  
 Brujats A S5  
 Brulé C S88  
 Brullet E S191, S244  
 Brunet E S186, S264  
 Bruno M S7, S29, S128, S205, S269  
 Bruno MJ S5, S26, S104  
 Brynskov J S227  
 BS Ungureanu S220  
 Bucalau A-M S176  
 Bucalau AM S65  
 Bucci C S62  
 Buckley D S206  
 Buckley M S128, S268  
 Buda A S185  
 Budimir I S191, S230, S265  
 Budimir jr I S265  
 Budnicka-Borkowicz A S92  
 Budzinskiy S S24, S207  
 Budzyń K S62  
 Bugajski M S18  
 Bugter O S104  
 Bujedo Sadornill G S54  
 Burattini O S96  
 Burciu C S48, S49  
 Burgos A S88  
 Burgos Santamaría D S5  
 Burgos-García A S90  
 Burra P S36  
 Burrelli Scotti G S85  
 Burtea ED S227  
 Busquets D S90, S257  
 Bustamante-Balén M S13, S21, S88, S90, S254  
 Busto Bea V S45, S46  
 Busto V S27, S48, S243, S260  
 Byrne MC S260  
 Byrne MF S10, S57, S256  
 Byrne S S260

**C**

Caballero A S238  
 Caballero N S54, S60, S123, S168, S169, S172, S238  
 Cable D S135  
 Caca K S102  
 Cadime AT S45, S52, S119, S168, S197  
 Cadoni S S7  
 Caetano AC S158  
 Caetano Oliveira R S156  
 Cai M S257  
 Caillol F S97, S201  
 Cairns A S225  
 Calafat M S123  
 Caldeira A S134, S187  
 Cali A S89  
 Calik B S105  
 Calinas F S112  
 Calita M S227  
 Calle J S92  
 Calleja JL S213  
 Calleja Panero JL S220, S226  
 Calm A S60  
 Calvet X S191  
 Calvo H S219  
 Camacho E S217  
 Camilleri S S194  
 Campanale M S174, S175

Campo R S191, S244  
 Camus M S15, S34  
 Canaran L S57, S256  
 Canard JM S34  
 Cancela E S52, S115  
 Candrljic B S248  
 Canena J S146, S147, S210, S212  
 Cañete F S60, S123, S168  
 Cañete Ruiz Á S5  
 Canfell K S36  
 Canha I S253  
 Cannatelli R S73, S185  
 Cannizzaro R S130  
 Cano V S211  
 Capela T S208  
 Capogreco A S6  
 Cappello A S79  
 Cappendijk VC S5  
 Caracostea A S232  
 Carballo-Folgoso L S144, S216  
 Cárdenas A S16, S48  
 Cardoso C S141  
 Cardoso M S142  
 Cardoso MJ S251  
 Cardoso R S52  
 Carlino G S20, S21, S144  
 Carlos Nahas S S178  
 Carneiro F S22  
 Caroline C S138  
 Carparelli S S153  
 Carrara S S6, S91, S92, S108, S176, S221  
 Carrascosa J S27, S39, S48  
 Carrier P S234  
 Carrilho Ribeiro L S28, S137, S189  
 Carroll A S102  
 Carvalho A S115  
 Carvalho AC S52  
 Carvalho B S180  
 Carvalho D S253  
 Carvalho e Branco J S142  
 Carvalho J S52, S179, S263, S264  
 Carvalho L S52  
 Carvalho Lourenço L S11, S157, S160, S210, S266  
 Carvalho R S160, S266  
 Casajoana-Badia A S244  
 Casals Urquiza G S5, S54  
 Casellas-Grau A S122  
 Casi M S243  
 Castanheira A S52  
 Castela J S106  
 Castellano F S205  
 Castillo-Iturra J S16  
 Castillo-López G S179  
 Castillo-Regalado E S16  
 Catache Mancini F S151  
 Catarella D S194  
 Catino F S51  
 Cattaneo P S91  
 Cauche N S86  
 Cavalcoli F S252  
 Cavestro GM S107  
 Cavilla R S161  
 Çavuş B S183  
 Cazacu IM S72, S220  
 Cazacu SM S226  
 Cecinato P S174, S175  
 Celada-Sendino M S144, S216  
 Cellier C S47, S238, S241  
 Cennamo V S25, S172  
 Cereatti F S20, S67, S79, S241  
 Cesaro P S37, S51  
 Çevik E S183  
 CH Choi S98  
 Chabrun E S34  
 Chacchi Cahuin R S142, S143, S145, S148  
 Chagas C S32, S52, S59, S92, S108, S120, S212

Chaimae A S214  
 Chálim Rebelo C S87, S117, S175, S232, S248  
 Chan S S39  
 Chandan S S71  
 Chansangrat J S151  
 Chantzinicolaou L S15  
 Chaoui I S45  
 Chapelle N S15  
 Chapman M S78  
 Chaput U S40  
 Chatzidakis A S12  
 Chauhan R S67  
 Chaussade S S34, S156, S190, S266  
 Chavan R S223  
 Chavarria C S45, S46, S94, S240  
 Chavarria Herbozo C S25, S26  
 Chavez K S16  
 Chavez-Rivera K S48  
 Chayama K S124, S127  
 Chbourk S S99  
 Chen S S253  
 Chen YI S46  
 Cheng S S46  
 Cherciu Harbiyeli IF S72, S227  
 Cheriyan D S13, S41, S103  
 Chetcuti Zammit S S7  
 Chevaux JB S15  
 Chiado A S189  
 Chiado C S189  
 Chiriak S S102, S265  
 Chiu P S39  
 Choi HS S64, S120, S149, S152, S159, S205  
 Chong L S200  
 Chowdhury A S239  
 Christodoulou D S125, S200  
 Christopher B S103  
 Chu P S160  
 Chun HJ S64, S120, S149, S152, S159, S205  
 Cianci N S134  
 Ciccarelli O S217  
 Çiftcibaş Örmeci A S183  
 Cifuentes C S23, S54, S198, S245, S259  
 Ciobanu A S194  
 Cipriano MA S156  
 Ciruolo M S128  
 CK Lee S98  
 Clayton L S163  
 Closset J S11  
 Cocomazzi F S153  
 Codazzi M S51  
 Coelho M S49, S61, S99, S141, S216  
 Coffin E S238, S241  
 Coimbra É S142  
 Cojocariu C S102, S265  
 Çolak Y S126  
 Colan Hernandez J S244  
 Colan-Hernández J S60, S87, S123, S168, S169, S172, S238  
 Coleman M S139, S161  
 Coletta S S96  
 Colombo E S143  
 Colombo M S41  
 Coluccio C S233  
 Concepcion Urteaga L S219  
 Conde B S59  
 Conlon C S139, S268  
 Consiglieri CF S87  
 Constantin A S72  
 Constantinescu CE S226  
 Conte E S41, S43, S172, S236  
 Copaescu C S72  
 Copetti M S153  
 Corcoran N S136  
 Córdoba H S16, S23, S48, S93, S147  
 Corens P S254  
 Coriat R S34, S84, S156, S190, S266

- Coron E S9, S50  
 Corre F S34  
 Correia C S135, S156, S170, S192, S251  
 Correia F S11, S142, S266  
 Correia J S179, S263, S264  
 Corsato Scomparin R S178  
 Cortegoso Valdivia P S7, S127, S194  
 Cortellezzi C S202  
 Cortés-Pérez H S90  
 Costa M S131, S169  
 Costa Martins B S178  
 Costa P S28, S137  
 Costa R S98, S158  
 Costa Santos I S49, S61, S216  
 Costa Santos V S87, S117, S175, S232, S248  
 Costamagna G S8, S20, S21, S60, S80, S85, S133, S144, S214  
 Cotrau R S190  
 Cotta J S92  
 Cotter J S7, S32, S52, S127, S129, S138, S145, S193, S208, S209  
 Coubeau L S217  
 Coupé V S180  
 Coupé VMH S36, S156  
 Coutinho J S189  
 Cowin K S135  
 Cravero F S29, S205  
 Cravo M S32, S174, S190  
 Cremers I S99, S141  
 Cremon C S267  
 Cremonese ED S57, S256  
 Crinò SF S12  
 Cristina M S102  
 Cristina S S254  
 Crockett SD S85  
 Crosnoi D S136, S196  
 Cuatrecasas M S23, S88, S224  
 Cubisino R S153  
 Cuciureanu T S102, S265  
 Cudmore J S161, S260  
 Cugia L S41, S237  
 Cullen G S207, S268  
 Cunha AL S106  
 Cunha I S169  
 Curatolo A S65, S219  
 Cúrdia Gonçalves T S7, S145, S208, S209, S257  
 Currais P S141  
 Curvers W S31  
 Curvers WL S5, S14, S30, S31  
 Cury Vieira MV S69  
 Cury Vieira Scatimburgo MV S55  
 C-W Chen S84  
 Cyraný J S82
- D**
- da Costa DW S26  
 da Costa J S76  
 da Costa-Seixas J S88  
 Daams F S93  
 Dabbeche R S81, S111  
 Dabizzi E S25, S172  
 Dąbkowski K S152  
 Dahan K S147  
 Dahan M S86, S234  
 Dahel Y S97, S201  
 Dahlqvist G S217  
 Dahmani W S82, S108, S110, S155, S166, S182, S184  
 Dai C S241  
 Dal Bello F S245  
 Dan F S190  
 Dan ML S18  
 Dancour A S18, S19  
 Dano H S147  
 Dantas E S49, S61, S99, S141, S216  
 Dao H S58  
 Dao L S58  
 Dao Viet H S257  
 Darisetty S S21, S87, S144  
 Darzi A S139, S161  
 David D S265  
 Davidov Y S63  
 Davydkina T S165, S180  
 Davydova S S178  
 De Angelis CG S29, S128, S205  
 de Benito Sanz M S25, S26  
 De Carvalho T S255  
 de Castro L S88  
 de Freitas Junior JR S19, S56  
 de Frutos D S5, S59, S80  
 De Frutos Rosa D S167  
 De Gottardi A S6  
 de Graaf W S104  
 De Higes MJ S110  
 De Higes Ruiz MJ S111  
 de Jonge L S36, S37  
 de Jonge PJ S31  
 de Jonge PJF S31, S104  
 de Jorge Turrion MA S5  
 de Klaver W S180  
 De la Corte L S59  
 de la Cruz R S96  
 De La Fuente Briongos E S5  
 De la Iglesia-García D S72, S216, S246  
 de la Serna Higuera C S25, S26, S94  
 de la Serna Higuera C S25, S26, S94  
 de la Serna-Higuera C S45, S46, S240  
 De Luca L S221  
 de Moura DTH S19, S46, S55, S56, S69, S124, S151, S252, S253  
 de Moura EGH S19, S46, S56, S124, S252  
 de Moura EGH S19, S46, S56, S124, S252  
 de Moura ETH S19, S56  
 De Nucci G S41, S68, S119, S143, S177, S219, S237  
 De Nucci G S41, S68, S119, S143, S177, S219, S237  
 de Oliveira CPMS S19  
 de Oliveira GHP S19, S124, S253  
 de Pretis G S100, S101, S107  
 de Pretis N S100, S101  
 De Riba-Soler B S147  
 de Ridder R S5  
 De Siena M S20, S21, S144  
 de Sousa Damião F S28, S137, S189  
 de Sousa Magalhães R S7, S138, S193, S208  
 de Souza GMV S19, S56  
 de Souza TF S19  
 de Wijckerslooth TR S26  
 de Wit M S180  
 De'an T S193  
 Deane C S102  
 Decker A S81  
 Dedane E S261  
 Deding U S96  
 Deepak S S39, S182  
 Deiana S S65, S219  
 Dejong CH S5  
 Dekker E S17, S34, S37, S77, S95, S156, S180  
 del Caño-Cerdan C S144, S216  
 Del Valle R S23, S24, S54, S71, S198, S245, S259  
 Delattre C S86  
 Delchambre A S86  
 Delgado Guillena PG S5  
 Delgado MS S80  
 Delgado-Guillena P S23, S147  
 Delire B S217  
 della Torre S S119, S177  
 del-Pozo-García A S90  
 De-María-Pallarés P S90  
 Demedts I S45, S61  
 Demetter P S176  
 Demir K S183  
 Demirli Atici S S105  
 Demirovic A S229  
 Denisova A S232  
 Denzer U S16, S215  
 Deprez P S212, S218  
 Deprez PH S147  
 Derhy S S241  
 Deriban G S12  
 Dertmann T S68  
 Desideri F S84  
 Désilets E S124  
 Deskur A S152  
 Desmet E S61  
 Despott EJ S142, S143, S145  
 Desrame J S237  
 Deviere J S11, S35, S65, S86, S101, S146, S176, S214  
 Devlin J S41, S232  
 Devlin S S268  
 Dewint P S254  
 Dewulf D S42  
 Dhar J S67, S233, S239  
 Dharamsi S S86  
 Dhillon A S60, S76, S137, S154  
 Dhir V S12, S40, S94, S234  
 Dhooge M S190  
 Di Bartolo CE S194  
 Di Leo A S153  
 Di Leo M S221  
 Di Matteo FM S60, S70  
 Di Mitri R S41, S43, S172, S236, S237  
 di Nuovo F S119  
 di Pietro M S118  
 Diamantopoulou G S125, S141  
 Diarra M S181  
 Dias Pereira A S106  
 Dias-Pereira A S52  
 Díaz-Canel O S90  
 Díaz-Tasende J S90  
 Dicko MY S181  
 Dieninyte E S118  
 Díez Redondo P S54  
 Díez-Redondo P S88  
 Dijkstra FA S32  
 Dilaghi E S63  
 Di-Marco N S260  
 Dimitroulopoulos D S240  
 Dimos G S125  
 Dinh S S58  
 Dinis-Ribeiro M S43  
 Dinis-Ribeiro M S9, S22, S32, S52, S106, S121, S158, S222  
 Dinko V S24  
 Djuranovic S S12  
 Dmitriy B S143  
 DN Reddy S223  
 Dobrev I S70  
 Dodmani M S232  
 Dogan S S116  
 Doherty G S268  
 Doherty GA S207  
 Doing S S139  
 Dollhopf M S242  
 Dolz-Abadía C S90  
 Dominguez-Muñoz JE S72, S216, S246  
 Donatelli G S16, S20, S67, S79, S241  
 Donelli F S91  
 Dong F S253  
 Dorra T S184  
 Doumbia K S181  
 Doviner V S18  
 Draganov P S34  
 Dray X S7  
 Drenth JP S26  
 Drug V S194

Duarte MA S87, S117, S175, S232, S248  
Duarte P S112  
Dubrovin O S246  
Duller C S140  
Dumitru A S250  
Dumont JL S20  
Dumoulin J S107  
Dunne C S114  
Duque M S251  
Durán-Bermejo R S90  
d'Urbano C S119, S143  
Duric T S160  
Dutch T S33  
Duvvur NR S57, S256  
Duvvuri A S95  
Dylenok A S123

## E

East JE S57, S256  
Eberspacher C S79  
Ebigo A S10, S14, S43, S109, S156, S171, S256, S265  
Edlinger D S210  
Eduardo Lera dos Santos M S55  
Eelbode T S58  
Egbarya M S63  
Egberts JH S42  
Eickhoff A S55, S173  
Eisendrath P S35, S101  
EJ Despott S148  
Ejaz H S34  
El kefi M S165  
El Mekkaoui A S105, S116, S206, S211, S219, S223, S261, S262  
El Mekkaoui A S105, S116, S206, S211, S219, S223, S261, S262  
El Menabawey T S78, S213  
El Mountassir M S206  
El Moussaoui S11  
El Moutaouakki N S261  
El Moutaouakkil N S211  
El Moutaoukil N S219, S223  
El Mqaddem O S262  
El Nakadi I S65  
El Ouardi W S231  
El-Abd O S117  
Elbasiuny A S152  
Elbayoumy MS S169  
Eldika S S29  
Elessawy H S225  
Elferink MAG S17  
Elias PA S84  
Elimeleh Y S213  
Elisa A S147  
Elkrinawi J S157, S166  
Elleuch N S82, S108, S110, S155, S166, S182, S184  
Elli L S7  
Elloumi H S79, S154, S155, S198, S200, S203  
Ellrichmann M S42, S74  
Elmekkaoui A S224, S262  
El-Mikkawy A S259  
Elmqaddem O S224, S262  
Elmunzer BJ S84  
Elshaarawy O S257  
Elsiddig M S114  
Elvas L S45, S119, S168, S197, S217  
EMichalopoulou E S240  
Encinas A S215  
Enderle M S56  
Ennaifer R S165, S170, S183, S188, S199, S228  
Erfan M S199  
Escapa M S130  
Escobar Ortiz J S171  
Escude L S130, S224  
Espinel J S202, S211

Espinós J S121, S168  
Esposito D S107  
Esposito G S63, S122  
Essadni Y S217  
Essler G S210, S223, S229, S230, S245  
Esteban Fernandez-Zarza C S195  
Esteban JM S8, S10  
Esteve M S121  
Estis-Deaton A S157, S166  
Estorninho J S73, S156, S170  
Estremera F S26, S27, S48, S109, S201, S260  
Etzion O S157, S166  
Eusebi LH S221  
Evagelopoulos K S150, S187  
Everett S S206  
Everson M S8, S10

## F

Fabbri C S41, S68, S89, S221, S233, S237  
Fabritius M S90  
Facciolo F S229  
Facciorusso A S12, S71, S171  
Fagan O S136  
Faia S S106  
Faiss S S14  
Faitini K S101, S107  
Falcão D S32  
Familiari P S80  
Fandong M S193  
Fanello G S79  
Fanti L S107  
Farahat A S225  
Faria F S43  
Fateen W S75  
Fatima Zahra A S214  
Fazerer F S147  
Federle C S51  
Fedorov A S178  
Fedorov E S207  
Fedorov ED S24  
Fedotov B S247  
Fedotov L S247  
Feisthammel J S195  
Feldager E S70, S241  
Feletto E S36  
Felix C S32, S59, S92, S108, S120, S141  
Feng Y S29  
Fennessy S S207  
Ferchichi I S154, S155  
Ferlitsch A S265  
Ferlitsch M S265  
Fernandes J S146, S212  
Fernández Esparrach G S5  
Férrandez F S109  
Fernandez FM S91, S92  
Fernandez M S11  
Fernandez Urien I S27, S39, S48  
Fernandez Velado E S171  
Fernández-Aranda F S122  
Fernández-Bañares F S121  
Fernández-Esparrach G S23, S90, S130, S147, S224  
Fernández-Simón A S16, S48, S93  
Fernández-Urien Sainz I S7  
Ferrández Á S88  
Ferrara EC S6, S91, S92, S176  
Ferre Aracil C S5  
Ferreira A S52, S98, S158, S174, S190, S267  
Ferreira AM S156  
Ferreira Cardoso M S11  
Ferreira D S215  
Ferreira JM S215  
Ferreira M S131, S156  
Ferreira S S106  
Ferrer C S121  
Ferrero E S244

Figa M S15, S78, S257  
Figueiredo Ferreira M S176  
Figueiredo P S73, S104, S131, S135, S156, S169, S192, S212, S251  
Figueirôa G S121  
Fijneman R S180  
Filmann N S55  
Fimiano F S205  
Finta A S129, S167, S176  
Fiocca F S79  
Fischer H S242  
Fitzgerald RC S118  
Fleischmann C S14, S156  
Fleishmann C S34  
Fleming C S195  
Flor de Lima M S87, S117, S141, S175, S232, S248  
Florez-Diez P S144, S216  
Fockens P S5, S26, S34, S77, S93  
Foncea C S190, S209  
Fontana A S153  
Forcella D S228, S229  
Forti E S41, S68, S237  
Foruny Olcina JR S110  
Fousekis F S125  
Foussekis F S200  
FP Zito S148  
Fragaki M S170, S189  
Frago Larramona S S54  
Fraile López M S5  
Fraile M S144, S216  
Francisco F S106  
François M S34  
Frank M S97  
Frazzoni L S9, S53, S89, S219, S221  
Frederiks CN S31  
Freire R S49, S99, S216  
Freitas C S28, S137  
Freitas Junior JR S253  
Freitas M S127, S129, S145, S209  
Frias Gomes C S174, S190, S267  
Fricke L S28  
Frisancho E S186, S244, S264  
FS Macaluso S194  
Fuccio L S9, S36, S53, S89, S100, S101, S171, S219, S221  
Fuentes Valenzuela E S26  
Fuentes-Valenzuela E S94, S240  
Fugazza A S6, S41, S68, S91, S92, S108, S176, S233, S237  
Fukuchi T S60  
Fumagalli C S168, S169  
Fumex F S39, S237  
Funari MP S46, S56, S124, S253  
Furnari M S36  
Fusaroli P S68, S71, S89  
Fusetto N S130

## G

Gabbani T S65, S219  
Gabriel S S24  
Gabriels RY S32, S73  
Gadour E S209  
Gago T S141  
Gaia S S29  
Galán M S122, S245  
Galdin-Ferreira M S23  
Gallina FT S229  
Gallo C S20, S21, S144  
Gallois C S47, S238  
Galtieri PA S6, S91, S92, S108, S176, S185  
Galvin Z S260  
Gamelas V S112, S253  
Gamil K S117  
Gandhi A S64, S69, S86  
Garcés-Duran R S23, S212, S218



- García Alonso FJ S45, S46  
 García Bolós A S197  
 García Campos M S13  
 García Casas M S220  
 García García de Paredes A S5  
 García-Iglesias P S186  
 García Rodríguez A S5  
 García-Sague B S186  
 García-Alonso FJ S88, S240  
 García-Bernardo O S216  
 García-Campos M S21  
 García-Contreras LF S128  
 García-Ibáñez ME S122  
 García-Iglesias P S191, S264  
 García-Menendez A S216  
 García-Rodríguez A S23, S54  
 García-Romero D S90  
 García-Sague B S264  
 García-Sumalla A S87, S245  
 Gargouri D S79, S115, S117, S154, S155, S184, S196, S198, S200, S203  
 Gariballa M S260  
 Garrido A S59  
 Garrido F S215  
 Garrido M S22, S44, S103  
 Garvey T S97  
 Gasmi M S243  
 Gaujoux S S38  
 Gavric A S44  
 Gawn A S258, S260  
 Gazzola A S172  
 Geeson J S135  
 Gejo A S144, S216  
 Gené Skrabec C S238  
 Genthner A S173  
 Gentile M S153  
 Geraghty J S41  
 Gérard R S34, S40, S221  
 Gerges C S68  
 Gesualdo M S29, S205  
 Geuzinge H S95  
 Geyl S S34, S86, S88, S234  
 Ghaly S S225  
 Ghandour B S242  
 Ghanem M S113  
 Gheonea DI S226  
 Gherzi S S25, S172  
 Ghidersa A S250  
 Ghiuchici AM S209  
 Ghodeif A S258, S260  
 Ghoneem E S132, S152, S231, S246  
 Ghosh S S73, S185  
 Ghribi M S170, S183, S188, S199, S228  
 Giannakopoulos A S204  
 Giannelis P S62  
 Gibiino G S85, S89  
 Gil FL S122  
 Gill JA S44  
 Gimeno-García AZ S54, S88  
 Ginès A S23, S130, S224  
 Ginestet C S234  
 Giordano A S130  
 Giotis I S53  
 Giovannini M S97, S201  
 Girleanu I S102, S265  
 Girotra M S29  
 Giuliani AP S153  
 Gizzi G S89  
 Gkaraganis D S15  
 Gkizas N S125  
 Gkolfakis P S12, S35, S101, S146, S171  
 Gkoutos G S73  
 Gladishev D S24  
 Glória L S190, S267  
 GM Saracco S128  
 Godbole S S166  
 Godik O S246  
 Goelder SK S43, S109  
 Goffette P S217  
 Goikoetxea-Rodero U S90  
 Golan T S19  
 Gölder SK S93, S243  
 Goldin E S18, S19  
 Gomes C S179, S263, S264  
 Gomes D S217  
 Gomez Alonso M S260  
 Gomez M S26, S48, S109, S201, S243  
 Gómez Outomuro A S5  
 Gomez V S44  
 Gomez-Pimpollo L S80  
 Gómez-Rodríguez R S224  
 Gonçalves R S52, S98, S158  
 Gonçalves-da-Cunha P S90  
 Gonzales-Soler Z S267  
 Gonzalez de la Higuera B S26  
 González González L S123  
 Gonzalez Haba Ruiz M S220, S226  
 Gonzalez JM S11, S16  
 Gonzalez J-M S243  
 González L S60, S169  
 González Lois C S167  
 Gonzalez-Canoniga A S19  
 Gonzalez-Gonzalez L S172  
 González-Haba M S213  
 González-Huix F S15, S78, S87  
 González-Huix Lladó F S213, S214  
 González-Santiago JM S88  
 González-Suárez B S130  
 Gordillo-Ábalos J S90  
 Gordon S S44  
 Gornals JB S18, S87, S122, S244, S245  
 Gorovaya I S189  
 Gorriz L S13  
 Götzberger M S242  
 Goud R S87  
 Gouda M S246  
 Goulet B S156  
 Gouveia C S141, S190  
 Graça Rodrigues C S210  
 Graca-Pakulska K S152  
 Gralén K S253  
 Gralnek I S140, S213  
 Grandval P S16, S40  
 Grassi E S202  
 Grau G S191  
 Gravito-Soares E S73, S104, S156, S169, S170  
 Gravito-Soares M S104, S156, S169, S170, S217  
 Graziano P S153  
 Grega T S95, S268  
 Gregório C S135  
 Greuter M S180  
 Greuter MJE S36, S156  
 Grimm IS S85  
 Grisan E S185  
 Grishina E S201  
 Grund KE S159  
 Guardiola-Arévalo A S224  
 Guarner E S257  
 Guarner-Argente C S87, S90  
 Guedes T S141  
 Guevarra TP S199  
 Guillena-Castañeda T S147  
 Guimarães Hourneaux de Moura E S69, S151  
 Guimarães Hourneaux de Moura E S55  
 Guindo H S181  
 Guingane NA S258  
 Guiramand J S97  
 Gulati S S34  
 Gulla A S38  
 Guoxin Z S193  
 Gupta P S67, S233, S239  
 Gupta R S166, S223  
 Gupta V S67, S233, S239  
 Gurudu S S84  
 Gurusamy K S112  
 Guseinova S S57  
 Gutierrez L S257
- H**
- Ha YW S120, S149  
 Haberzetscher F S238, S239  
 Hadithi M S5, S26  
 Hadjinicolaou A S97  
 Haefner M S8, S10  
 Haendchen Bento I S178  
 Haesaerts R S61  
 Hafeez S S209  
 Hag E S113  
 Haidry R S8, S10  
 Haji A S34  
 Hakim S S15  
 Hallensleben ND S26  
 Haller B S171  
 Hallit R S156, S190, S266  
 Halonen J S163, S192  
 Hamanaka J S60  
 Hammami A S82, S108, S110, S155, S166, S182, S184  
 Hamzaoui I S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S202, S204, S208, S211  
 Hamzaoui I S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S202, S204, S208, S211  
 Hanafy A S80, S126  
 Hanna N S131  
 Harbi R S108, S110, S117, S118, S184, S185, S186  
 Hardillo JA S104  
 Harel G S173  
 Harewood G S13  
 Harindranath S S226, S232  
 Harrison PM S232  
 Harsányi L S30, S233  
 Hart A S60  
 Hartery K S114  
 Hartleb M S82, S83  
 Hasan MK S84  
 Hassan C S6, S9, S34, S37, S50, S51, S53, S57, S60, S95, S171, S176, S181  
 Hassine A S82, S155, S166, S182  
 Hauser G S12, S248  
 Hausmann J S55  
 Haveman JW S32  
 Havre RF S241  
 Haycock A S76, S154, S161  
 Hayee B S251  
 Hayes T S132  
 Hazen WL S5  
 Hazewinkel Y S77, S156  
 He H S253  
 Healey C S139, S161  
 Heaton ND S232  
 Hebban S S200  
 Hegade VS S206  
 Hegelein A S81  
 Heindl M S195  
 Heise C S38  
 Heissat S S10  
 Helle K S129  
 Henkel ML S57, S256  
 Heredia ML S109  
 Hernández A S168, S169  
 Hernández L S179, S191, S244  
 Hernández M S59  
 Hernández Negrín D S54  
 Hernández Villalba L S83  
 Hernández-Conde M S88

- Hernández-Mondragón OV S128  
 Herner A S28, S171  
 Herrera-Servin MA S179  
 Herreros de Tejada A S5, S34, S80, S167  
 Herreros-de-Tejada A S59, S88, S90  
 Hervas N S39, S48, S243, S260  
 Hide M S127  
 Hilton A S29  
 Hinterberger A S265  
 Hirasawa K S60  
 Hirata S S127  
 Hirsch BS S124  
 Hlaing L S135  
 HM Engjom S26  
 Hmimass S S100  
 Hmu KLA S180  
 Hochberger J S177  
 Hoffmann J S42  
 Hoffmeister A S195  
 Hoibian S S97, S201  
 Højgaard Tølbøll T S162  
 Hollenbach M S38, S81, S195, S214, S257  
 Holler B S195  
 Holley E-M S93  
 Hombrados M S257  
 Hompes R S34  
 Hong SN S98  
 Honing J S118  
 Honkoop P S5  
 Horgan G S268  
 Horta D S142, S210  
 Horváth M S30, S233  
 Hossain E S9, S50, S251, S256  
 Hotta K S58  
 Houben MHMG S14, S30, S31  
 Houndonougbo ESY S258  
 Houwen BBSL S77, S156  
 Hrabac P S248  
 Hrabar D S229, S230  
 Hritz I S30, S233  
 Htun M S180  
 Huahong W S193  
 Huang J S253  
 Huberland F S86  
 Huberty V S146, S176  
 Huertas C S87, S257  
 Huggett MT S41, S47, S206, S225  
 Huiban L S102, S265  
 Hula H S99  
 Hummel V S234  
 Humphreys N S13  
 Humphries A S76, S137, S154  
 Huppertz J S238, S239  
 Hurley O'Dwyer R S136  
 Hussein M S8, S10, S255  
 Hustak R S11  
 Hyub S S257
- I**  
 Iacucci M S57, S73, S185, S256  
 Iaculli E S235  
 Ianiro G S36  
 Iannone A S34, S176  
 Ibañez Pinto A S195  
 Ibañez Zafón IA S54  
 Iborra I S60, S123, S168, S169, S172, S238  
 Ibrahim M S159, S220, S231, S259  
 Ichimasa K S34  
 Ichkanian Y S84  
 Ide E S151, S252  
 Iglesias-Canle J S216  
 Iglesias-Garcia J S72, S216, S246  
 Iio S S127  
 Ikematsu H S58  
 IM Cazacu S227  
 Imane B S214
- İmanov Z S183  
 Impellizzeri G S65, S219  
 Imperatore N S119  
 Inavolu P S166  
 Inderson A S24  
 Inoue H S110  
 Ioannou A S240  
 Iordache S S226  
 Iori A S101  
 Ippolito A S153  
 Irargorri N S36  
 Irtaza M S222, S232  
 Isidro R S106  
 Islam S S255  
 Ismail S S138, S139  
 Ismaili MZ S116, S219, S223  
 Ismaili Z S206, S211, S224, S261, S262  
 Itoh H S58  
 İV Şenkal S183  
 Ivan ET S227
- J**  
 Jabandziev P S248  
 Jackson L S132  
 Jacobs MA S52  
 Jacobs MAJM S77  
 Jacques J S34, S35, S39, S86, S88, S174, S234  
 Jaddoh AM S169  
 Jaekers J S93  
 Jagtap N S21, S87, S144, S166, S223  
 Jain R S86  
 James MW S41  
 Janjua F S103  
 Jankovic K S173  
 Januszewicz W S92  
 Januszewski K S62  
 Jardi-Cuadrado A S246  
 Jarkovsky J S82  
 Jaziri H S82, S108, S110, S155, S166, S182, S184  
 JC Silva S179, S263  
 Jebari y S234  
 Jeon YT S64, S120, S149, S159, S205  
 Jeffery L S73, S185  
 Jensen J S227  
 Jensen MD S158  
 Jeon HJ S64, S120, S149  
 Jesinghaus M S171  
 Jiang Y S253  
 Jianting C S193  
 Jianu D S190  
 Jimenez C S180  
 Jiménez M S211  
 Jimeno M S23  
 Jimeno-Ramiro M S147  
 Jiricka L S265  
 JJ Vila S27  
 Jlassi H S198  
 Jmaa A S82, S108, S110, S155, S166, S182, S184  
 João M S45, S104, S119, S168, S197  
 Joaquin Ortiz Mendieta P S151  
 Joo MK S152  
 Jørgensen HL S70  
 Joshi D S232  
 Jovani M S242  
 Jovanovic I S12, S173  
 JP Ratone S97  
 JS Byeon S98  
 Jung C S81, S102, S177  
 Junquera F S191, S244  
 Juroš Z S230  
 Jusue V S27, S39, S48
- K**  
 Kaalby L S96  
 Kaar A S128  
 Kabir M S137
- Kader R S8, S10, S255  
 Kaess M S220  
 Kaffes A S39  
 Kaibel Axpe I S226  
 Kajor M S62  
 Kalafateli M S125, S141  
 Kalapala R S21, S57, S87, S144, S166, S223, S256  
 Kale A S222, S226, S232  
 Kaltsa G S181  
 Kamal A S84  
 Kamal MM S84  
 Kamaoui I S211  
 Kamaté B S181  
 Kamberoglou D S181  
 Kaminskaya Y S247, S248  
 Kaminski M S34, S92  
 Kaminski MF S18, S77  
 Kaminskis A S191  
 Kamisnki MF S15  
 Kamperoglou D S132  
 Kanakagiri H S21, S87, S144  
 Kangalli S S173  
 Kanishev I S109  
 Kapizioni C S62  
 Kapral C S140  
 Karagyozov P S70, S218  
 Karamanolis G S132, S181  
 Karasev I S165, S180  
 Karaskova E S248  
 Karatzas P S132, S181  
 Karaympudi A S87  
 Karim S S216  
 Karlas T S195  
 Karleskind O S221  
 Karlis G S261, S263  
 Karmiris K S189  
 Karrenbeld A S73  
 Karsenti D S34  
 Karstensen JG S70, S241  
 Kartheuser A S147  
 Kashin S S23, S57, S63, S104, S121, S123, S254  
 Kassir Y S188  
 Kataev V S42  
 Katakwar A S21  
 Katilé D S181  
 Katsinelos D S240  
 Kats-Ugurlu G S32  
 Katzakis C S15  
 Kavuri SB S84  
 Kawachi H S34  
 Kaxtsidou M S204  
 Kaya D S183  
 Kaymakoğlu S S183  
 Kazina E S254  
 Kazuya S S110  
 Keane MG S242  
 Keczer B S30, S233  
 Keeratibharat N S151  
 Keereweer S S104  
 Kefi M S170, S188, S199, S228  
 Kelleher B S161, S260  
 Kemper G S84  
 Kenny E S132  
 Keohane J S138, S139  
 Kerr H S161, S260, S268  
 Keuchel M S7  
 Keulemans YC S26  
 Keum B S64, S120, S149, S152, S159, S205  
 Kevans D S114  
 KEZOULA D S6  
 Khachatryan S S126, S133  
 Khalatyan A S126, S133  
 Khamaysi I S113  
 Khanchel F S117  
 Khanna A S134

- Khannoussi W S105, S116, S206, S211, S219, S223, S224, S261, S262  
 Kharasse G S223  
 Kharrasse G S105, S116, S206, S211, S219, S224, S261, S262  
 Khashab M S85, S108  
 Khashab MA S84, S242  
 Khon E S38, S201  
 Khoury T S98  
 Khryashchev V S57, S254  
 Khsiba A S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S202, S204, S208, S211  
 Khsiba A S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S202, S204, S208, S211  
 Khvorova I S123  
 Kievit W S26  
 Kim CD S120  
 Kim ES S64, S120, S149, S152, S159, S205  
 Kim HB S152  
 Kim S S120  
 Kim SH S64, S120, S149, S152  
 Kiosov A S17, S103  
 Kiryukhin A S189  
 Kitadai Y S124  
 Kivelou E S204  
 Kjeldsen J S158  
 Klare P S250  
 Kleemann T S102  
 Kliegis L S50  
 Klimov A S178  
 Klinten Ockert L S136, S270  
 Knoop R S81  
 Kobaek-Larsen M S96  
 Koch A S158  
 Koch AD S14, S30, S31, S104  
 Koch K S159  
 Koch S S15, S40  
 Kochhar R S19, S67, S233, S239  
 Koens L S77  
 Kok B S75  
 Kolomoiets I S246  
 Komeda Y S53  
 Konaté A S181  
 Kondé A S181  
 Konge L S158, S227  
 Kongkam P S29, S39  
 Konstantakis C S125, S141  
 Kooyker A S95  
 Kopelman Y S63, S98, S178  
 Korolev M S247, S259  
 Kotachi T S124  
 Koukias N S142, S143, S148  
 Koulaouzidis A S7, S127, S194  
 Koureta E S181  
 Kouril J S268  
 Kourkoulis P S62  
 Koutoufaris G S62  
 Kouw E S5  
 Koziej M S62, S83  
 Kozłowska-Petriczko K S25, S83, S242  
 Krackhardt AM S107  
 Krajciová J S11  
 Kralj D S229  
 Kravari Z S211  
 Kraynova E S23, S63, S104, S121, S123  
 Krishna S S29  
 Krishnamoorthy R S165  
 Kryger Rindorf D S136, S270  
 Ksiao M S82, S108, S110, S155, S166, S182, S184  
 Kudo SE S58  
 Kudo T S58  
 Kuellmer A S102  
 Kuhlmann K S33  
 Kuiken SD S5  
 Kuipers E S180, S250  
 Kumar H S239  
 Kumar JK S223  
 Kumar-M P S67  
 Kunda R S39  
 Kunovsky L S248  
 Kurek K S83  
 Kurjak M S250  
 Kurushkina N S38, S43, S107, S109, S123, S201  
 Kutilek M S229  
 Küttner-Magalhães R S44, S52, S103, S158, S175, S215  
 Kuvaev R S23, S57, S63, S104, S121  
 Kwakman J S269  
 Kwok K S84  
 Kypraios D S240
- L**
- La Cava R S188  
 La Marca M S172  
 Laabidi S S164, S170, S182, S183, S188, S199, S202, S228  
 Laage G S57, S256  
 Labarile N S96, S185, S266  
 Labianca O S97, S187, S208  
 Lacković A S12  
 Lagdali N S100, S201, S204, S206, S217, S231, S234  
 Lage J S52  
 Lahiff C S161, S260, S268  
 Lahmer T S171  
 Lahner E S63  
 Lajin M S93, S94, S123, S126  
 Lakhtakia S S166, S223  
 Laleman W S67, S93  
 Lam H S58  
 Lamas S S144, S216  
 Lambin T S40, S90, S221  
 Lamonaca L S185, S221  
 Lamouri C S125, S200  
 Lanas Gimeno A S195  
 Landi R S80  
 Landi S S25, S172  
 Lansdorp-Vogelaar I S17, S36, S37, S95  
 Laoudi E S132, S181  
 Lapenta R S177, S228  
 Lapina A S191  
 Laquière AE S16  
 Laranjo A S141  
 Larghi A S39, S93, S119  
 Lariño-Noia J S72, S216, S246  
 Larocca A S172  
 Larsen S S136, S270  
 Laterza L S20, S21, S144  
 Lau J S39  
 Laursen CB S158  
 Laursen SB S158  
 Lavaud G S10  
 Law R S84  
 Lazaridis N S142, S143, S145, S148  
 Le H S58  
 Le Ngoc Hoa N S257  
 Le Rhun M S50  
 Leal C S32, S141  
 Leal T S98, S158  
 Leal-Lopez S S72  
 Lebedev A S57  
 Leblanc S S29, S190, S237  
 Ledebor M S5  
 Lee B S84  
 Lee BJ S152  
 Lee HS S64, S120, S149, S159, S205  
 Lee JM S64, S120, S149, S159, S205  
 Lee KW S64, S120, S149, S159, S205  
 Lee PS S7  
 Leeds JS S41  
 Leenhardt R S7  
 Lefa F S55  
 Legros R S39, S86, S88, S234  
 Leibold T S56  
 Leifeld L S177  
 Leite M S147  
 Lemmers A S11, S35, S65, S101, S146, S176  
 Lemos Garcia J S106  
 Lennon AM S29  
 Lenz L S178  
 Leonard D S147  
 Leone N S41, S68  
 Leoni P S203  
 Lepetit H S86, S88, S234  
 Lepilliez V S34  
 Lerner P S16, S215  
 Lerotic I S229  
 Leteurtre E S221  
 Levenick JM S85  
 Leventi E S173  
 Levy-Ríos I S147  
 Lew JB S36  
 Leyden J S161, S260, S268  
 Lherault G S156  
 Liapis I S125  
 Libânio D S22, S43, S52, S106, S121, S141, S158  
 Licata M S267  
 Licinio R S266  
 Lim B S84  
 Limschou AC S227  
 Lin J S253  
 Lin N S180  
 Lin SS S180  
 Lin W-R S84  
 Lindo Ricce M S224  
 Lindsey F S114  
 Lines D S8, S10  
 Linhares M S134, S187, S188  
 Linzenbold W S56  
 Lipman G S8  
 Lira A S191, S244  
 Lisotti A S16, S71, S237  
 Livovsky DM S19  
 Llach J S16, S23, S93, S130  
 Llargues-Rocabruna E S147  
 Llauradó-Paco S S244  
 Llibre-Nieto G S147  
 Llovet L S264  
 Lo Mastro M S43, S172, S236  
 Lojo S S72  
 Lollo G S6  
 Lombardi G S148  
 Lopes L S146, S147, S212  
 Lopes Ponte Neto F S151  
 Lopez AC S23, S54  
 López M S59  
 López P S191  
 López R S168, S169  
 Lopez S S27, S260  
 López-Cerón M S88  
 López-Cerón Pinilla M S83  
 Lopez-Mourelle A S144, S216  
 López-Vicente J S83, S88, S179  
 Loras C S27, S87, S121, S122  
 Lorenzo D S11, S101, S146  
 Lorenzo-Zúñiga V S254  
 Louis H S101, S146  
 Lourida T S141  
 Loustaud-Ratti V S234  
 Lovasz BD S129, S167, S176  
 Lovat L S8, S10, S255  
 Lovat LB S58  
 Lovera M S41, S68  
 Lovero R S266  
 Lovet LL S186  
 Lozano A S267

Luba D S84  
Luca M S194  
Lucarini M S174, S175  
Lumachi V S203  
Lumbreras-Cabrera M S179  
Luna D S60  
Luong T S142  
Lupusoru R S190  
Luraghi M S203  
Lutakov I S194  
Luz GdO S124

## M

Mac Mathuna P S260  
MacCarthy F S114  
Macchiarelli R S41, S68, S237  
Macchini F S235  
Macedo C S131, S135, S156, S169, S170, S217  
Macedo G S114, S188  
Macedo Silva V S127, S129, S145, S209  
Machado I S34  
Machicado J S29  
Machlab S S191, S244  
Macías E S243  
MacMathuna P S161, S268  
Madacsy L S129, S167, S176  
Madbouly M S220  
Madeira J S156  
Madhioub M S146  
Maeda N S9, S256  
Maeda S S60  
Maes F S58  
Magarotto A S252  
Magi L S122  
Magno Pereira V S141  
Mahamid M S98  
Maher MM S188  
Mahmoudi M S112, S115, S116, S118, S146, S148, S149, S150, S164, S196, S197, S198, S202, S204, S208, S211  
Mahnken A S16  
Maia L S175  
Maida M S13, S36, S41, S68, S100, S101, S107, S194, S237, S267  
Maieron A S140, S229, S255  
Maiga A S181  
Maiga MY S181  
Maillet D S124  
Maisterra S S18, S87, S244, S245  
Maisterra-Santos S S244  
Maiteeg H S125  
Majcher B S265  
Majek O S95, S268  
Makoto Sakai C S151  
Małecká-Panas E S83  
Maletta F S29  
Malikhova O S165, S180  
Mallé O S181  
Maluf-Filho F S178  
Maly M S145  
Mamedov S S247  
Mancini A S252  
Mancini FC S124, S252  
Mandair D S142  
Mandal A S134  
Mandarino FV S107  
Mandelli ED S119, S143, S177  
Manes G S119, S143, S177, S219  
Manganaro M S194  
Mangiavillano B S41, S68, S185, S221, S237  
Mangiola F S80  
Mangold T S102  
Mangualde J S49, S61, S216  
Manière T S124  
Manner H S104  
Manno M S41, S65, S68, S219

Manola ME S53  
Manoloudaki K S62  
Manthopoulou E S240  
Manukyan K S126, S133  
Mão-de-Ferro S S106  
Marakhouki K S247, S248  
Marakis I S240  
Marandino F S228  
Marasco G S13, S267  
Marchesa P S43  
Marchi S S36  
Marcos Carrasco N S110, S111  
Marcos Martin ÁF S5  
Marcos Prieto HM S5  
Marcos-Pinto R S22, S158  
Marx M S97  
Mare R S48, S49  
Marek T S83  
Margalit-Yehuda R S7  
Mari A S63, S98  
María G S254  
Marica D S205  
Marin I S60, S123, S168, S169, S172, S238  
Marín-Dueñas I S267  
Marín-Gabriel JC S90  
Marinho C S145  
Mariños H S219  
Mariotto E S202  
Marjai T S30, S233  
Marlicz W S127, S194  
Marmo C S8, S133  
Marmo R S61, S62  
Mármol C S76  
Maroto-Martín C S240  
Marques A S28, S137  
Marques Bernardo W S55, S69, S151  
Marques de Sá I S32, S209, S215  
Marques Sá I S106  
Marques-de-Sá I S103, S175  
Marra A S153  
Marshall S S139  
Marsot J S237  
Martin A S7  
Martin H S24, S78, S213  
Martin Lopez J S226  
Martín-Álvarez V S45, S46  
Martinek J S11  
Martinez Barco A S167  
Martinez-Bauer E S186, S264  
Martínez de Acitores D S26, S27, S201  
Martínez Tormo V S197  
Martínez-Alcalá Á S215  
Martínez-Alcalá García C S195  
Martínez-Bauer E S88, S191, S244  
Martínez-Camacho C S128  
Martínez-Moreno B S45, S46  
Martino A S148  
Martins A S11, S142, S157, S160, S210, S266  
Martins D S52  
Martins Figueiredo L S142, S210  
Martins Pinto da Costa A S226  
Marucci C S266  
Maruschke L S102  
Masaki T S34  
Mascagni D S79  
Mascarenhas Saraiva M S114  
Masci E S252  
Maselli R S6, S34, S91, S92, S101, S108, S176, S185  
Massari Takamatsu Sagae V S55  
Massaro Takamatsu Sagae V S151  
Mast H S104  
Mata A S168  
Matallana C S238  
Matallanos P S80  
Mata-Quintero CJ S179

Mateescu B S205  
Mateescu RB S82, S214  
Mateos Muñoz B S5  
Materacki L S136, S142  
Mathew A S84  
Matsuda T S58  
Matsumoto M S84  
Matsuo Y S127  
Matteo MV S20, S21, S144  
Matthes K S162  
Matthews T S133  
Matuguma SE S124  
Maurano A S97, S187, S208  
Mauriello A S205  
Mavrogenis G S53, S134  
Mayr U S28, S171  
McCarty TR S46, S253  
McDermott E S97  
McDonald C S41  
McKearney E S102  
McKenna-Barry M S114  
McKiernan S S114  
McNamara D S7, S8, S101, S102, S130, S131, S133  
Mechie N S81  
Medhioub M S115, S116, S118, S148, S149, S150, S164, S196, S197, S202, S204, S208, S211  
MEDKOUR MT S6  
Medlej C S50  
Mehrez Gad A S152  
Meijer G S180  
Meijer SL S14  
Mejuto R S216, S246  
Melcarne L S186, S264  
Mellos A S62  
Memon SF S166, S223  
Menchise A S148  
Mende M S14  
Mendel R S10, S256  
Mendes S S217  
Mendez JC S24, S71  
Mendieta PJO S46  
Mendo R S59, S92, S108, S120  
Meneghetti A S12  
Mengotto V S91  
Menon K S232  
Mensi A S81, S111  
Mercadante E S229  
Merkulova A S123, S254  
Merla A S153  
Merwe Scd S39  
Messaoudi N S39  
Messmann H S10, S14, S34, S43, S93, S109, S156, S171, S243, S256, S265  
Metawea M S149  
Metivier-Cesbron E S15  
Meunier E S97  
Michalopoulos G S62  
Michelena J S168  
Miguel I S15, S78  
Miguel Salas I S213, S214  
Miheller P S30, S233  
Mileti A S153  
Miletic D S248  
Milluzzo SM S6, S37, S51  
Miltiadou K S12  
Miñana JM S15, S78  
Minelli Grazioli L S37, S51  
Ministro P S52  
Miquel O S257  
Miranda Garcia P S171  
Miranda J S136  
Miranda-García P S90  
Misawa M S58  
Missotten R S61  
Mitova V S70



- Mitrovits N S234  
Mitselos I S125, S200  
Miutescu B S48, S49, S190, S209  
Miyajima NT S252  
MM Azzouz S197  
Moati E S241  
Mocciaro F S43, S172, S236  
Modonesi C S91  
Moen S S250  
Moga T S48, S49, S190, S209  
Mogler C S107  
Mohamed A S138  
Mohamed Abutaleb H S132  
Mohamed B S214  
Mohamed F S257  
Mohamed G S182  
Monahan K S76, S154  
Monica F S143  
Monino L S212, S217, S218  
Monserez DA S104  
Monsurate R S57, S256  
Montasser A S220  
Monterio P S22, S52  
Mony S S242  
Moons LMG S34  
Moorghen M S76  
Mora AM S215  
Morais R S141  
Morales-Alvarado V S147  
Morão B S174, S190, S267  
Moreels T S212, S217, S218  
Moreira M S146, S147, S212  
Moreira MJ S7, S127, S129, S138, S193  
Moreno de Vega V S60, S123, S238  
Moreno Santabárbara P S238  
Moreno V S168, S169, S172  
Moreno-Sánchez D S179  
Morganti D S143  
Mori K S58  
Mori Y S58  
Morisco F S36  
Morreale GC S36, S194, S267  
Morrison J S138, S139  
Möschler O S81  
Moschos I S150, S187  
Moschovis D S53  
Mosnier JF S15  
Mostafavi N S34  
Mothes B S159  
Mouelhi L S81, S111  
Mountney P S8, S10, S255  
Moura DB S87, S117, S175, S232, S248  
Moura EGH S253  
Moura M S28, S137  
Mousavere I S200  
Moutzoukis M S125, S200  
Moyer MT S85  
Mpitouli A S53, S170, S189  
Mrabet S S117, S118, S185, S186  
MS Ismail S101  
Muehlenberg K S51  
Muhammad Saeed S S116  
Muhammad Siqqique Z S116  
Muktesh G S19, S67, S233, S239  
Mulcahy H S268  
Mulcahy HE S207  
Muller TL S196  
Muñoz Gonzalez R S171  
Murcio-Pérez E S128  
Muriel A S5  
Murino A S142, S143, S145, S148  
Murphy A S136  
Muscatello N S12  
Musharaf M S209  
Muslow J S161  
Musquer N S50
- Mussetto A S7, S130  
Mwebe H S112  
Myint WPP S180  
MZ Ismaili S105
- N**
- Nabi Z S87, S140, S166, S223  
Nadesalingam V S97  
Nagengast WB S14, S30, S31, S32, S73  
Nagl S S43, S93, S109, S171  
Nagtegaal I S33, S77, S95  
Nagtegaal ID S17, S37  
Najera Muñoz R S25  
Nájera-Muñoz R S240  
Nakhli A S79, S116, S146, S198, S200, S203, S208  
Nandeesh H S39, S182  
Napier D S142  
Napoleon B S16, S29, S39, S237  
Narayan N S58  
Nardone OM S13, S73, S185  
Narra Figueiredo P S169, S170, S217  
Nascimento C S32, S174, S190, S267  
Nasiri M S224, S262  
Nastasa R S265  
Nawal L S214  
Nayar M S41  
ND Pilonis S15  
Nedoluzhko I S38, S43, S107, S109, S123, S201  
Negreanu L S250  
Nemeth A S7  
Nemoto T S58  
Neto FLP S46  
Neu B S250  
Neuhaus H S65, S68  
Neuhaus L S43  
Neumann H S50  
Neves J S212  
NG E S39  
NG K S39  
Ngamruengphong S S44  
Ngo O S95, S268  
Nguyen B S58  
Nguyen H S58  
Nguyen T S58  
Ni N S180  
Nicolaou P S170  
Nielsen AB S158  
Nieto L S72  
Nieto-Jara A S144, S216  
Nieuwenhuijs VB S5  
Nieuwenhuis EA S14, S30, S31  
Nikfal S S57, S256  
Nikkessen S S104  
Nikolaou P S189  
Nikolaus S S74  
Nikolaychuk T S89  
Nikolić M S191, S265  
Ninomiya Y S124  
Nogales O S54, S88  
Nogales-Rincón Ó S90  
Nogueira F S189  
Nojima T S127  
Norlin JM S253  
Noronha Ferreira C S28, S137, S189  
Nouraei R S135  
Novovic S S70, S241  
Nunes N S87, S117, S175, S232, S248  
Núñez Esteban M S5  
Nwaezeigwe M S128
- O**
- Obide F S125  
Occhipinti V S61  
O'Connor A S101, S102, S133  
Oczella L S167, S176
- O'Donnell S S101, S102  
O'Donovan M S118  
O'Dowd G S196  
Offerhaus J S14  
Ofosu A S71  
Ogloblin A S247, S259  
O'Grady J S128, S268  
O'Hara F S8, S101, S130, S131  
Ohtsuka K S58  
Oka S S124, S127  
Okasha H S231, S246  
Oleas R S23, S24, S54, S66, S71, S198, S245, S259  
Oliva G S148  
Olivari N S37, S51  
Olivas Alberch I S16  
Olivas I S224  
Oliveira A S99  
Oliveira AM S11, S157  
Oliveira AP S61, S141  
Oliveras B S257  
Olle G S129  
Oltean A S194  
O'Mahony A S195  
Omella I S59, S80  
Omurca F S116  
On W S41, S47, S206, S225  
O'Neill C S108  
O'Neill C S59, S92, S120, S212  
O'Neill C S59, S92, S120, S212  
O'Neill J S128  
O'Neill RS S206  
Oo TH S180  
Oppong K S41  
Orben F S28  
Orfanos S S261, S263  
Orlandini B S20, S21, S144, S214  
Orlando D S177, S228  
Ortigão R S43, S106, S121, S209  
Ortiz Mendieta PJ S69  
O'Shaughnessy K S132  
Ostrowski B S62, S83  
O'Sullivan D S13  
O'Toole A S13  
Ott R S250  
Ottaviani L S65, S219  
Ouakaa A S79, S115, S154, S155, S196, S198, S200, S203  
Oualgouh M S219  
Ouardi wE1 S204  
Ouazzani S S11, S35, S243  
Oustani M S105, S116
- P**
- Pace F S235  
Pachofszky T S234  
Paduano D S185, S221  
Pagano G S5  
Pagkratis S S211  
Paikos A S150, S187  
Paikos D S150, S187  
Palazzo M S40  
Palcevski G S248  
Palermo S S266  
Pallio S S194  
Palm C S10, S256  
Palma R S28, S137  
Palmela C S190, S267  
Pamplona J S257  
Panaccione R S57, S256  
Panarese A S96, S266  
Pannala R S29  
Pantaleón Sánchez MA S54  
Pantelakis E S204  
Panzuto F S122  
Paolillo R S153

Papa S S251  
 Papadaki K S211, S212  
 Papanikolaou I S12  
 Papanikolaou IS S171  
 Papanikolaou M S196  
 Papantoniou K S125  
 Papastergiou V S204  
 Papatheodoridis G S132, S181  
 Papaxoinis K S132, S181  
 Papparella G S21  
 Papparella LG S85  
 Para-Blanco A S9  
 Paranandi B S41, S47, S206, S225  
 Paraskeva K S204  
 Pardo A S87  
 Pardo L S257  
 Pardo-Grau L S87  
 Parejo Carbonell S S5, S111  
 Parejo S S110  
 Parejo-Carbonell S S90  
 Parente P S153  
 Parihar V S136, S196  
 Parisinos C S78  
 Park JJ S152  
 Parma Caputo LF S216  
 Parravicini M S202  
 Parsa N S57, S256  
 Paspatis G S53, S170, S189  
 Pastorelli L S13  
 Patchett S S13, S103  
 Patel A S232  
 Patel HK S108  
 Patel S S78  
 Patenotte A S35  
 Patra BR S222  
 Pavić T S191, S229, S230  
 Pavlov I S107  
 Pavlov P S189  
 Pawar B S64  
 Pawlak E S18  
 Pawlak K S83, S257  
 Pawlak KM S25, S242  
 Paz N S87, S117, S175, S232, S248  
 PD Siersema S68  
 Pecere S S85  
 Pech O S51, S220  
 Peck-Radosavljevic M S210, S223, S229, S230, S245  
 Pecl J S248  
 Pedregal P S191, S244  
 Pedroto I S22, S32, S44, S52, S103, S175, S215  
 Peixoto C S103  
 Pekarek B S34  
 Pellegatta G S6, S91, S92, S108, S176  
 Pellisé M S77, S84, S88, S171  
 Penagini R S7  
 Peñas B S88, S110  
 Peñas García B S5, S111  
 Peñas-García B S90  
 Pennazio M S127, S128, S130, S194  
 Penz D S265  
 Perdigoto D S169, S217  
 Pereira B S43  
 Pereira Correia F S157, S160  
 Pereira E S134, S187  
 Pereira F S134, S141, S187  
 Pereira Funari M S151  
 Pereira Guedes T S175, S215  
 Pereira JR S87, S117, S175, S232, S248  
 Pereira S S29  
 Pérez Berbegal R S54  
 Pérez Corte D S5  
 Pérez D S90  
 Pérez Oltra A S54  
 Pérez R S211  
 Pérez Riveras P S5  
 Perez-Cuadrado Robles E S47, S147, S241  
 Perez-Cuadrado Rpbles E S238  
 Pérez-Cuadrado-Robles E S7  
 Perez-Miranda M S25, S26, S45, S46, S94, S240  
 Peries L S257  
 Perk LE S5  
 Perpinyà J S257  
 Perri F S153  
 Perri V S80  
 Perrod G S7, S47, S50, S238, S241  
 Persyn D S42  
 Pesatori EV S37, S51  
 Pesenti C S97, S201  
 Pestana I S187  
 Peters FTM S31, S73  
 Peterse EFP S36  
 Petriczko J S25, S242  
 Petrone MC S41  
 Petrou A S125  
 Petruziello L S85, S89  
 Peveling-Oberhag J S56  
 Pezzoli A S130  
 Pezzoli I S235  
 Pham KC-D S241  
 Pham KDC S26  
 Phan H S135  
 Phillip V S28, S171  
 Phillips N S216  
 Phillpotts S S75, S78  
 Piazzini Albani A S235  
 Piazzolla M S153  
 Picascia D S119  
 Picciarelli S S51, S130  
 Pierconti F S228, S229  
 Piessevaux H S212, S217, S218  
 Pijoan Comas E S213, S214  
 Pijoan E S15, S78  
 Pilati S S218, S228  
 Pilonis N S18  
 Plm J S98  
 Pimentel R S156  
 Pimentel-Nunes P S22, S43, S52, S106, S121, S158, S209  
 Pine J S41  
 Pinedo E S202, S211  
 Pinho J S52  
 Pinho R S52, S179, S263, S264  
 Pinto C S106, S222  
 Pinto J S134, S187  
 Pioche M S10, S15, S34, S35, S40, S88, S90, S153, S174  
 Pires F S52, S115, S141  
 Pirici D S226  
 Piscoya A S257  
 Pisera M S18  
 Pita I S106, S209, S222  
 Pitanga-Lukashok H S23, S24, S54, S66, S71, S198, S245, S259  
 Pitarch García J S197  
 Plana Campos L S197  
 Plastiras A S240  
 Pleskow D S84  
 Poen AC S26  
 Pohl H S44, S84, S85  
 Poizat F S97  
 Pojoga C S222  
 Poley JW S5  
 Pollino V S41, S68, S237  
 Pommier C S193  
 Ponchon T S40, S88, S90, S153, S193  
 Ponferrada Á S215  
 Pons F S213  
 Pons-Beltrán V S13, S21  
 Ponte A S264  
 Ponte Neto FL S252  
 Pontecorvi V S20, S21, S144  
 Popescu A S190, S209  
 Popescu C S72, S227  
 Portela F S156  
 Poszler A S171  
 Potts J S75, S213  
 Pouw RE S14, S30, S31  
 Povedano M S244  
 Prachalias A S232  
 Prat F S190  
 Pregolato P S91  
 Prieto Aparicio J S171  
 Prijic R S257  
 Prinz F S265  
 Privat J S15, S40  
 Probst A S14, S43, S171  
 Prouvost V S15, S50  
 Psistakis A S170  
 Puga-Tejada M S23, S24, S54, S66, S71, S198, S245, S259  
 Puig del Castillo I S54  
 Puig I S76, S88  
 Puig M S60, S123, S172, S238  
 Puig-Divi V S191, S244  
 Pujari R S69  
 Purchiaroni F S133  
 Purnak T S116  
 Puscasu CI S205  
 Püspök A S140, S234  
 Puyal J S255  
 Puyal JGB S10  
 Puyal JG-B S8  
 Pyatakova A S43  
  
**Q**  
 Quadarella A S51  
 Queirós P S212  
 Quinlivan L S128  
 Quiroga-Castañeira A S246  
 Quispel R S5  
  
**R**  
 Radaelli F S6  
 Rafael MA S142, S210, S266  
 Ragab K S231, S246  
 Ragot E S47, S238  
 Rahman I S135  
 Rahmi G S15, S34, S47, S50, S238, S241  
 Raimondo M S44  
 Raina H S148, S231  
 Rainer J S65, S219  
 Rais K S219, S223  
 Raiss K S261  
 Raiter A S25, S242  
 Raju G S84  
 Ramada J S147  
 Ramai D S71  
 Ramakers C S17, S95  
 Ramakers CRB S37  
 Ramchandani M S140, S166, S223  
 Ramirez F S84  
 Ramos D S134, S187  
 Ramos G S253  
 Ramos L S267  
 Ramos-Zabala F S90  
 Ramsoekhd D S77  
 Rana N S58  
 Rao GV S166  
 Rao PK S222  
 Raptis L S125  
 Rasool J S103  
 Ratiu I S48, S49, S190, S209  
 Ratkajec V S191, S230, S265  
 Ratković A S191, S230, S265  
 Ratone JP S34, S201  
 Rauber D S10, S256  
 Rauwers A S269

- Ravindran S S139, S161  
 Raymond R S142, S143, S145, S148  
 Razpotnik M S210, S223, S229, S230, S245  
 Reati R S143  
 Rechberger P S171  
 Redaelli A S41, S68, S237  
 Redaelli D S143  
 Reddy DN S21, S87, S144, S166  
 Reddy N S140  
 Reddy PM S166  
 Reffitt D S232  
 Regner S S38  
 Rego AC S87, S117, S175, S232, S248  
 Regula J S18, S92  
 Reichert B S42  
 Reichert M S28  
 Reiffenstein I S173  
 Reis D S141  
 Rejchrt S S82  
 Rempel V S14  
 Renaud F S221  
 Reñé Espinet JM S213, S214  
 Reñe JM S15, S78  
 Repici A S6, S9, S34, S36, S41, S50, S68, S77, S91, S92, S95, S101, S108, S176, S185, S221, S237  
 Repiso Ortega A S224  
 Revés J S174, S190, S267  
 Rex D S84  
 Rex DK S53, S84, S85  
 Rey JF S131  
 Reyerer MdP S213  
 Ribeiro IB S19, S46, S56, S124, S252, S253  
 Ribeiro Jr U S178  
 Ribeiro T S114  
 Ricciardiello L S36  
 Riccioni ME S7, S8, S133  
 Richter F S42  
 Rigau-Cañardo J S147  
 Rimbás M S205  
 Rimondi A S7  
 Ring E S268  
 Rinzivillo M S122  
 Rios Crespo R S28, S137  
 Ríos León R S5  
 Rio-Tinto R S86  
 Rita Carvalho J S28, S137  
 Rithesh GR S39, S182  
 Riu Pons F S5  
 Rivero-Sánchez L S77, S88, S90  
 Rivory J S34, S35, S88, S90, S153, S174  
 Rizza S S29, S128, S205  
 Rizzatti G S39  
 Rizzi F S29, S205  
 RM Schmid S28  
 Roberts D S112  
 Robertson A S7  
 Robinson DJ S32  
 Robles-Medrandá C S23, S24, S54, S66, S71, S198, S245, S259  
 Rocha M S44  
 Rockenbauer L S265  
 Rodrigo Calvo MT S23  
 Rodrigues J S179  
 Rodríguez Alcalde D S83  
 Rodríguez de Santiago E S5, S110, S111  
 Rodríguez Escaja C S5  
 Rodríguez I S39  
 Rodríguez Mendiluce I S48, S243, S260  
 Rodríguez Muñoz S S195  
 Rodríguez-Alcalde D S88, S179  
 Rodríguez-Carrasco M S22, S52  
 Rodríguez-de-Santiago E S90  
 Rodríguez-D'Jesús A S39  
 Rodríguez-Ferreiro N S144, S216  
 Rodríguez-Sánchez J S90  
 Roelandt P S45, S61  
 Roemmele C S43  
 Rogers P S139  
 Roldán Fernández M S5  
 Romańczyk M S62, S83  
 Romańczyk T S62, S83  
 Romano L S148  
 Romano S S203  
 Romero MA S91  
 Romero Mascarell C S54  
 Romero Sánchez-Miguel I S54  
 Römkens TE S26  
 Römmele C S10  
 Rondonotti E S7, S127, S194  
 Rönnow CF S253  
 Rosa B S7, S127, S129, S138, S193, S208, S209  
 Roseira J S141  
 Rosén R S253  
 Roshdy N S159, S220, S259  
 Rosinach M S168  
 Rosiñol Ò S88  
 Rosón PJ S91, S92, S109  
 Rosón-Rodríguez PJ S90  
 Rossell A S76  
 Rossi F S194  
 Rostain F S88  
 Rosztoczy A S129  
 Rouchaud A S234  
 Roug S S70, S241  
 Rouhani F S205  
 Rouquette A S34, S156  
 Rubertà F S235  
 Rückert T S10  
 Rughwani H S57, S256  
 Rui Silva M S156  
 Ruiz Andreu M S5  
 Ruiz L S121  
 Ruiz-Ramírez P S87  
 Rupińska M S77  
 Rupinski M S18  
 Rusanov D S259  
 Rust C S14  
 Rusu I S222  
 Rütter K S242  
 Rutter M S139  
 Ryan B S101, S102, S114, S133  
 Ryan J S13
- S**
- Sá I S222  
 SA Jung S98  
 SA Tircol S250  
 Sábado F S197  
 Sabat M S257  
 Sabbah M S79, S115, S117, S154, S155, S184, S196, S198, S200, S203  
 Sacarrão R S106  
 Sacco M S29, S205  
 Sacerdotianu VM S220  
 Sacerdotianu V-M S226  
 Sachtouris G S240  
 Sacristán E S215  
 Saeed SM S146  
 Saeidi R S13  
 Safatle-Ribeiro A S178  
 Saftoiu A S72, S220, S226, S227  
 Sagae VMT S19, S46, S252, S253  
 Saha S S134  
 Said A S196  
 Said Y S81, S111  
 Saikou M S9, S256  
 Saiote J S112  
 Saito S S58  
 Saito Y S58  
 Salazar Tantaleán VA S219  
 Saldaña C S39, S201  
 Saleem MA S206  
 Salem P S149  
 Salman S S257  
 Salomão Hirsch B S55, S69  
 Salústio R S147  
 Salvador I S121  
 Salzberger A S51  
 Samanta J S19, S67, S233, S239  
 Samoylenko A S232  
 Sánchez Aldehuelo R S5  
 Sanchez C S13, S21  
 Sanchez E S259  
 Sanchez-Cantos A S19  
 Sanchez-Carriel M S66  
 Sánchez-Delgado L S240  
 Sanchez-Luna S S124  
 Sánchez-Luna SA S19, S69  
 Sanchez-Ocaña R S25, S26, S94, S240  
 Sanchez-Yague A S19, S90  
 Sanglier F S234  
 Sanni L S225  
 Sanogo B S181  
 Sanogo SD S181  
 Santander C S171  
 Sant'Anna M S135, S156, S217  
 Sant'Anna M S135, S156, S217  
 Santiago Garcia J S167  
 Santiago J S59, S80  
 Santiago-García J S90  
 Santos I S99, S141  
 Santos MP S87, S117, S175, S232, S248  
 Santos S S253  
 Santos T S92  
 Saqib M S116, S146  
 Saracco GM S29  
 Sarah O S133  
 Saraiva R S112  
 Saraiva S S45, S119, S168, S197  
 Sassatelli R S174, S175  
 Saunders B S60, S76, S137, S154  
 Sauri T S224  
 Sautereau D S88, S234  
 Sautin A S247, S248  
 Savarino E S36  
 Saxna P S39  
 Sbrancia M S68, S89  
 Scaldaferrì F S13  
 Scalisi G S194  
 Scaramella L S7  
 Scatimburgo MVCV S56  
 Schäfer A S28  
 Schedel J S51, S220  
 Schenk BE S14, S30, S31  
 Scheppach MW S256  
 Schiefer T S195  
 Schifter J S18, S19  
 Schillaci D S194  
 Schivardi MR S51  
 Schlag C S28, S107, S171, S242  
 Schleischitz A S234  
 Schmid RM S107, S171, S242, S250  
 Schmidt A S81, S102  
 Schmidt I S32, S73  
 Schmidt PN S70, S241  
 Schneider G S28  
 Schneider M S65, S68  
 Schnoy E S43  
 Schoch A S237  
 Schoon E S30, S31, S251  
 Schoon EJ S14  
 Schorr W S51, S220  
 Schrauven R S84  
 Schreiber S S42, S74  
 Schreuder RM S77  
 Schulte B S74  
 Schulte-Frohlinde E S250  
 Schulz T S102

Schumacher B S14  
Schwartz MP S26  
Schweizer U S159  
Scimeca D S43, S172, S236  
Scotiniotis I S211, S212  
Scott R S41  
Seerden TC S26  
Segato S S202  
Sehgal V S8, S10, S255  
Seicean A S222  
Sekaran A S166  
Selva A S191  
Semenov S S101  
Seminov S S8, S130, S131  
Senada PA S44  
Sendino O S16, S48, S93, S224  
Sengupta S S138, S139  
Senore C S53  
Senosiain Lalastra C S5  
Seo J S149  
Seo JW S120  
Seoane Urgorri A S54  
Sequeira C S49, S61, S99, S141, S216  
Serra-Burriel M S88  
Serrano M S52, S106  
Sert I S105  
Seward E S255  
Sewnaik A S104  
SF Crinò S71  
Sfarti C S102, S265  
Sferrazza S S34, S36, S100, S101, S107, S194  
Sferrazza S S34, S36, S100, S101, S107, S194  
Shabana H S151, S188  
Shafiq Y S209  
Shah R S12, S40, S94, S234  
Shahid S S116, S146  
Shahidi N S34  
Shanker Behl N S257  
Shapovalianz S S207  
Shapovalyanz S S24  
Sharma P S32, S95, S108  
Sharmila S S251  
Sharp L S139  
Shava V S24  
Sheng W S34  
Sheridan J S268  
Shevyak P S99  
Sheyman G S18, S19  
Shi H S253  
Shiha G S132, S152, S231, S246  
Shiha MG S168  
Shihua C S193  
Shimamura Y S110  
Shishin K S38, S43, S107, S109, S123, S201  
Shivaji UN S73  
Shorbaji A S98  
Shukla A S222, S226, S232  
Shumkina L S38, S43, S107, S109, S123, S201  
Shutian Z S193  
Sica M S97, S187, S208  
Siddique MZ S146  
Sidhu B S216  
Siersema P S77, S84  
Siersema PD S53  
Signoretti M S221  
Sijie H S29  
Silva A S52, S115  
Silva de Paula Rocha R S69  
Silva J S32, S52, S215  
Silva JC S141, S264  
Silva M S112  
Silva Mendes S S98, S158  
Silva Pomarino MP S197  
Silva R S43  
Simeth C S143  
Simões G S112, S141  
Simu M S190  
Sinagra E S41, S68, S194, S237  
Singeap A-M S265  
Singh A S44, S166, S226  
Singh AP S57, S256  
Sinha SK S233, S239  
Sinonquel P S58  
Sioulas A S211, S212  
Sithu K S180  
Sivins A S191  
SK Sinha S67  
Skammelos A S142, S143, S145, S148  
Skonieczna-Żydecka K S127, S194  
Smeets XJ S26  
Smith AM S41  
Smith HA S36  
Smith SC S73  
Smith SCL S185  
Snauwaert C S145  
Sofianidis G S150, S187  
Sokal E S217  
Soli JA S258  
Soliman R S246  
Solórzano-Pineda OM S128  
Sombié AR S258  
Soncini M S61, S62  
Sondes B S113  
Soons E S77  
Soria A S191  
Soriani P S65, S219  
Sosa Valencia L S238  
Sosa-Valencia L S239  
Soudan F S57, S256  
Soumaré G S181  
Souquet JC S237  
Sousa L S106  
Sousa M S179  
Sousa Magalhães R S145, S209  
Sousa P S52  
Sousa R S134, S187  
Sousa-Pinto B S7, S193  
Souto P S104, S192  
Souza GMV S253  
Sow H S181  
Soy G S224  
Soy Ripoll G S16  
Spaander M S95, S180  
Spaander MCW S17, S30, S37, S104, S250  
Spada C S6, S7, S37, S51, S89, S130  
Spadaccini M S6, S34, S91, S92, S95, S108, S176  
Sparapam Marques C S178  
Spelga C S107  
Sperna Weiland CJ S5, S26  
Sperna Weiland RL S26  
Spicak J S11  
Spinou M S212  
Sporea I S48, S49, S190, S209  
Sportes A S131  
Spota A S20, S67, S241  
Spychalski M S92  
Srednyakova A S254  
Sreedharan A S134  
Sreh A S260  
Srinivasan P S232  
Stack W S132  
Stahl P S56  
Staiano T S221  
Stammers M S135  
Stanciu C S102, S265  
Stanghellini V S267  
Stardelova K S12  
Starzyńska T S152  
State M S82, S250  
Stathopoulos P S16, S215  
St-Denis L S57, S256  
Steele C S136, S196  
Steenholdt C S227  
Stefanovic M S251  
Steiner E S140  
Stenfors I S194  
Stepanova O S254  
Steshenko A S17, S103  
Stewart S S161, S260, S268  
Stigliano S S70  
Stigliano V S228  
Stimakovits J S234  
Stoian G S205  
Stommel MW S5  
Storan D S207  
Stoyanov D S8, S10, S255  
Stragier E S254  
Straulino F S173  
Stroescu C S72, S226  
Stupnytska N S99  
Stupnytskyi A S99  
Stylianou K S53  
Suarez-Noya A S144, S216  
Subramaniam S S50, S256  
Subtil JC S45, S46  
Suchanek S S95, S268  
Sugiyama E S127  
Sulakova A S248  
Sumioka A S127  
Sundaram S S222, S226, S232  
Surlin V S72, S226, S227  
Süveren MM S126  
Suzuki N S60, S76, S154  
Svoboda C S234  
Swanström L S238, S239  
Syk I S253  
Szalai M S129, S167, S176  
Szelemejj S242  
Szijártó A S30, S233  
Szücs Á S30, S233  
Szymanska A S265

**T**

Tadic M S12  
Tahover E S19  
Taieb J S241  
Taiymi A S211, S219, S224, S261, S262  
Takamatsu Sagae VM S69  
Takeda K S58  
Taleb A S159, S220, S231, S259  
Talukdar R S166  
Tamari H S124  
Tambaki M S181  
Tammouch Z S206  
Tampaki M S132  
Tan AC S26  
Tan Meng Yew D S29  
Tanabe M S110  
Tanaka H S124  
Tanaka S S34, S124, S127  
Tandan M S166, S223  
Tang T S30, S31  
Tantau M S55  
Tarabarov S S249  
Tarantino I S41, S68, S221, S233, S237  
Tarasova E S63, S123, S254  
Tardivel M S221  
Tariq Z S260  
Taronishvili A S259  
Tasini E S100, S101, S107  
Tate D S142  
Tato Marinho R S28, S137, S189  
Taveira F S45, S119, S141, S168  
Tavio E S5  
Tawfik A S114  
Tayimi A S223  
TD Yadav S67  
Tebé C S122



- Teijo Quintans A S220  
 Teixeira C S61  
 Tejpar S S77  
 Téllez L S5  
 Temani MK S202, S204  
 Temiño R S168  
 Teodorescu C S222  
 Teoh A S39  
 Terán-Lantarón Á S90  
 Terhaar sive Droste J S84  
 Terracciano F S153  
 Terris B S34, S156, S190  
 Teruel Sanchez-Vegazo C S110, S111  
 Testoni PA S107  
 Tharwa E-S S117  
 Thawee RE S39  
 Thayalasekaran S S53  
 Theocharis G S125  
 Theodoropoulou A S53, S189  
 Theopistos V S200  
 Theoxaris G S141  
 Thijs WJ S26  
 Timme R S102  
 Thoguluva Chandrasekar V S95, S108  
 Thomas G S24  
 Thomas T S168  
 Thomas-Gibson S S60, S76, S137, S139, S154, S161  
 Thomopoulos K S125, S141  
 Thorburn D S213  
 Thorlacius H S253  
 Thoufeeq M S135, S258, S260  
 Thygesen MK S96  
 TI Kim S98  
 TIBOUK A S56  
 Tikos G S150, S187  
 Timmerhuis HC S5, S26  
 Tioli C S175  
 Tishkov I S70, S218  
 Toes-Zoutendijk E S17  
 Togashi K S34, S84  
 Togliani T S41, S68, S218, S221, S228  
 Tomulescu V S72  
 Tontini GE S7  
 Toole DO S114  
 Topa M S7  
 Topal B S93  
 Tormo B S59, S80, S213  
 Tormo Lanseros B S226  
 Torrealba L S257  
 Torres G S15, S78  
 Torres J S190  
 Torres Monclús N S213, S214  
 Torres Vicente G S213, S214  
 Tortora A S7, S8  
 Toth D S8, S10  
 Toth E S127, S194, S253  
 Toukalkova L S248  
 Tounkara MS S181  
 Trad D S79, S115, S117, S154, S155, S196, S198, S200, S203  
 Trad N S113  
 Traenkenschuh W S56  
 Trauner M S265  
 Travis SP S57, S256  
 Treiber M S28  
 Triantafyllou K S12, S171  
 Triantos C S125, S141  
 Tribonias G S53, S189  
 Trifan A S102, S265  
 Trindade J S106  
 Tripcea R S209  
 Tristan J S134, S187  
 Trong Nguyen K S257  
 Troya J S172  
 Trung Tran Q S257
- Trusov I S24  
 Tsamakidis K S240  
 Tscherswinski N S173  
 Tsekouras K S261, S263  
 Tsevgas I S53, S134  
 Tsitsinakis G S261, S263  
 Tsoumani N S125  
 Tsounis E S125  
 Tsuboi A S127  
 Tunbridge A S260  
 Tuncer Í S126  
 Tünnemann J S195  
 Turan A S84  
 Turcu-Stiolica A S220  
 Turro J S168  
 Turro R S168  
 Tytgat KMAJ S77  
 Tziatzios G S12, S171  
 Tzimas G S211  
 Tzimas T S125  
 Tzouvala M S53
- U**  
 Ubieto V S26, S27, S201  
 Uchima H S60, S123, S168, S169, S172, S238  
 Uchima-Koecklin H S90  
 Udawat P S12, S40, S94, S234  
 Ud-din B S165  
 Ulloa Márquez E S83  
 Ulrich JD S171  
 Umans DS S5, S26  
 Umar S S84  
 Ungureanu BS S226  
 Unti E S172  
 Urak C S230  
 Urašińska E S152  
 Ureña Campos R S216  
 Uribarri L S26, S48, S201, S243, S260  
 Urpi Ferreruella M S5
- V**  
 Vackova Z S11  
 Vaculova J S248  
 Vakeesan B S138  
 Valantin V S29  
 Vale Rodrigues R S106  
 Valerio M S37  
 Valiante F S130  
 van Berkel A S33  
 van Bömmel F S195  
 van de Schootbrugge-Vandermeer H S95  
 van de Schootbrugge-Vandermeer HJ S37  
 van de Ven SEM S31, S104  
 van de Vrie W S26  
 van der Hulst R S180  
 van der Laan JJ S32  
 van der Laan JJH S73  
 Van Der Merwe K S196  
 Van der Merwe S S67, S93, S214  
 Van der Merwe S S67, S93, S214  
 Van Der Mewre K S136  
 van der Post C S77  
 van der Putten JA S73  
 van der Schaar P S26  
 Van der Sommen F S73  
 van der Waaij A.M S32  
 van Dijk SM S5, S26  
 van Dullemen HM S5  
 van Eijck B S26  
 van Eijck CH S5  
 van Etten B S32  
 van Geenen E S84  
 van Geenen EJ S5, S26  
 van Geenen E-JM S68  
 van Goor H S26  
 van Hooft JE S5, S24, S26
- van Kemenade F S95  
 van Kemenade FJ S17, S37  
 Van Laethem J-L S65  
 Van Langendonck S S254  
 van Leerdam M S33, S95  
 van Leerdam ME S17, S37  
 van Leerdam ME S17, S37  
 van Malenstein H S67, S93  
 van Munster SN S14, S30, S31  
 van Oijen MGH S77  
 Van Ouytsel P S86  
 van Santvoort HC S5, S26  
 van Tilburg L S14  
 van Vuuren A S95  
 van Vuuren AJ S17, S37  
 van Wanrooij RL S5, S26, S93  
 van Wifferen F S36, S180  
 Vanbiervliet G S15, S16, S50  
 Vance M S76, S154  
 Vanderstraeten E S254  
 Vanella G S67, S93, S177  
 Vankeesan B S139  
 Vanyan A S174  
 Vaquero E S224  
 Varbobilis I S41  
 Vardas E S189  
 Vargas A S15, S78  
 Vargas Garcia A S213, S214  
 Varghese B S134  
 Varley R S13, S114  
 Vasconcelos H S32  
 Vásquez-Elera L S267  
 Vásquez-Sánchez L S179  
 Vasquez-Tirado G S219  
 Vastola F S91  
 Vavassori S S65, S219  
 Vázquez Sequeiros E S5, S111  
 Vazquez-Sequeiros E S110  
 v/d Ven SEM S14  
 Vecchi M S7, S219  
 Vega J S267  
 Vega P S88  
 Vega R S255  
 Velásquez-Rodríguez JG S244, S245  
 Velasquez-Rodríguez J S18  
 Velegraki M S170, S189  
 Venkatachalapathy SV S41  
 Venneman NG S5, S26  
 Venti E S177  
 Ventura S S52, S115  
 Veramendi-Schultz I S267  
 Verdonk RC S5, S26  
 Vereshchak V S165, S180  
 Verheij EPD S14  
 Verset L S65, S176  
 Vescovi L S235  
 Vespa E S34, S92  
 Vettori G S194  
 Vezakis A S12  
 Viale E S107  
 Vicente PB S254  
 Videla S S122  
 Vidyaeva N S23, S104  
 Viececi F S100, S101, S107  
 Vieth M S121  
 Vijay K S39, S182  
 Vila JJ S26, S27, S39, S45, S46, S48, S109, S201, S243, S260  
 Vilagrassa-Vilella A S48  
 Vilanova-Serra M S87  
 Vilarrosa-García N S244  
 Vilas Boas F S188  
 Villa JC S215  
 Vilmann P S227  
 Virdee P S78  
 Visca P S228

Viscaíno JR S22  
Vita CV S80  
Vitello A S36, S194  
Vives J S191  
Vlachogiannakos J S132, S181  
Vlachou E S143  
Vlavianos P S216  
Vleggaar FP S5  
Vleugels JLA S77, S156  
Voermans RP S5, S93  
Voiosu A S82, S205, S214, S257  
Voiosu T S82, S205, S214  
Vojtechova G S95, S268  
von Delius S S250  
von Figura G S28, S107, S171  
von Renteln D S44  
von Schoenfels W S42  
Voorburg AM S26  
Voortman T S250  
Vorobieva E S24  
Voroniak D S246  
Vos M S269  
Voudoukis E S189  
Vougadiotis I S62  
Voulgaris T S132, S181  
Vrakas S S62  
Vrolijk JM S26  
Vu H S58  
Vuik FER S250

## W

Wadsworth C S216  
Wakamura K S58  
Waldmann E S265  
Walgraeve D S254  
Walker C S102  
Wallace MB S44  
Wallenhorst T S34, S35, S174  
Walshe M S138, S139  
Walton SL S143  
Wanert F S238, S239  
Wangermez M S15  
Wannhoff A S102  
Warner Argente C S5  
Wazir I S165  
Wdowiak M S62  
Weber T S43, S243  
Weber-Eibel J S210, S223, S229, S230, S245  
Webster G S24, S75, S78, S213  
Wedi E S81, S102, S177  
Weigt J S50  
Westerhof J S30, S31, S73  
Weusten BL S118  
Weusten BLAM S14, S30, S31  
Wichmann D S159  
Wiechowska-Kozłowska A S25, S83, S242  
Wiessner J S171  
Wiessner JR S28  
Wieszczyn P S18  
Willekens H S45  
Wilson A S60, S76, S137, S154  
Win TMM S180  
Wirsching HB S250  
Wirsing L S56  
Wisse P S180

Wittebman BJ S5, S26  
Wong T S41  
Wong Z S257  
Woodun H S260  
Worthington J S36  
Wosiewicz P S83  
Wurm Johansson G S7

## X

Xavier S S127  
Xizhong S S193  
Xourgias V S62

## Y

Yadav TD S233, S239  
Yagan N S116  
Yague AS S9  
Yakut A S183  
Yamashita K S124  
Yang D S34  
Yang DJ S44  
Yao K S121  
Yao T S121  
Yavuz A S126  
Ye Z S193  
Yeo Y S258  
Yep-Gamarrá V S219  
Yerlagadda R S223  
Yi C S193  
Ykema B S33  
Yong JHE S36  
Yongdong W S193  
Yorita N S124  
Young A S41  
Yousuf H S13  
YS Cho S98  
YT Jeen S98  
Yun O S178  
Yusuf A S188  
Yusuf MA S116, S146

## Z

Zabalza L S26, S27, S109, S201  
Zabana Y S121  
Zachariadis D S53, S134  
Zaera C S215  
Zaghloul M S225  
Zaimi Y S81, S111  
Zajęcki W S62  
Zakharova M S207  
Zamora J S5  
Zaouga S S117, S118, S185, S186  
Zaragoza N S15, S78  
Zaragoza Velasco N S213, S214  
Zarubova I S259  
Zatorski H S83  
Zavaleta Alva R S267  
Zavhorodnia N S249  
Zavoral M S95, S268  
Zavyalov D S57  
Zawada I S152  
Zayed N S231  
Zazour A S105, S116, S206, S211, S219, S223, S224, S261, S262  
Zeina A-R S213

Zeman F S51  
Zemmour C S97  
Zenovia S S265  
Zhang L S242  
Zhao X S32, S73  
Zhecheva I S218  
Zhegalov P S232  
Zhigir N S249  
Zhong N S29  
Zimen M S248  
Zinelabidine F S82, S155, S166, S182  
Zippelius C S51  
Živković M S191, S230, S265  
Zorzi M S53  
Zulli C S97, S187, S208  
Zullo A S61, S62  
Zuñiga Garcia VL S13  
Zúñiga VL S21  
Zwager LW Sc34

## ERRATUM

### Correction: eP331 MALIGNANT BILIARY OBSTRUCTION SECONDARY TO METASTATIC BLADDER CANCER – AN UNCOMMON PRESENTATION OF CHOLANGITIS

Buckley D, RS O'Neill. eP331 MALIGNANT BILIARY OBSTRUCTION SECONDARY TO METASTATIC BLADDER CANCER - AN UNCOMMON PRESENTATION OF CHOLANGITIS. *Endoscopy* 2021; 53: S206.

In the above-mentioned article, the name of O'Neill RS has been corrected. This was corrected in the online version on April 16, 2021.

## ERRATUM

### Correction: OP30 PREDICTORS OF PRECUT TECHNIQUES REQUIREMENT DURING ERCP CANNULATION

Zaragoza N, Alburquerque M, Miguel I et al. OP30 PREDICTORS OF PRECUT TECHNIQUES REQUIREMENT DURING ERCP CANNULATION. *Endoscopy* 2021; 53: S15-S16

In the above-mentioned article, the authors' order has been corrected. This was corrected in the online version on April 16, 2021.

## Endoscopy

### Copyright & Ownership

Unless otherwise stated: © 2021. Thieme.  
All rights reserved. The journal *Endoscopy* is owned by Thieme.  
Georg Thieme Verlag KG,  
Rüdigerstraße 14, 70469 Stuttgart, Germany  
Volume 52  
Endoscopy is published in 12 issues per year.  
ISSN (Print): 0013-726X  
eISSN: 1438-8812

### Editor-in-Chief

Professor Peter D. Siersema, Dept. of Gastroenterology and Hepatology, (room 1.24), Radboud University Medical Center, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands.  
The editors are not responsible for the advertisements and supplements contained in the journal.

### Publishers

Georg Thieme Verlag KG  
Rüdigerstraße 14, 70469 Stuttgart or  
P.O.Box 301120, 70451 Stuttgart  
phone +497118931-0, fax +497118931-298  
www.thieme.de/fz/endoscopy  
Web-App: www.thieme.de/eref-app  
Editorial staff at the Georg Thieme Verlag is available via: endoscopy.impressum@thieme.de, V.i.S.d.P.: Sabine Görlich-Gündüz, Rüdigerstraße 14, 70469 Stuttgart

### Advertising

Thieme Media  
Pharmedia Anzeigen- und Verlagsservice GmbH  
Christine Volpp, Rüdigerstraße 14, 70469 Stuttgart or P.O.Box 300880, 70448 Stuttgart  
phone +49 711 8931-603, fax +49 711 8931-470  
e-mail: Christine.volpp@thieme-media.de

### Production management

phone +49 711 8931-883, fax +49 711 8931-393  
e-mail: sarah.schenkel@thieme.de

### Subscription information

Subscribers are asked to inform the publisher immediately in case of address changes in order to ensure correct delivery of the journal.  
phone +497118931-321, fax: +497118931-422  
e-mail: customerservice@thieme.com  
The scientific text of this journal is available online through Thieme-connect, <http://www.thieme-connect.de>. Access to Thieme-connect is free of charge for personal subscribers. All subscription orders are entered for the calendar year. The rate of subscription is invoiced in advance at the end of the year for the following year and becomes due for payment for the full calendar year. Subscriptions can be started anytime. Subscriptions are automatically extended each year unless notice of cancellation is received from the subscriber prior to September 30 of each year (applies to Germany, Switzerland, Austria only).

For information concerning licenses and prices for institutional access, please contact:

**For customers in Germany, Austria, Switzerland**  
**Thieme Gruppe**  
Institutional Sales, Rüdigerstraße 14 70469 Stuttgart, Deutschland  
phone: +49 711-8931-407, fax: +49 711-8931-794  
e-mail: esales@thieme.de

**For customers in Europe (excluding Germany, Austria and Switzerland), Africa, Asia (excluding South Asia), Australia**  
Thieme Gruppe, Institutional Sales, Rüdigerstraße 14 70469 Stuttgart, Germany phone: +49711-8931-407, fax: +49711-8931-794 e-mail: esales\_row@thieme.de

### For customers in the US, Canada, Mexico, Central and South America

Thieme Medical Publishers, Inc., Institutional Sales 333 Seventh Avenue, New York, NY 10001 United States  
phone: +1-800-782-3488 (Toll-free in US only)  
phone: +1-212-760-0888, fax: +1-212-947-0108  
e-mail: esales\_tny@thieme.com  
Airfreight and mailing in the USA by Sheridan Press, 450 Fame Avenue, Hanover, PA 17331. Periodicals postage paid at New York, NY and additional mailing offices. Postmaster: Send address changes to European Journal of Pediatric Surgery, Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001.

### For users in the USA

Authorization of photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Georg Thieme Verlag Stuttgart. New York for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service; [www.copyright.com](http://www.copyright.com). For reprint information in the USA, please contact: [journals@thieme.com](mailto:journals@thieme.com)

### Product names

Product names which are registered trademarks may not have been specifically designated as such in every case. In case where a product has been referred to by its registered trademark it cannot be concluded that the name used is in the public domain. The same applies to labels, names or other signs.

### Manuscripts

Impact Factor (2019): 7.341  
Manuscript submission exclusively via:  
<http://mc.manuscriptcentral.com/endoscopy>  
For details regarding manuscript submission please refer to "Instructions for Authors": <http://endoscopy.thieme.com/about-the-journal>  
In principle only papers will be accepted which have not been published previously, domestically or abroad. Furthermore, manuscripts may not be offered to other publications at the same time as they are under consideration for this journal.

The corresponding author will receive a PDF-file for private use.

Authors may choose to allow, for a fee, free general access to their papers online. For details, please contact [endoscopy.impressum@thieme.de](mailto:endoscopy.impressum@thieme.de)

### Illustrations

Unfortunately, we cannot accept images already published in books, journals, or electronic products of other publishers. The reason: It is almost impossible to obtain the necessary rights of use even with payment of licensing fees. Therefore, please do not pay any licensing fees (e.g. to "RightsLink"/Copyright Clearance Center). Standard license contracts from "Creative Commons" are unfortunately also insufficient for our purposes. Contact us with any questions regarding the use of images.

### Important note

Medicine is an ever-changing science undergoing continual development. Research and clinical experience are continually expanding our knowledge, in particular our knowledge of appropriate treatment and drug therapy. Insofar as this journal mentions any dosage or application, readers may rest assured that the authors, editors and publishers have made reasonable effort to ensure that such references are in accordance with the state of knowledge at the time of production of the journal.

Nevertheless this does not involve, imply, or express any guarantee or responsibility on the part of the publishers in respect of any dosage instructions and forms of application stated in the journal. Every user is requested to examine carefully the manufacturers' leaflets accompanying each drug and to check, if necessary in consultation with a physician or specialist, whether the dosage schedules mentioned therein or the contraindications stated by the manufacturers differ from the statements made in the present journal. Such examination is particularly important with drugs that are either rarely used or have been newly released on the market. Every dosage schedule or every form of application used is entirely at the user's own risk and responsibility. The authors and publishers request every user to report to the publishers any discrepancies or inaccuracies noticed.

### Data protection

Where required by data protection laws, personal names and other data are edited and either removed or pseudonymized (alias names). This is always the case with patients, their relatives and friends, partly also with other persons, e.g. those involved in the treatment of patients.

This journal, including all individual contributions and illustrations published therein, is legally protected by copyright for the duration of the copyright period. Any use, exploitation or commercialization outside the narrow limits set by copyright legislation, without the publisher's consent, is illegal and liable to criminal prosecution. This applies in particular to photocopy reproduction, copyright, cyclostyling, mimeographing or duplication of any kind, translating, preparation of microfilms, and electronic data processing and storage (CD-Rom, DVD, USB memory stick, databases, cloud-based service, ebook and other forms of electronic publishing) as well as making it available to the public (e.g., internet, intranet or other wired or wireless data networks), in particular by displaying on stationary or mobile visual display units, monitors, smart phones, tablets or other devices by download (e.g., e-pub, PDF, App) or retrieval in any other form.

### Printed in Germany

Typesetting: seitenweise, Tübingen  
Printer: Grafisches Centrum Cuno GmbH & Co. KG, Calbe (Saale)

Annual subscription rates 2021	Germany*	Europe**	USA	Outside USA	Africa, Asia, Australia, New Zealand
Institutional E-Only	€ 1388.00	€ 1388.00	\$ 1814.00	\$ 1814.00	€ 1388.00
Institutional Print + Online (includes single-site access)	€ 1417.00	€ 1417.00	\$ 1887.00	\$ 1965.00	€ 1417.00
Personal	€ 558.00	€ 558.00	\$ 620.00***	\$ 710.00****	€ 558.00
Shipping	€ 80.60	€ 87.70			€ 115.20

Members of some national societies will receive this journal as part of their membership.

Single issue: 92.00 €\*

- \* Prices include appropriate VAT
- \*\* Customers resident in the European Union (EU) will be charged appropriate VAT unless they supply their Value Added Tax identification number with their orders.
- \*\*\* USA/Canada
- \*\*\*\* Americas outside USA/Canada

