Conversion from conventional esophageal endoscopic submucosal dissection to the gel immersion method

During conventional endoscopic submucosal dissection (ESD), increased intra-gastric pressure due to insufflation sometimes causes discomfort and pain to the patient. However, gel immersion endoscopy (GIE), which has been developed to improve intraoperative visualization and identify the bleeding point easily [1–4], may reduce patient discomfort because it can be performed under low pressure [5]. Here, we report a case of ESD of superficial esophageal cancer performed via GIE, using a novel gel product (VISCOCLEAR; Otsuka Pharmaceuticals Factory, Inc., Tokyo, Japan), for reducing patient discomfort.

A 65-year-old man was referred to our hospital for resection of superficial esophageal cancer. The lesion was flat, 45 mm in diameter, located on the left midesophageal wall, and involving two-thirds of the circumference (▶Fig.1). Although conventional ESD was performed under sufficient sedation using dexmedetomidine, midazolam, and pethidine, the patient remained irritable due to the increased intragastric pressure after CO2 insufflation. It was not possible to continue the procedure safely. Therefore, after circumferential incision and partial submucosal dissection on the proximal side, we converted to gel immersion ESD using VISCOCLEAR, which does not require high intragastric pressure. CO2 insufflation was turned off and the gel was injected through the BioShield irrigator (US Endoscopy, Mentor, Ohio, United States) (▶Fig.2). After conversion to gel immersion ESD, the patient’s irritability disappeared. We secured a good approach to the submucosal layer due to the gel’s buoyancy (▶Fig.3). The bleeding slowed due to the gel’s viscosity and further injection of the gel resulted in good visualization (▶Fig.4). Therefore, we were able to secure hemostasis quickly and easily. The tumor was completely excised without esophageal perforation or aspiration of the gel by the patient (▶Fig.5 and Video 1). Gel immersion esophageal ESD using a novel gel product (VISCOCLEAR) may be a safe and effective procedure.

Competing interests

The authors declare that they have no conflict of interest.
The authors

Yuya Nakano¹, Tomoaki Tashima¹, Ryuhei Jinushi¹, Rie Terada¹, Yumi Mashimo¹, Tomonori Kawasaki², Shomei Ryozawa¹

¹ Department of Gastroenterology, Saitama Medical University International Medical Center, Saitama, Japan
² Department of Pathology, Saitama Medical University International Medical Center, Saitama, Japan

Corresponding author

Tomoaki Tashima, MD, PhD
Department of Gastroenterology, Saitama Medical University International Medical Center, 1397-1 Yamane, Hidaka City, Saitama 350-1298, Japan
Fax: +81-42-984-4589
t.tashima1981@gmail.com

References

[1] Yano T, Nemoto D, Ono K et al. Gel immersion endoscopy: a novel method to secure the visual field during endoscopy in bleeding patients (with videos). Gastrointest Endosc 2016; 83: 809–811

Bibliography

Endosc Int Open 2021; 09: E1756–E1757
DOI 10.1055/a-1578-2543
ISSN 2364-3722
© 2021. The Author(s).
This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (https://creativecommons.org/licenses/by-nc-nd/4.0/)
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Video 1 Successful gel immersion esophageal endoscopic submucosal dissection using a novel gel product (VISCOCLEAR).