

Single-channel endoscopic closure of ERCP-related large duodenal perforations

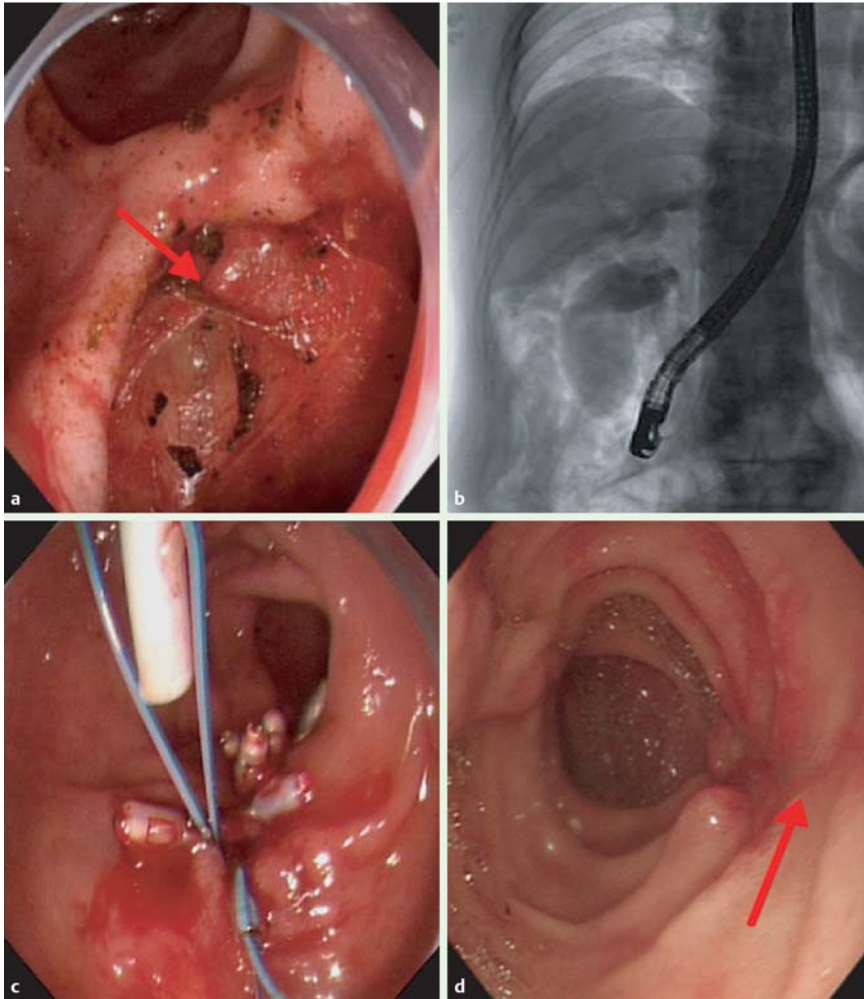


Fig. 1 **a** During endoscopic retrograde cholangiopancreatography (ERCP) in an 81-year-old man, the endoscope penetrated the contralateral papilla of the descending duodenum resulting in a perforation 3.0 cm in diameter (arrow). **b** X-ray showing substantial pneumatisis around the right kidney. **c** Single-channel gastroscopic closure of the perforation by suturing the pouch with a nylon loop and titanium clips. **d** Follow-up endoscopy 5 months later revealed a healed scar with no residual endoclips (arrow).

Duodenal perforation is a rare but potentially lethal complication of endoscopic retrograde cholangiopancreatography (ERCP) [1–3]. Large duodenal perforations, which may occur during ERCP and which cannot be closed using titanium clips, require immediate surgery or are treated with two-channel endoscopic closure using nylon loops and endoclips [4–7]. Here, using a single-channel endoscope, we describe the successful closure

of one ERCP-related large duodenal perforation using nylon loop sutures and titanium clips.

An 81-year-old man was admitted with repeated right upper abdominal pain, fever, and jaundice for 1 year. During ERCP, the endoscope penetrated the contralateral papilla of the descending duodenum giving a large perforation 3.0 cm in diameter (▶ Fig. 1 a), and entered the retroperitoneum. Substantial pneumato-

sis was observed around the right kidney under X-ray (▶ Fig. 1 b), and duodenal perforation was diagnosed. To repair the ERCP-related large duodenal perforation, the pouch was sutured with a large nylon loop and titanium clips using a single-channel endoscope with a disposable distal attachment (▶ Fig. 1 c). The procedure is shown in ▶ Video 1. Subsequently, the patient improved and was discharged on post-ERCP day 10. Re-examination by endoscopy 5 months later revealed that the scar of the perforation had completely healed (▶ Fig. 1 d).

An endoscopic perforation is usually large and located in the descending duodenum, where it is very difficult to close using a titanium clamp. The purpose of using a single-channel endoscope with a distal attachment was to maintain a clear field of vision while making it possible to fix the titanium clips. This is the first report of closure of an ERCP-related large duodenal perforation with a nylon loop suture of the pouch and titanium clips using a single-channel gastroscope. The patient recovered well after surgery and the method used reduced potential hospitalization expenses. We conclude that closure of an ERCP-related large duodenal perforation using a single-channel endoscope with a distal attachment may be an effective nonoperative approach.

Video 1

Steps for closure of an endoscopic retrograde cholangiopancreatography (ERCP)-related large duodenal perforation with a nylon loop and titanium clips, by suturing the pouch using a single-channel endoscope. The nylon loop was slowly tightened until the perforation was completely closed using the pouch suture.

Endoscopy_UCTN_Code_TTT_1AO_2AN

Competing interests: None

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References

- 1 Kerr SE, Kahaleh M, LeGallo RD et al. Death after endoscopic retrograde cholangiopancreatography: findings at autopsy. *Hum Pathol* 2010; 41: 1138–1144
- 2 Rajasekhara RM, Carmen BM, Norio F et al. ERCP related perforation rates: a systematic review and meta-analysis. *Gastrointest Endosc* 2010; 71: 140
- 3 Parlak E, Dişibeyaz S, Köksal AS et al. A new approach to gastrointestinal fistula closure: endoloop and clips technique using double endoscope. *Eur J Gastroenterol Hepatol* 2012; 24: 464–467
- 4 Kwon CI, Song SH, Hahm KB et al. Unusual complications related to endoscopic retrograde cholangiopancreatography and its endoscopic treatment. *Clin Endosc* 2013; 46: 251–259
- 5 Wu HM, Dixon E, May GR et al. Management of perforation after endoscopic retrograde cholangiopancreatography (ERCP): a population-based review. *HPB (Oxford)* 2006; 8: 393–399
- 6 Assalia A, Suissa A, Ilivizki A et al. Validity of clinical criteria in the management of endoscopic retrograde cholangiopancreatography-related duodenal perforations. *Arch Surg* 2007; 142: 1059–1064
- 7 Nakagawa Y, Nagai T, Soma W et al. Endoscopic closure of a large ERCP-related duodenal perforation by using endoloops and endoclips. *Gastrointest Endosc* 2010; 72: 216–217

Bibliography

DOI <http://dx.doi.org/10.1055/s-0034-1390714>
Endoscopy 2014; 46: E603–E604
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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