

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

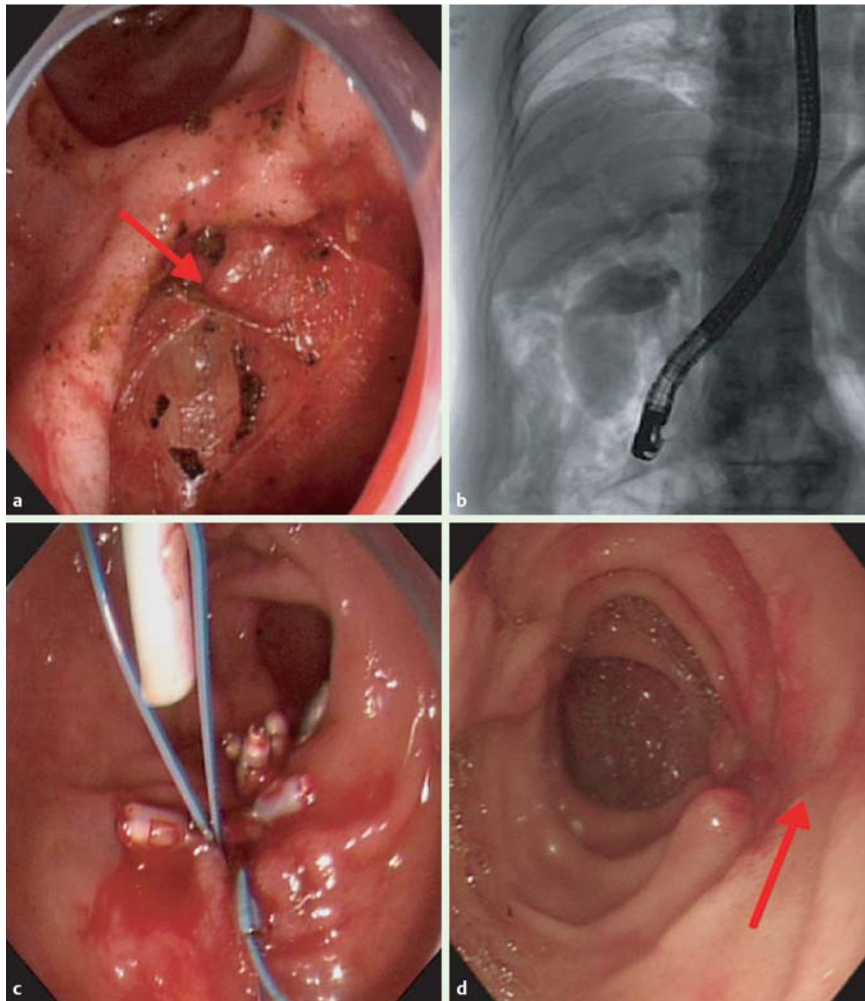


Fig. 1 **a** During endoscopic retrograde cholangiopancreatography (ERCP) in an 81-year-old man, the endoscope penetrated the contralateral papilla of the descending duodenum resulting in a perforation 3.0 cm in diameter (arrow). **b** X-ray showing substantial pneumatisis around the right kidney. **c** 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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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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