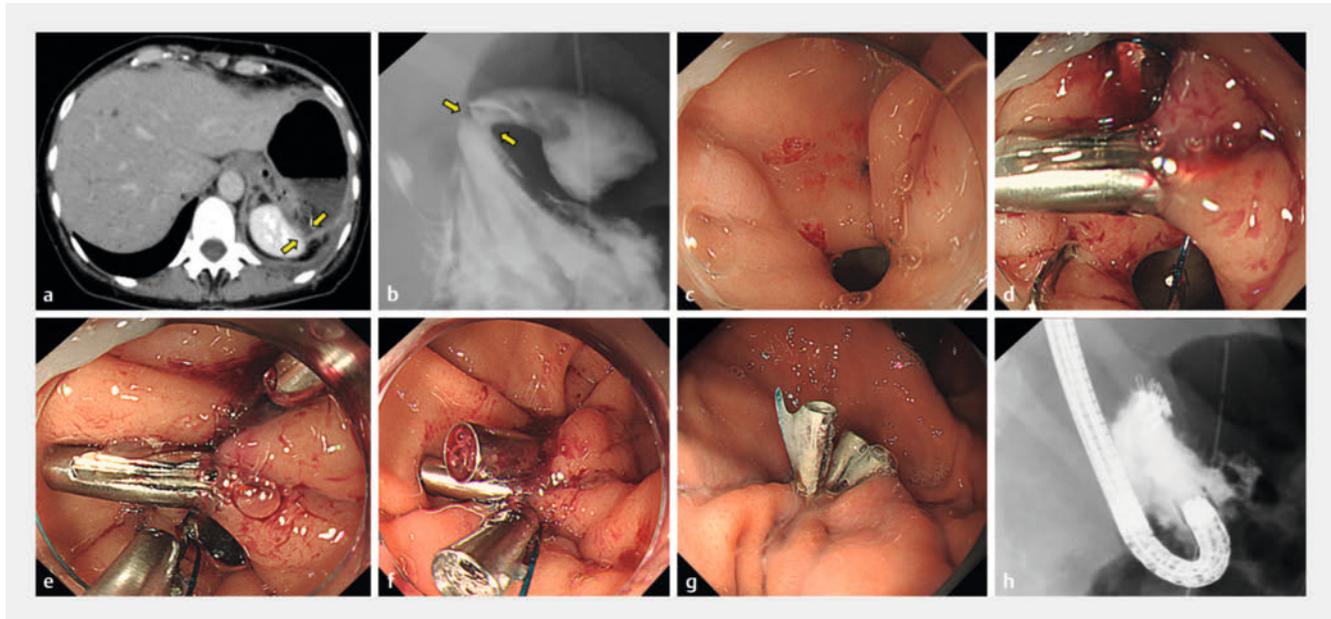


Reopenable clip-over-the-line method for closure of postoperative gastric fistula

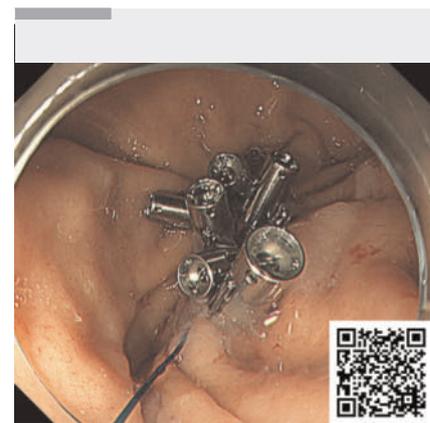
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► Fig. 1 **a** Abdominal CT image reveals a defect in the gastric wall with leakage to the left subdiaphragmatic cavity (arrows). **b** Gastrography revealed the presence of a fistula (arrows). **c** The postoperative pancreatic fistula following a distal pancreatectomy for pancreatic cancer. **d** A clip with a line was first placed at the edge of the fistula. **e** A reopenable clip with a nylon line was applied to the contralateral edge of the fistula. **f** Pulling the nylon line approximated the two clips and achieved complete closure. **g** The fistula was completely closed 7 days after ROLM. **h** The complete closure of the fistula was confirmed by gastrography. Abbreviation: ROLM, reopenable clip-over-the-line method.

Nomura et al. developed the reopenable clip-over-the-line method (ROLM), originally reported for closure of large mucosal defects after endoscopic submucosal dissection (ESD) [1]. Its use has since expanded to managing perforations during ESD and suturing post–full-thickness resections [2, 3]. However, no reports have described its use for fistula closure. Common options such as the over-the-scope clip (OTSC) system (Ovesco Endoscopy GmbH) are often applied for fistula closure, but their success rate – especially in the gastric wall – is relatively low [4]. Endoscopic hand-suturing has also emerged as a closure method, though it remains technically complex [5]. We report the first case of successful gastric fistula closure using ROLM (► **Video 1**). The patient was a 54-year-old woman who developed a postoperative pancreatic fistula (POPF) following distal pancreatectomy for pancreatic

cancer (► **Fig. 1 a**). Despite drainage, the cavity progressively enlarged. On postoperative day (POD) 17, gastrography revealed a gastric fistula connected to the POPF (► **Fig. 1 b**). Conservative treatments including percutaneous drainage, total parenteral nutrition, and antibiotics failed to improve the condition. On POD 24, endoscopic closure was attempted. An initial attempt with the OTSC system was not pursued, as the rigidity of the surrounding gastric tissue suggested a high risk of failure. We then performed ROLM using a 3–0 monofilament nylon line and seven reopenable clips (SureClip 8 mm; MicroTech), achieving complete closure in 15 minutes (► **Fig. 1 c–g**). Fluoroscopy confirmed the absence of leakage into the abdominal cavity (► **Fig. 1 h**). This case suggests that ROLM is not only effective for mucosal defects but also feasible for full-thickness gastric fistula



► Video 1 Reopenable clip-over-the-line method for closure of postoperative gastric fistula.

closure. ROLM may offer a valuable and less complex alternative when conventional approaches are technically challenging.

Conflict of Interest

The authors declare that they have no conflict of interest.

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