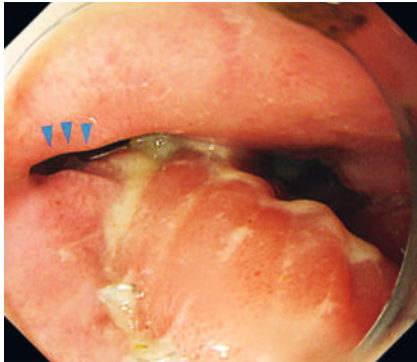
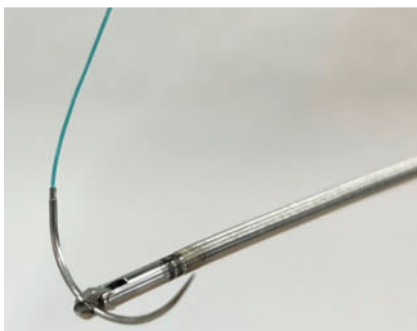


Endoscopic hand-suturing for postoperative suture failure

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► **Fig. 1** Endoscopic image showing delayed suture failure at the esophagojejunal anastomosis and anastomotic dissection (arrow).



► **Fig. 2** Photograph of the endoscopic needle holder (Stuart, Olympus, Tokyo, Japan) and suture needle with thread (V-Loc, Covidien, Massachusetts, USA).

An 82-year-old man underwent robot-assisted total gastrectomy for gastric cancer. On postoperative day 5, a pancreatic leak was observed and open abdominal drainage was performed. Upper gastrointestinal (UGI) endoscopy performed on postoperative day 29 revealed delayed suture failure at the esophagojejunal anastomosis and dissection of the anastomosis (► **Fig. 1**). The patient's general condition was poor, and it was difficult to re-suture the anastomosis. The pancreatic leak was managed with drainage, allowing the patient's nutritional status to improve.

Minimally invasive endoscopic suturing of the esophagojejunal anastomosis was later performed. An endoscopic needle holder (Stuart; Olympus, Tokyo, Japan) and a suture needle with a barbed thread, without the need to tie knots (V-Loc; Covidien, Massachusetts, USA), were used for endoscopic hand-suturing (► **Fig. 2**). The endoscopic hand-suturing closure was performed with continuous sutures from the esophageal side, and the procedure was terminated when the dissected site was closed with the mucosa (► **Video 1**). A UGI series performed 26 days after the endoscopic treatment revealed that the suture failure had resolved, and oral intake was permitted (► **Fig. 3**). A UGI endoscopy 3 months after the endoscopic treatment confirmed that the suture defect had completely closed (► **Fig. 4**).

The technique of endoscopic hand-suturing using a suture needle with a thread was developed to suture the resection surface during endoscopic submucosal dissection (ESD) for GI tumors [1–3]. Recently, a report described the use of this technique for the closure of a fistula after endoscopic ultrasound (EUS)-guided pancreatic cyst drainage [4]. Although there are no reports regarding its use for postoperative suture failure, endoscopic hand-suturing is considered a minimally invasive and effective technique that can be used in patients with poor general condition, for whom there would be difficulties undergoing repeat surgery. Endoscopic hand-suturing has the potential to be used as a minimally invasive endoscopic treatment for postoperative suture failure.

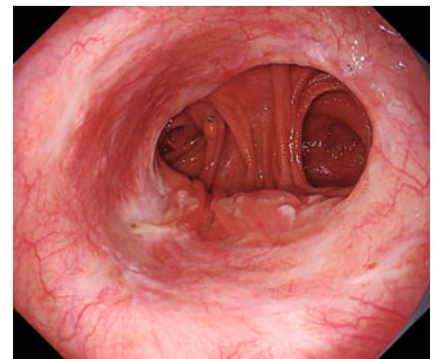
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Conflict of Interest

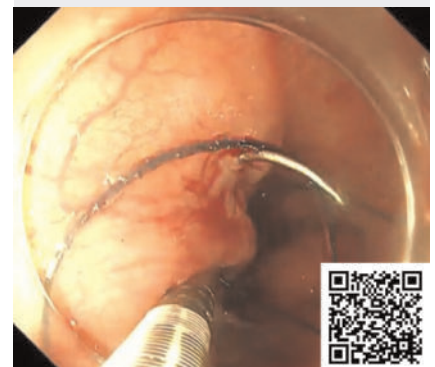
The authors declare that they have no conflict of interest.



► **Fig. 3** Radiographic image showing resolution of the suture failure.



► **Fig. 4** Endoscopic image showing complete closure of the suture defect 3 months after the endoscopic treatment.



► **Video 1** Endoscopic hand-suturing for postoperative suture failure is performed using a continuous suture.

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