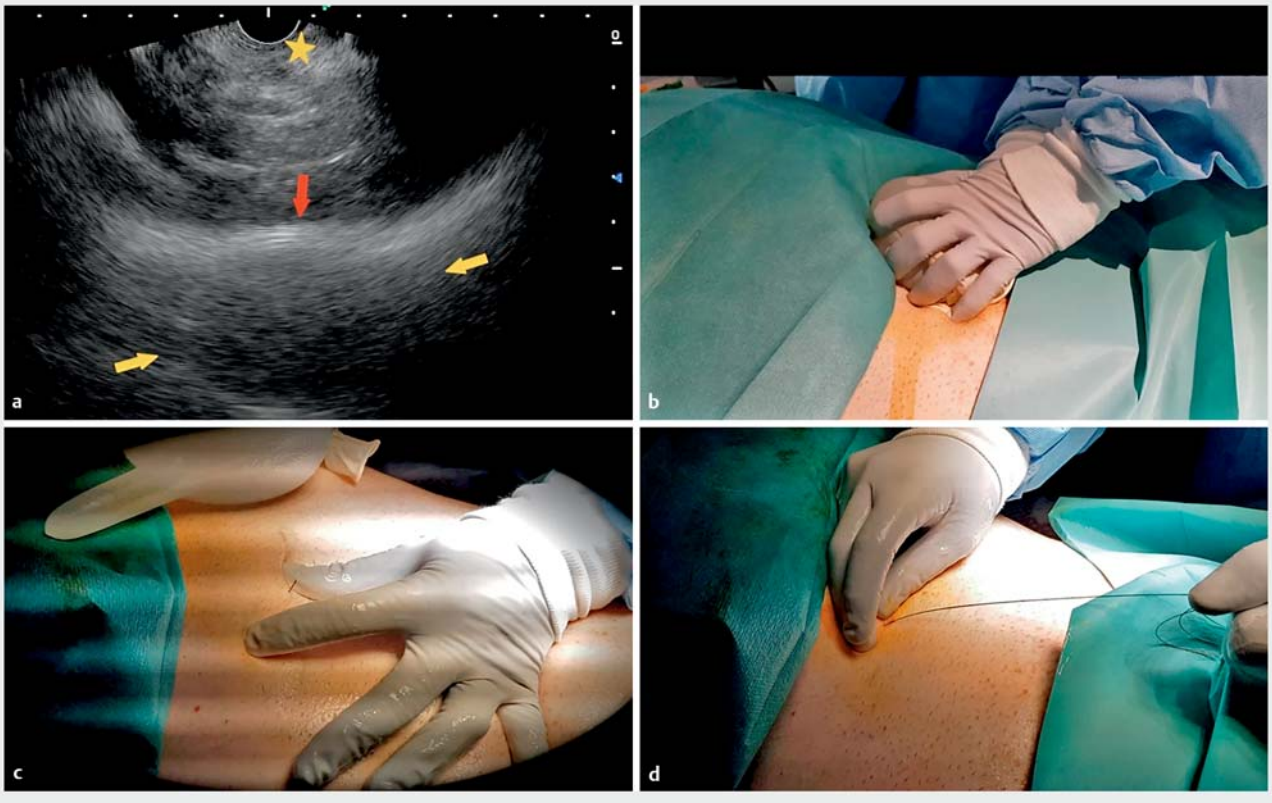
EUS-guided percutaneous endoscopic jejunostomy in cases not suitable for conventional gastrostomy: after bariatric (SADI-S) and cancer surgery

In a few cases, endoscopic ultrasound (EUS)-guided percutaneous endoscopic gastrostomy (PEG) has been reported as a safe alternative in cases that are not suitable for conventional PEG [1–3]. In the present case series, EUS-guided percutaneous endoscopic jejunostomy (PEJ) is offered as another option in scenarios with excessive distance from the stomach.

The first case was that of a 51-year-old man with amyotrophic lateral sclerosis with bulbar involvement who had undergone modified single-loop duodenal switch-type bariatric surgery (single duodenal–ileal bypass with sleeve gastrectomy, SADI-S) with subsequent conversion to Roux-en-Y. In the second case, a 70-year-old man with Ivor Lewis esophagectomy as an oncological treatment for esophageal cancer presented with a persistent tracheo-esophageal fistula. In both these patients, long-term enteral nutrition was required and lack of transillumination prevented conventional PEG placement. In a multidisciplinary team discussion, EUS-guided percutaneous placement of a feeding tube was proposed.

The technique was as follows. First, a percutaneous external "target" was created with a water-filled glove placed over the abdomen [3]. The next step was a first attempt to identify the EUS target from the stomach, but this failed because the distance was too great (>5 cm) despite hand pressure. The scope was then progressed to the proximal jejunum, from where the external EUS target was identified within an optimal therapeutic window (distance <30 mm, without vessel or small-bowel interposition). EUS-guided transjejunal puncture could now be performed using a 19-G needle and exerting hand pressure on the water-filled glove, until the needle tip emerged through the skin. A 0.025-inch guidewire was advanced, tied to the percutaneous feeding



▶ **Fig. 1** **a, b** Endoscopic ultrasound (EUS)-guided identification of the water-filled glove from the jejunum as an EUS target, through the application of hand pressure on the water-filled glove over the abdomen wall (yellow arrows, water-filled glove; red arrow, skin; yellow star, tip of EUS scope, located at the jejunum). **c** Needle tip passing through the skin, with a guidewire in place. **d** The guidewire is now across the small-bowel wall, having been previously advanced through a 19-G needle under EUS guidance.

Video 1 Endoscopic ultrasound-guided percutaneous endoscopic jejunostomy in a patient after bariatric surgery (single anastomosis duodenal–ileal switch with sleeve gastrectomy, SADI-S).

system introducer. Orifice enlargement was carried out with a scalpel to allow the tube to be introduced to the bowel as the guidewire was withdrawn through the mouth. Finally, the PEJ was placed by completing the usual steps with endoscopic confirmation that the jejunostomy position was correct (▶ **Fig. 1**; ▶ **Video 1**). An intraprocedural pneumoperitoneum was managed conservatively. No other complications were reported, and enteral feeding was restarted without incident in both cases.

EUS-guided PEJ may be considered in cases where there are contraindications to endoscopic or radiological PEG placement due to surgical changes such as after bariatric (SADI-S type) or oncological procedures.

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Competing interests

J. B. Gornals is a consultant for Boston Scientific.

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