

## Endoscopic ultrasound-guided jeuno-jejunal anastomosis for malignant outlet obstruction after total gastrectomy



► **Fig. 1** Radiographic image following oral contrast showing a normal esophagojejunal anastomosis after total gastrectomy, with a dilated jejunal limb due to malignant obstruction.



► **Fig. 2** Endoscopic ultrasound image (inset: radiographic image) showing the deployment of the distal lumen-apposing metal stent (LAMS) flange.

Endoscopic ultrasound (EUS)-guided gastrointestinal anastomosis with a lumen-apposing metal stent (LAMS) is an effective alternative to intraluminal stenting for upper gastrointestinal obstruction [1, 2]. Recently, EUS-guided jeuno-jejunal anastomosis (EUS-JJA) has been reported for adhesive obstruction after gastric bypass and afferent loop syndrome [3–5].

A 75-year-old man presented with progressive epigastric pain and weight loss due to advanced malignancy after a previous total gastrectomy. Peritoneal recurrence had been diagnosed 2 years after the gastrectomy, and he had received chemotherapy, achieving stable disease for more than 3 years. On this presentation, as celiac trunk infiltration had been found on a recent computed tomography (CT) scan, it was agreed after multidisciplinary discussion that EUS-guided celiac plexus neurolysis should be performed; however, this failed to provide pain relief. At the time of EUS, a tight jejunal stenosis was observed 8 cm below the esophagojejunal anastomosis (► **Fig. 1**).

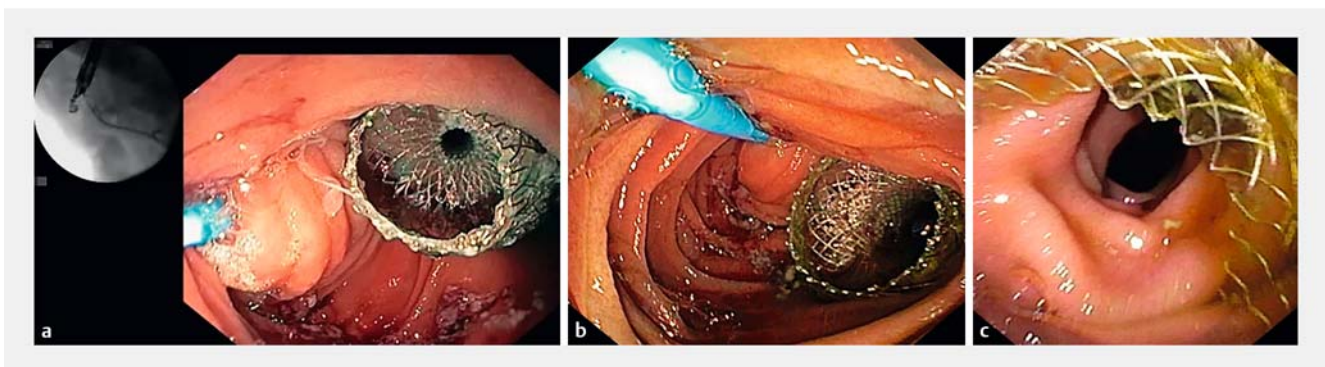
Given the persistence of symptoms, together with vomiting, the patient underwent EUS-JJA 2 weeks later, after receiving a detailed explanation of the off-label

use of the LAMS. A nasobiliary tube was advanced through the stricture and used to fill the jejunal limbs with a methylene blue–saline solution to look for an adequate operative window. A 19-gauge needle was then inserted into the target loop to check for methylene blue aspiration and to inject contrast. A 20 × 10-mm electrocautery-enhanced LAMS (Hot-Axios; Boston Scientific, Natick, Massachusetts, USA) was inserted “free-hand” and then dilated up to 18 mm (► **Fig. 2** and ► **Fig. 3 a, b**). A pediatric gastroscop was finally advanced through the LAMS to assess the post-anastomotic jejunal limb (► **Fig. 3 c**).

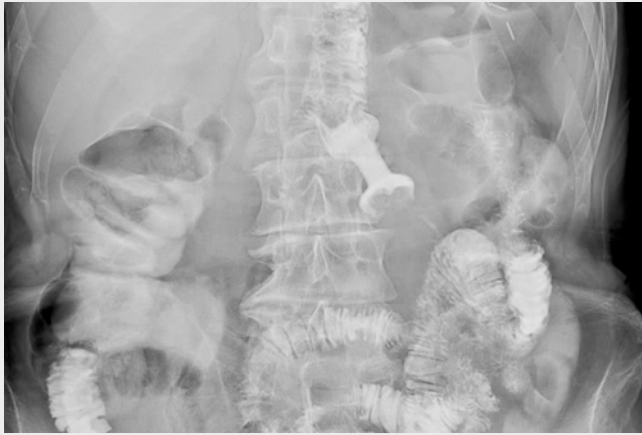
On the first postoperative day, a contrast study showed restoration of bowel transit (► **Video 1**) and oral feeding was resumed. The patient tolerated the procedure well and returned home 5 days later. He maintained adequate oral feeding and regained 2 kg of weight during the following 2 weeks, allowing chemotherapy to be restarted. Interestingly, he experienced significant improvement in pain control too.

EUS-JJA seems an effective treatment for malignant jejunal outlet obstruction.

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► **Fig. 3** Endoscopic images showing: **a** the released lumen-apposing metal stent (LAMS) adjacent to the nasobiliary tube that had been placed through the stricture (inset: radiographic image); **b** the endoscopic ultrasound-guided jeuno-jejunal anastomosis after dilation; **c** the jejunal limb viewed through the LAMS using a pediatric gastroscop.



**Video 1** Follow-up radiographic image 24 hours after the procedure showing normal passage of oral contrast medium through the jejuno-jejunal anastomosis, thereby confirming restored bowel transit.

### Competing interests

The authors declare that they have no conflict of interest.

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