Endoscopic ultrasound-guided esophagointerostomy for a completely obstructed surgical anastomosis

Endoscopic ultrasound (EUS) has the potential to safely guide the creation of gastrointestinal anastomoses [1]. Different methods have been studied in animal models [2] and more recently EUS-guided gastroenterostomy with a lumen-apposing stent has been described in two small patient series [3, 4].

A 58-year-old woman with junctional adenocarcinoma who had undergone total gastrectomy with distal esophagectomy in October 2014 was referred to us with grade 4 dysphagia in January 2015. Endoscopy revealed a completely obstructed esophagojejunal anastomosis, the position of which was confirmed by imaging (Fig. 1).

Initial access to the jejunum was accomplished under EUS guidance with a flexible 19G needle (Expect; Boston Scientific, Spencer, Indiana, USA) (Fig. 2). Once the tip of the needle had been advanced beyond the anastomosis, contrast agent was injected to confirm that the needle was correctly located in the jejunum. A 0.025-inch guidewire was advanced through the needle and looped in the intestinal lumen. An over-the-wire exchange with a therapeutic forward-viewing endoscope was performed and the anastomotic tract was dilated over the guidewire, first with a 7-Fr biliary dilation catheter, then up to 6mm using a biliary balloon. Finally, a fully-covered biliary self-expanding metal stent (SEMS) was inserted and left in place for 1 week to prevent anastomotic leakage and to consolidate the passage (Fig. 3a).

The biliary stent was subsequently replaced with a fully-covered “yo-yo” stent (NAGI stent; Taewoong, Seoul, Korea) with a 16-mm diameter (Fig. 3b). However, because of pain, this stent was removed after only 1 week and over three consecutive sessions the neoanastomosis was progressively dilated with balloons up to 20mm (Fig. 3c; Video 1). This is the first reported case of EUS-guided treatment of a completely obstructed esophagoenteric anastomosis located in the mediastinum. EUS helped to achieve safe access to the jejunum by avoiding inadvertent puncture of the surrounding
mediastinal structures, such as the pulmonary artery, descending aorta, and inferior vena cava, which were located close to the anastomosis. No immediate or delayed major complications were observed and patient was able to return to a regular diet on completion of the endoscopic treatment.

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Fig. 3  Endoscopic views showing: a the fully covered biliary self-expanding metal stent (SEMS) that was initially left in place to consolidate the passage and prevent anastomotic leakage; b the fully covered lumen-apposing stent that was placed instead of the biliary SEMS to dilate the neoanastomosis; c the appearance of the neoanastomosis after three sessions of balloon dilation.