EUS-guided gastrojejunostomy for benign gastric outlet obstruction in a patient with Whipple anatomy

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Although lumen-apposing metal stents (LAMSs) are approved for pancreatic fluid collections, off-label use continues to arise for management of a variety of clinical scenarios. LAMSs have been previously described to facilitate biliary access[1] and enteral nutrition via EUS-guided gastroenterostomy in the setting of benign and malignant gastric outlet obstruction (GOO) as an alternative to or step-up therapy from duodenal stent placement.[2-5] We describe a case of benign GOO in the setting of Whipple anatomy successfully treated by EUS-guided gastrojejunostomy (GJ) with a LAMS to improve food passage into the efferent limb.

A 76-year-old woman who had previously undergone Whipple operation for a pancreatic cystic lesion presented 5 years after the Whipple procedure with symptoms of GOO, including nausea and vomiting. An upper endoscopy revealed retained gastric contents. There was evidence of obstruction during the GJ, including a tight angulation at the efferent limb takeoff and flattening of the jejunal limb circumference, with jejunal mucosa endoscopically visualized intermittently effacing the anastomosis (Fig. 1).

An upper GI series identified delayed gastric emptying through the anastomosis with extensive retained contrast at 20 minutes (Fig. 2). Cross-sectional imaging, endoscopy,

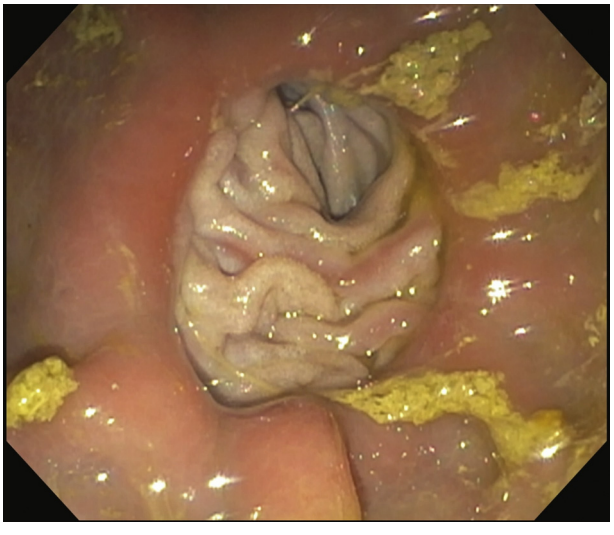

Figure 1. Obstructed GJ resulting from tight angulation at the efferent limb takeoff and flattening of the jejunal limb circumference.

Figure 2. Upper GI series demonstrated delayed gastric emptying through the anastomosis.

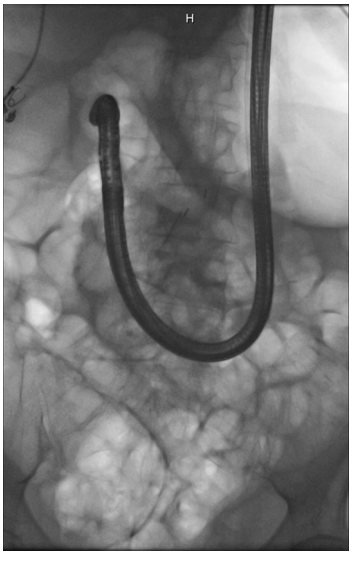

Figure 3. Trajectory of the endoscope on fluoroscopy toward the right upper quadrant facilitated identification of the afferent limb.

Figure 4. Fluoroscopy demonstrated contrast injected into the efferent limb.

Figure 5. Endosonographic visualization of the dilated and contrast-filled efferent limb.

and biopsy samples confirmed absence of malignancy. After several endoscopic procedures with ineffective through-the-scope hydrostatic balloon dilation, the patient declined surgical intervention and elected for an EUS-guided GJ to provide an alternate route for enteral nutrition. During endoscopy, care was taken to accurately identify and examine the afferent and efferent limbs.

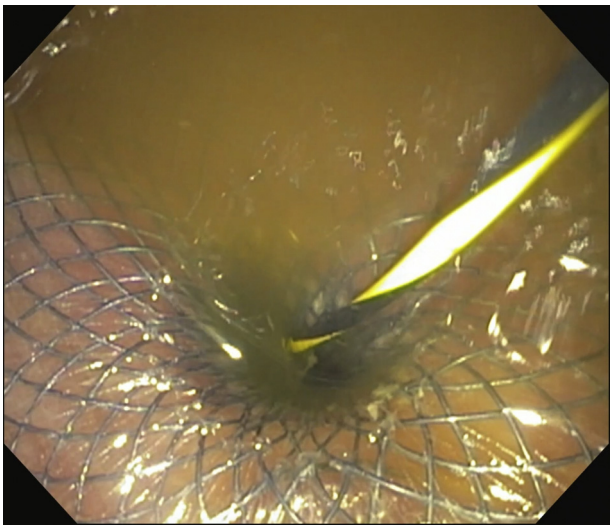

Figure 6. A rush of blue-tinged fluid refluxed into the gastric lumen, which confirmed successful lumen-apposing metal stent deployment.

Figure 7. A saline solution flush confirmed patency and correct placement of the resited gastrojejunostomy.

The afferent limb was identified by its more acute takeoff from the GJ, the trajectory of the endoscope toward the right upper quadrant on fluoroscopy (Fig. 3),

Figure 8. A repeat upper GI series identified resolution of the delay in passage of contrast.

the presence of bile in the lumen (Video 1, available online at www.VideoGIE.org), and endoscopic visualization of the hepaticojejunostomy (Video 1). Ultimately, a guidewire was advanced deeply into the efferent jejunal limb. Over the wire, a nasobiliary drain was advanced into the jejunum (Video 1), and a dilute mixture of contrast and methylene blue was injected into the efferent limb (Fig. 4).

A linear echoendoscope was advanced into the stomach. The dilated and contrast-filled efferent limb was visualized using endosonographic (Fig. 5) and fluoroscopic guidance. A 20- × 10-mm cautery-enhanced LAMS was successfully deployed, with a rush of blue-tinged fluid refluxing into the gastric lumen to confirm placement (Fig. 6). A wire was advanced after deployment of the first flange. The LAMS was successfully balloon dilated to 18 mm. Intraprocedurally, a saline solution flush confirmed patency and correct placement of the resited GJ (Fig. 7). A repeat upper GI series identified resolution in the delay in passage of contrast (Fig. 8).

The patient was discharged home and experienced near-immediate relief of her symptoms. Her weight has remained stable after 6 months of follow-up, and she remains clinically well. She will undergo annual endoscopy with replacement of the LAMS should tissue ingrowth or recurrent GOO occur.

In conclusion, endoscopists should be familiar with Whipple anatomy and the unique inherent endoscopic implications in such patients. In addition, correct identification of the afferent and efferent limbs is critical for diagnostic and therapeutic endoscopy. Our patient developed benign GOO in the setting of Whipple anatomy. Although her anatomy was altered, an EUS-guided GJ to allow improved food passage was technically feasible and safe with a good clinical outcome.

DISCLOSURE

Dr Law is a consultant for Olympus America. All other authors disclosed no financial relationships.

Abbreviations: GJ, gastrojejunostomy; GOO, gastric outlet obstruction; LAMS, lumen-apposing metal stent.

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