

Endoscopic septotomy for management of anastomotic stricture following Whipple



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BACKGROUND

Anastomotic strictures are a known adverse event following the Whipple procedure.¹ Balloon dilation can be effective, but it usually requires several sessions and there is a risk of perforation.² Although stents can be a helpful option, they are not a long-term solution because of the risks of migration, ulceration, and perforation, and recurrence of stricture is common.³ We detail an approach that combines EUS-guided gastrojejunostomy (EUS-GJ) with endoscopic septotomy as a solution to refractory anastomotic stricture after the Whipple procedure.

CASE DESCRIPTION

A 75-year-old man with a medical history significant for classical Whipple procedure 25 years prior (acinar cell

pancreatic cancer) presented with chronic nausea, intermittent vomiting, and weight loss. Upper GI series and endoscopic evaluation revealed a gastrojejunal anastomotic stricture (Figs. 1 and 2). Because symptoms were refractory to several balloon dilation sessions, stenting of the gastric outlet was undertaken and led to symptomatic improvement. However, after the stent was removed, the patient's symptoms gradually returned. Hence, an EUS-GJ using a lumen-apposing metal stent (LAMS) was then performed adjacent to the gastric outlet to further control symptoms (Fig. 3). A fully covered self-expandable metal stent (FC-SEMS) was also placed across the anastomotic stricture, although this was intended as a bridge to more long-term treatment (Figs. 4 and 5). Both stents were then removed, and endoscopic cutting of an intervening septum between the 2 openings was performed successfully with a scissors-type electro-surgical knife (Video 1, available online at

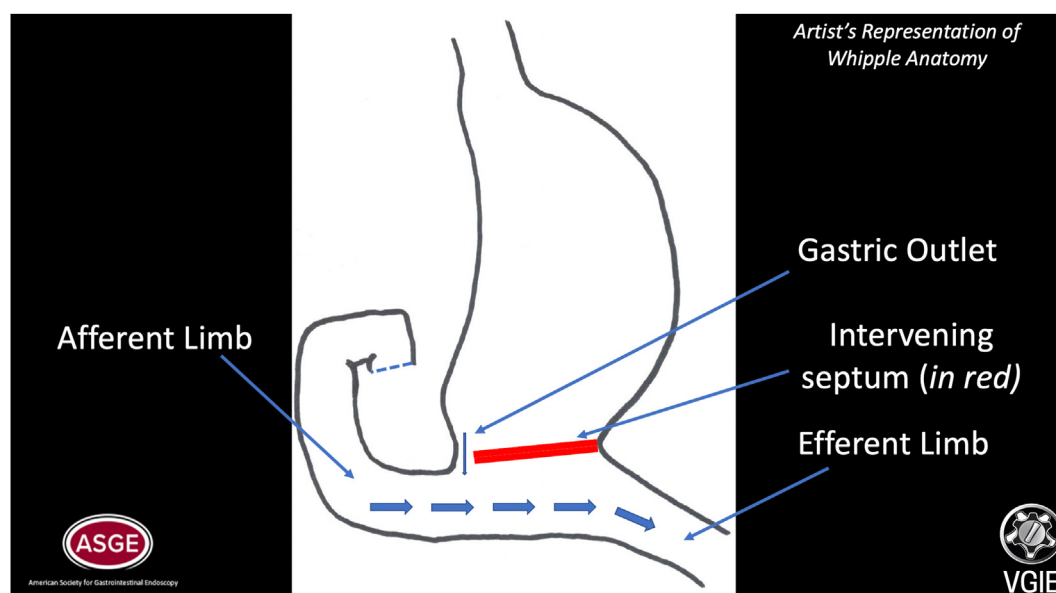


Figure 1. Artist's rendering of the patient's surgically altered gastric anatomy, with anastomotic stricture at the gastric outlet and intervening septum.

Abbreviations: EUS-GJ, endoscopic US-guided gastrojejunostomy; FC-SEMS, Fully covered self-expandable metal stent; LAMS, lumen-apposing metal stent.

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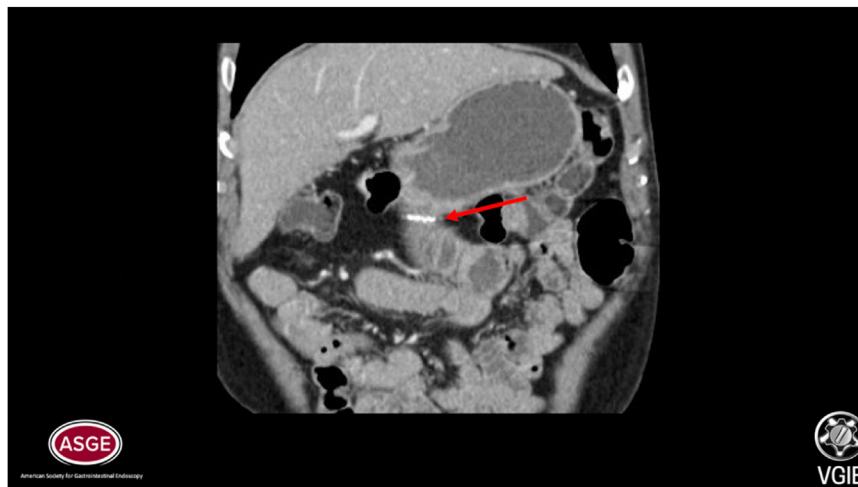


Figure 2. CT of the anatomy before the endoscopic septotomy. Notably, the orientation of the small bowel with the stomach is amenable to EUS-guided gastrojejunostomy. The stricture is denoted by a *red arrow*.

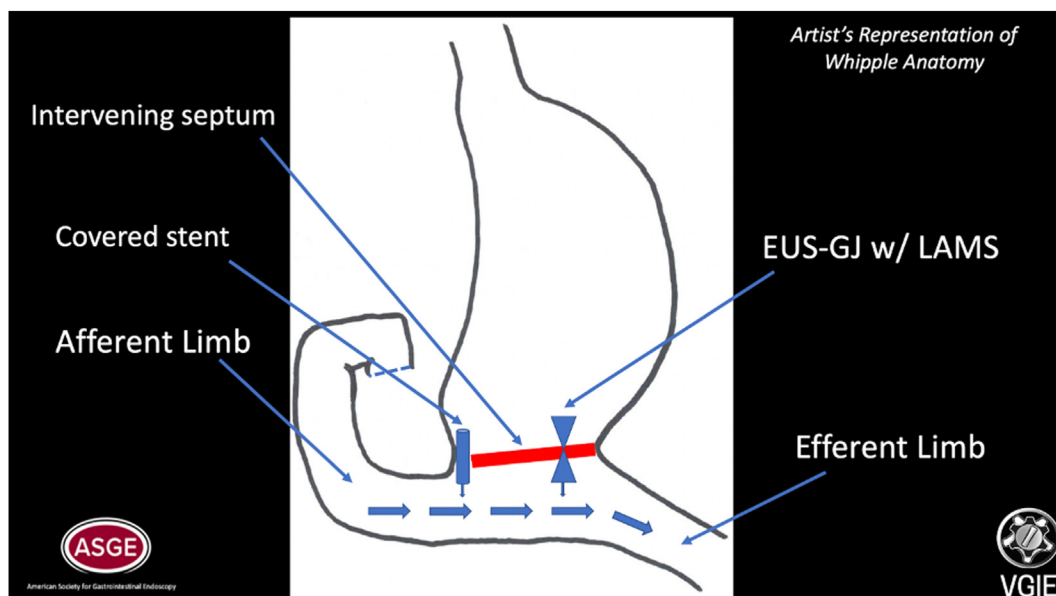


Figure 3. Status post placement of FC-SEMS across the strictured gastric outlet and LAMS placed adjacent to the outlet. *EUS-GJ*, EUS-guided gastrojejunostomy; *FC-SEMS*, fully covered self-expandable metal stent; *LAMS*, lumen-apposing metal stent.

www.videogie.org). Oral intake followed the same day, and improvement of symptoms continued on outpatient follow-up 4 and 8 weeks later with no further visits for nausea or vomiting (Figs. 6 and 7).

ENDOSCOPIC METHODS

A sutured 15 × 10-mm LAMS was placed across the gastric outlet and then removed 4 weeks later on endoscopic follow-up. Two weeks after this, adjacent to the anastomotic stricture, an EUS-GJ was created with a 20 × 10-mm LAMS, while a 10 × 40-mm covered biliary metal stent was placed across the gastric outlet. Six weeks later, a therapeutic endo-

scope was inserted, and the previously placed LAMS and FC-SEMS were removed. In the same session, an intervening septum between the 2 openings was visualized, and using endoscopic cutting with a scissors-type electrosurgical knife (electrosurgical generator settings: effect 2, duration 3, interval 1), the septum was completely cut to reveal the small bowel (Video 1). A 20 × 10-mm LAMS was deployed in the new widely patent anastomosis and was fully dilated (Video 1). The LAMS was removed 4 weeks later, with continued resolution of symptoms at follow-up 8 weeks after the procedure (Fig. 7).

Technical considerations for this procedure first include the feasibility of an EUS-GJ and the patient's overall

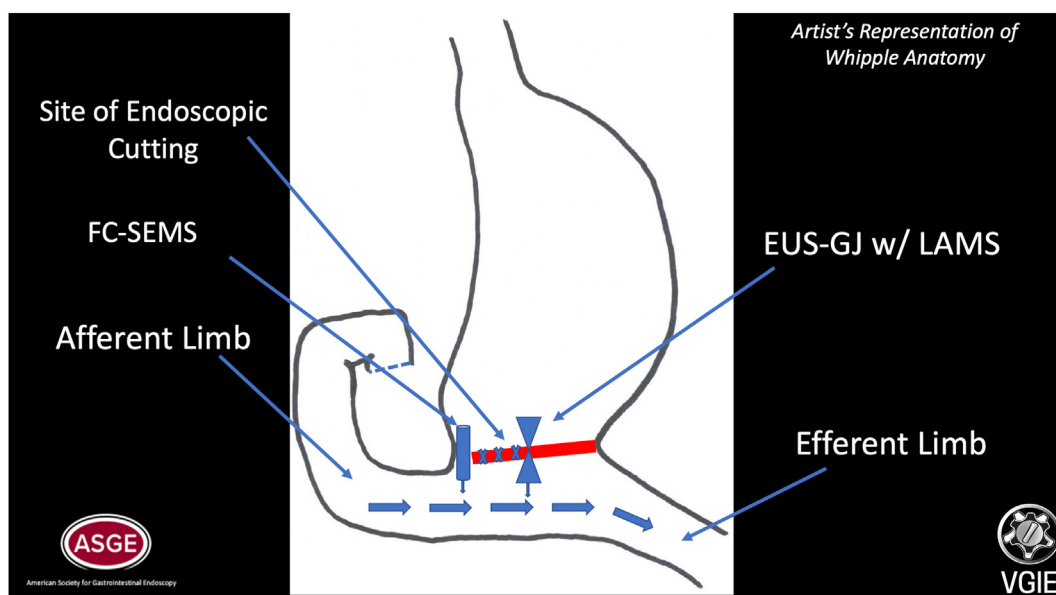


Figure 4. Depiction of the septotomy site, located at the intervening septum between the 2 stents. *EUS-GJ*, EUS-guided gastrojejunostomy; *FC-SEMS*, fully covered self-expandable metal stent; *LAMS*, lumen-apposing metal stent.

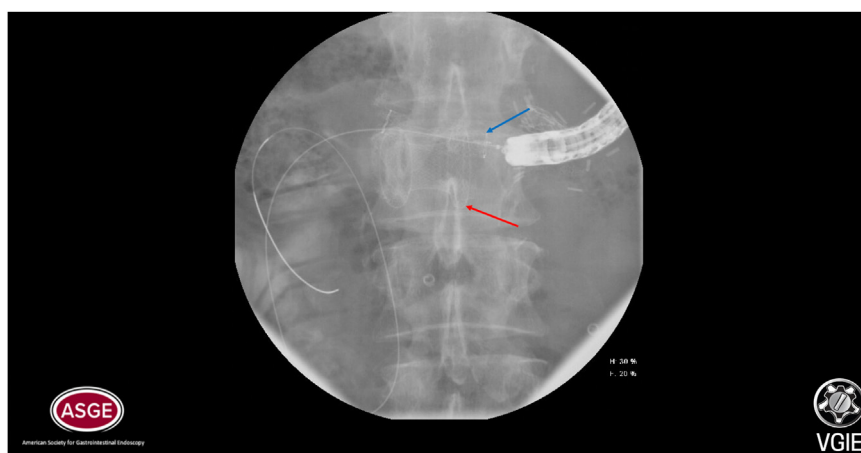


Figure 5. Fluoroscopic view showing the orientation of the EUS-guided gastrojejunostomy lumen-apposing metal stent (*red arrow*) adjacent to the fully covered self-expandable metal stent (*blue arrow*) within the stomach.

postsurgical anatomy. The main risks of this procedure include perforation at the time of EUS-GJ and bleeding at the time of septotomy. Contraindications include coagulopathy, active use of blood thinners, and active infection.

CONCLUSIONS

In the treatment of obstruction secondary to stricture, the various treatment options each come with trade-offs in terms of convenience, effectiveness, risks, and recovery time. This procedure combined EUS-GJ with endoscopic septotomy for creation of a stentless, widely patent anasto-

mosis. This approach provides a long-term solution for refractory anastomotic strictures in suitable anatomy.

PATIENT CONSENT

The patient in this article has given written informed consent to publication of their case details.

DISCLOSURES

The authors have no conflicts of interest to declare.

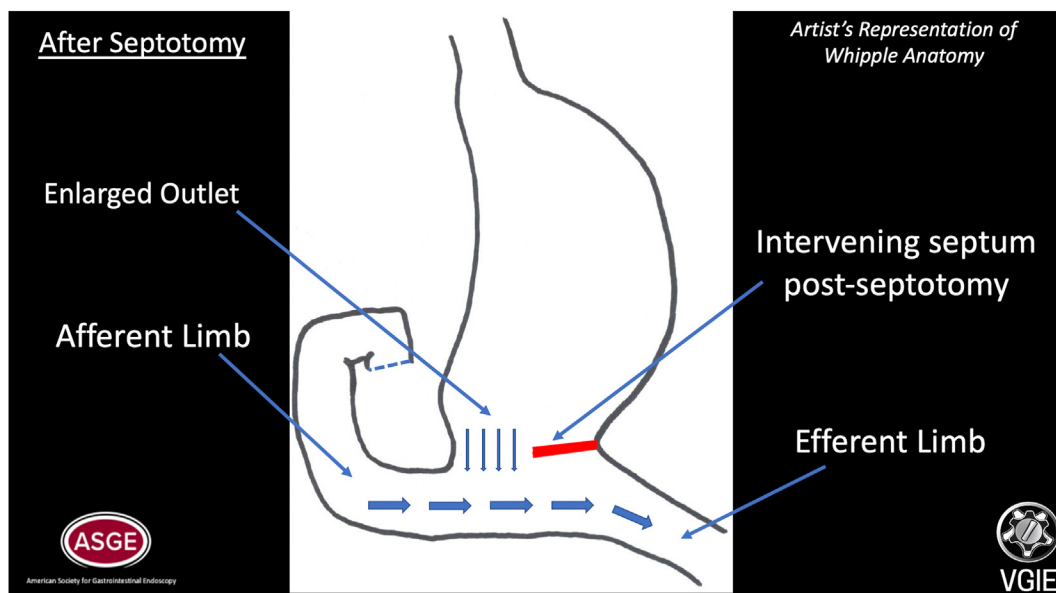


Figure 6. Depiction of the new gastric outlet after the septotomy.

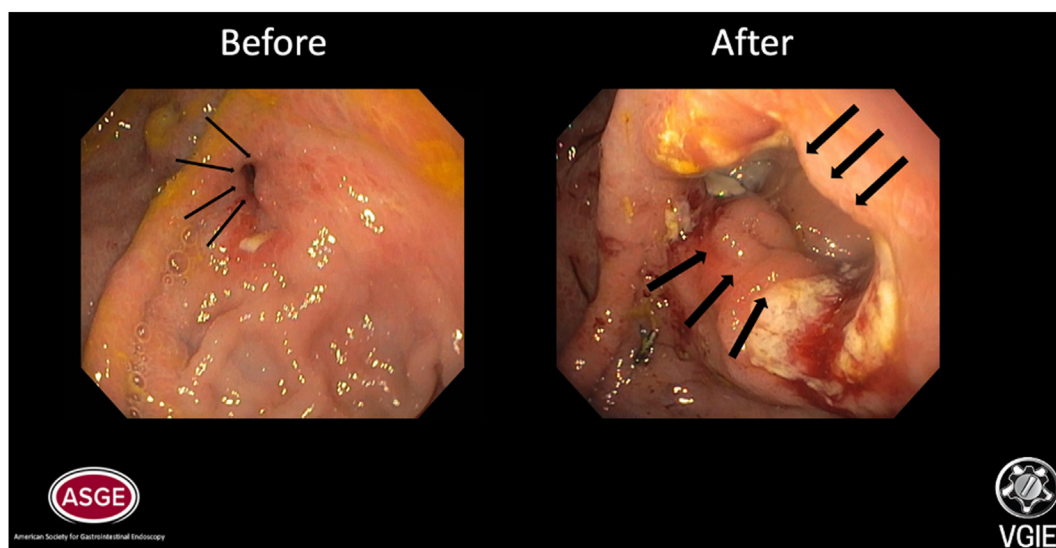


Figure 7. Gastric outlet before treatment and follow-up endoscopy after treatment. *Arrows* denote the respective gastric outlet sites.

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