Relief of dysphagia due to advanced achalasia by endoscopic creation of an esophagogastric bypass anastomosis through an epiphrenic diverticulum

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An 85-year-old man with long-standing dysphagia and multiple admissions for aspiration pneumonia was referred for evaluation. A CT of the chest showed a large epiphrenic diverticulum (6.1 × 5.8 cm). A barium swallow showed diffuse esophageal dysmotility and moderate narrowing of the gastroesophageal junction (GEJ) with preferential filling of the diverticulum. Esophageal manometry showed absence of peristalsis consistent with type I achalasia. The patient refused surgery and was offered endoscopic management with a plan to create a fistulous tract between the dependent portion of the epiphrenic diverticulum and the stomach to bypass the GEJ. At the time, per-oral endoscopic myotomy was not being performed at our institution. We elected not to use botulinum toxin injection in this patient because of its short-term effect and the need for recurrent injections, which can lead to gradual loss of response. More importantly, our patient had long-term achalasia, which had resulted in the formation of a large diverticulum (6.1 × 5.8 cm) (Fig. 1). We believed that the large diverticulum would continue to retain food even after treatment, and the risk of aspiration pneumonia would not be reduced by a temporary fix of the underlying achalasia. Thus, we reasoned that connecting the large diverticulum to the stomach could solve this chronic and complicated situation.

The procedure was performed with the patient under general anesthesia. A nasogastric tube was positioned in the stomach to instill water and contrast medium. The echoendoscope was passed into the esophagus, positioned inside the dependent portion of the diverticulum, and rotated toward the fluid-filled stomach. A standard 19G FNA needle was used to puncture into the stomach. A 0.035-inch × 450-cm straight biliary guidewire was passed antegrade into the stomach. A 15-mm-diameter × 1-cm-long lumen-apposing self-expandable metal stent with an electrocautery-enhanced delivery system device (Axios-EC, Boston Scientific, Natick, Mass) was passed over the wire by the use of electrocautery to create an esophagogastric anastomosis (Fig. 2). The stent was deployed under endoscopic and fluoroscopic guidance (Fig. 3; Video 1, available online at www.VideoGIE.org).

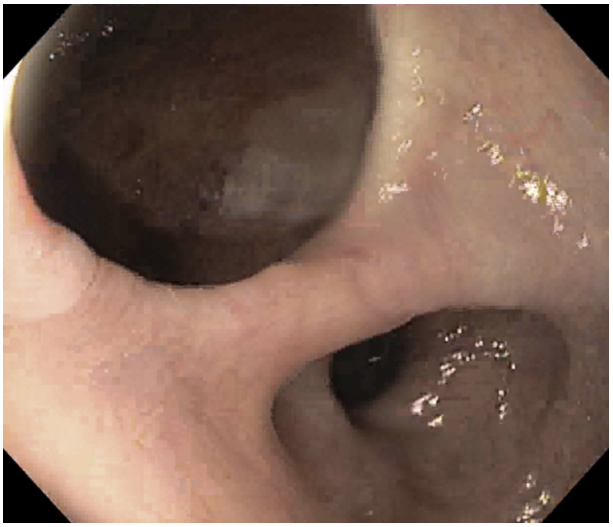

Figure 1. Endoscopic view showing diverticulum at upper left and gastroesophageal junction at lower right.

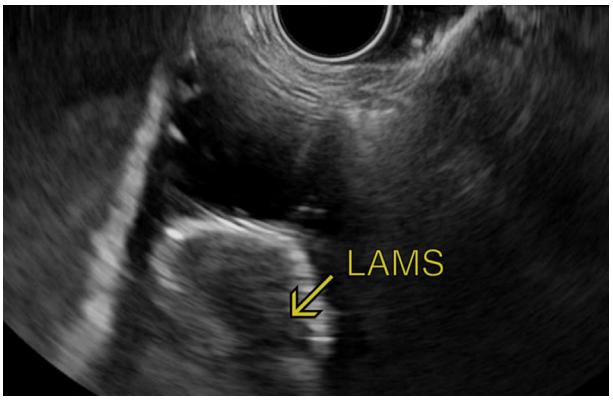

Figure 2. Echoendoscopic view during deployment of the lumen-apposing metallic stent *(arrow)*.

The procedure was completed with the patient as an outpatient, and no immediate adverse events occurred. The patient reported improvement in the dysphagia and tolerated a soft diet.

Written transcript of the video audio is available online at www.VideoGIE.org.

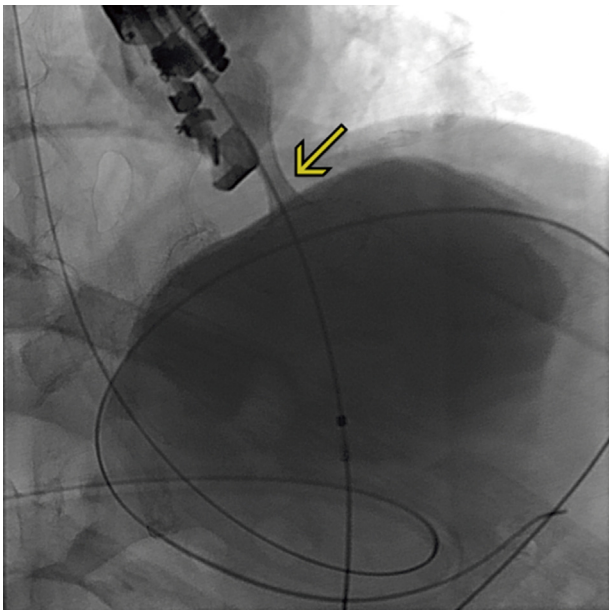

Figure 3. Fluoroscopic image after deployment of the lumen-apposing metallic stent *(arrow)* across the endoscopically created esophagogastric anastomosis.

Figure 4. Endoscopic view during passage of upper endoscope through the lumen-apposing metallic stent into the stomach with retroflexed view of the cardia.

Six weeks later the patient was admitted with melena. Endoscopy showed ulceration within the diverticulum at the edge of the lumen-apposing metal stent (LAMS) (Fig. 4). The LAMS was removed, and the esophagogastric anastomosis was dilated to 20 mm to further facilitate esophageal emptying. A follow-up barium swallow showed a decrease in the size of the diverticulum and a patent fistula from the diverticulum to the stomach (Fig. 5).

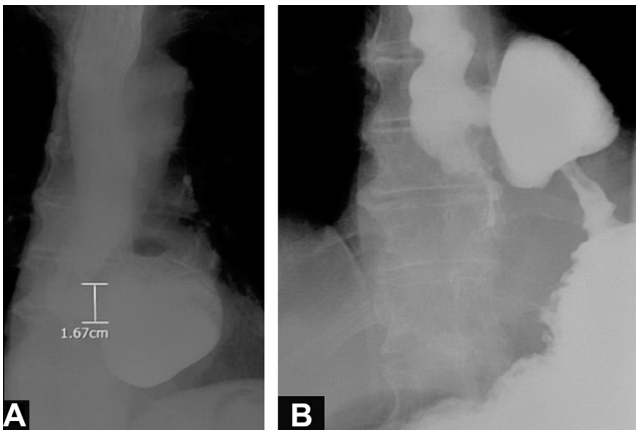

Figure 5. Fluoroscopic images of barium swallow (**A**) before and (**B**) after endoscopic creation of an esophagogastric bypass anastomosis.

The patient remains clinically well and without further admission or intervention 9 months later. The management of achalasia in the setting of a large epiphrenic diverticulum using an LAMS allows an esophagogastric anastomosis to bypass the GEJ. It is technically feasible and safe as a single-stage procedure and can be considered in high-risk surgical patients.

DISCLOSURE

Dr Baron disclosed a financial relationship with the following companies: W. L. Gore, Boston Scientific, and Cook Endoscopy. All other authors disclosed no financial relationships relevant to this publication.

Abbreviations: GEJ, gastroesophageal junction; LAMS, lumen-apposing metal stent.

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