Management of a windsock diverticulum by the use of novel submucosal dissection scissors

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A 41-year-old woman was referred for evaluation for a 2-year history of nausea, postprandial pain, dysphagia to solid food, and intermittent regurgitation. An esophagram demonstrated a 4-cm-long outpouching suggestive of an epiphrenic diverticulum. Endoscopic evaluation demonstrated the esophageal diverticulum identified on her fluoroscopic evaluation; however, the patient was also noted to have an intraluminal duodenal diverticulum (ie, windsock diverticulum) in the second portion of the duodenum (Fig. 1).

Windsock diverticulum is a rare congenital anomaly resulting from incomplete recanalization of the embryologic foregut, leaving a membrane within the duodenum.[1] Over time, continued peristalsis leads to elongation of the membrane and formation of a diverticulum. Windsock diverticula arise in the second portion of the duodenum near the ampulla of Vater and are described as such because of the pathognomonic appearance on upper-GI series.[2] Most patients are asymptomatic, but some may have nausea, vomiting, postprandial abdominal pain, early satiety, and weight loss. They less commonly can present with GI bleeding, small-bowel obstruction, and pancreatitis.[3-5] After identification, endoscopic diverticulectomy or diverticulotomy can be performed, and many techniques have been described. A variety of devices have been reported, including standard polypectomy snares, needle-knife papillotomes, standard sphincterotomes, and endoscopic submucosal dissection knives.[6-8] After resection or incision, the endoscopist should be aware that these lesions are known to be very vascular and are prone to both immediate and delayed bleeding.

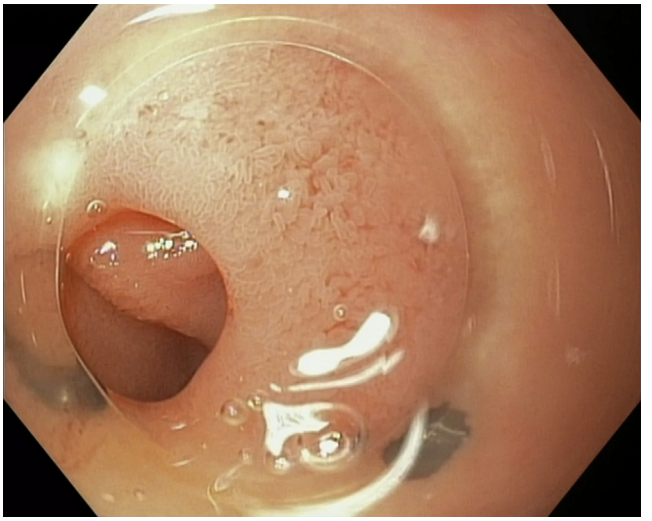

Figure 2. Diverticular base with a small orifice. The distal duodenum can be visualized through this orifice.

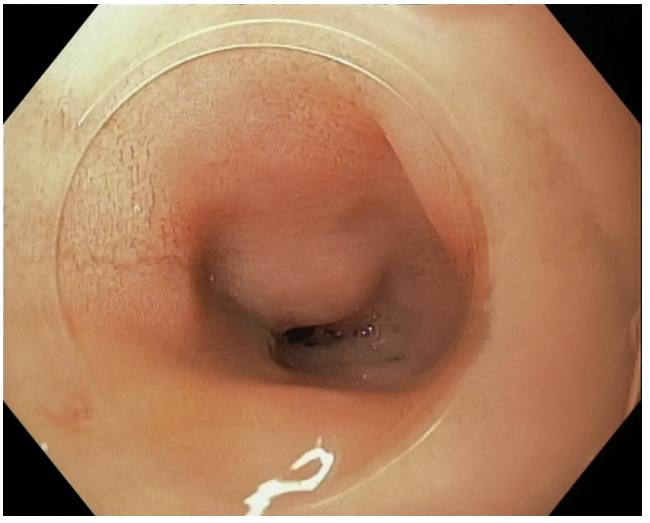

Figure 1. Identification of an intraluminal duodenal diverticulum in the second duodenum.

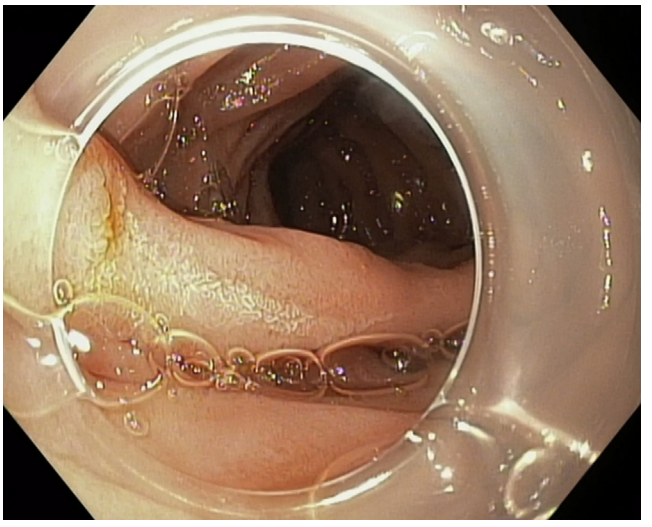

Figure 3. The ampulla was easily identified proximal and medial to the free diverticular wall.

During endoscopic evaluation of our patient, the diverticulum was explored and found to have a small orifice at the dome, which allowed visualization of the distal duodenum (Fig. 2). We acknowledged that her dysphagia was unlikely to be related to this deformity, but we believed that her nausea and postprandial symptoms could be secondary to intermittent duodenal obstruction from food retention within the windsock diverticulum. Thus, we elected to pursue endoscopic intervention. The ampulla was identified proximal to the diverticulum on the medial wall and was completely uninvolved with the windsock diverticulum (Fig. 3). Subsequently, the free diverticular wall was divided with novel submucosal dissection scissors (SB knife; Olympus America, Center Valley, Pa, USA) (Video 1, available online at www.VideoGIE.org). The 5-cm-long wall was divided longitudinally by the use of blended electrocautery current (Endocut I, interval 1, duration 1, effect 1; ERBE, Tubingen, Germany). No immediate or delayed bleeding occurred. At her 2-month follow-up visit, the patient reported resolution of her postprandial abdominal pain and nausea; she continues to have regurgitation and intermittent dysphagia to solid food that likely originates from the pathologic state of her esophagus.

DISCLOSURE

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

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https://doi.org/10.1016/j.vgie.2019.03.005