Stent deployment within a transesophagostomy orifice to treat a postgastrectomy leak

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CASE REPORT

A 39-year-old woman with a history of Williams-Beuren syndrome and a distal esophageal peptic stricture involving the cardia who previously underwent endoscopic balloon dilations underwent a total gastrectomy and distal esophagectomy because of unwillingness to undergo further dilations. Her postoperative course was complicated with hydropneumothorax and an anastomotic leak.

The patient underwent emergent surgery with cervical esophagostomy, surgical washout, jejunostomy, and placement of surgical drains; however, the leak persisted. The patient was referred to us for endoscopic closure (Video 1, available online at www.giejournal.org). Upper endoscopy performed with a conventional gastroscope (Olympus GIF-Q180, Center Valley, Pa, USA) through the esophagostomy orifice revealed a 7-mm esophageal-jejunal anastomotic stricture with an associated leak (Fig. 1) and communication with a large mediastinal fluid collection. A fully covered 125- × 28/23/28-mm self-expandable metal stent (SEMS) (WallFlex; Boston Scientific, Marlborough, Mass, USA) was placed covering the stricture and the leak (Fig. 2), without contrast extravasation. Because of a later increase in the output of the surgical drains, upper endoscopy was repeated, showing lack of apposition between the stent and esophageal mucosa, with contrast extravasation.

A second fully covered 155- × 28/23/28-mm SEMS (WallFlex) was placed with the proximal flange in the transesophagostomy orifice (Fig. 3) and the distal flange covering the proximal flange of the first stent (Fig. 4), without contrast extravasation after deployment and with clinical improvement. The proximal flange of the stent was hand-sutured to the skin. Both SEMSs were removed 6 weeks later; however, a 2-mm leak persisted, with drainage of purulent content (Fig. 5). Contrast instillation confirmed persistence of a 30-mm cavity. A 7F, 4-cm double-pigtail plastic stent (Zimmon Biliary Stent; Cook Medical, Winston-Salem, NC, USA) was placed for 6 weeks for endoscopic internal drainage (Fig. 6).

After plastic stent removal, only the previous stent path filled with contrast, and no further therapies were

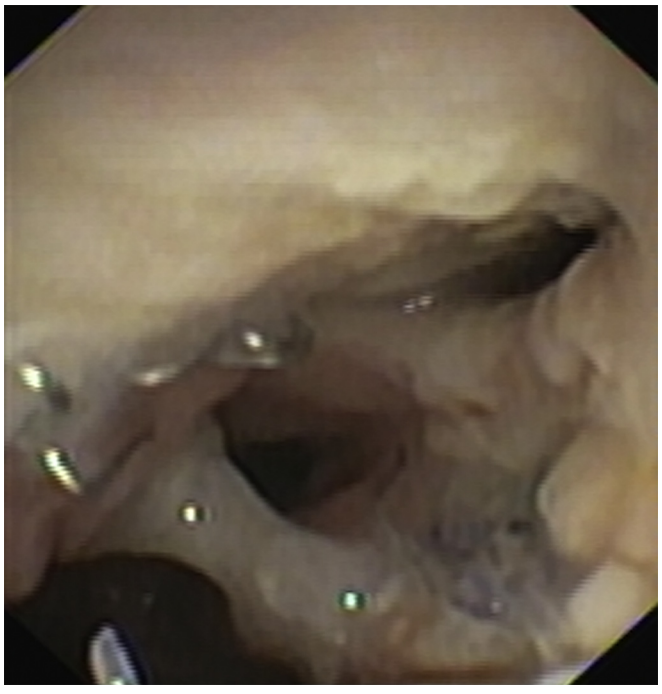

Figure 1. Endoscopic image showing the esophageal-jejunal anastomostic leak with communication with a large collection.

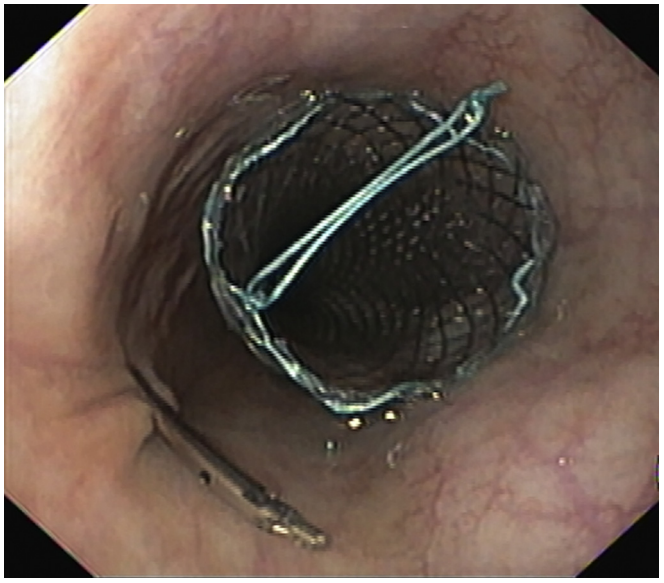

Figure 2. Endoscopic image after deployment of the first fully covered self-expandable metal stent, covering the stricture and the leak. An endoscopic clip used for fluoroscopic deployment can be seen.

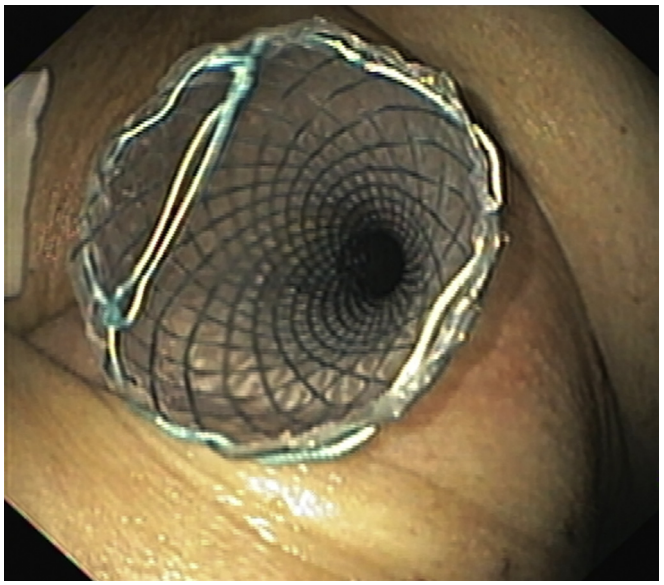

Figure 3. Endoscopic image showing the proximal flange of the second self-expandable metal stent, located in the esophagostomy orifice.

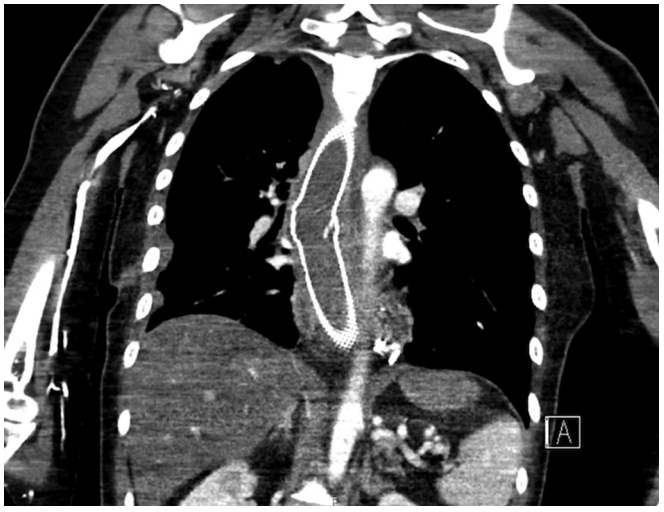

Figure 4. Computed tomography image showing apposition of both stents, with the distal flange of the second stent covering the proximal flange of the first stent.

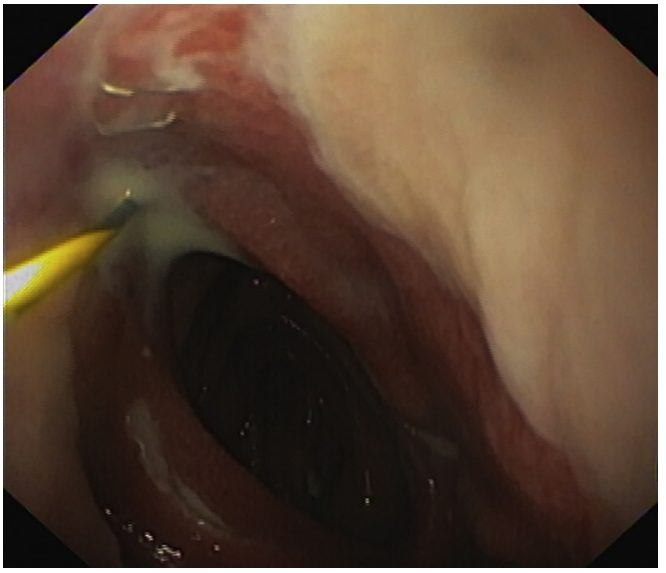

Figure 5. Endoscopic image showing drainage of purulent content from the anastomotic leak.

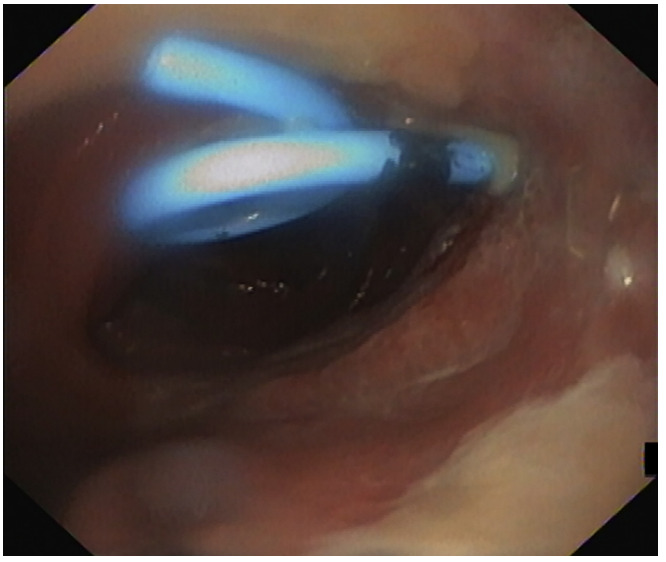

Figure 6. Endoscopic image after placement of a 7F, 4-cm double-pigtail plastic stent for endoscopic internal drainage.

performed. A water-soluble contrast swallow study performed 1 week later showed absence of contrast extravasation. Enteric nutrition through the jejunostomy was maintained during all endoscopic treatment. No adverse events were reported regarding the protruding stent; a cervical ostomy bag was kept in place during treatment to collect oral secretions. The lateral cervical esophagostomy was closed 1 month later, with the patient restarting oral feeding. The patient remains well 6 months later, without recurrence of the leak.

The frequency of postsurgical leaks has been estimated at 3% to 12% after total gastrectomy.[1] Early diagnosis has been reported to improve survival in patients with such leaks,[2,3] although management still remains controversial.[3,4] Several modalities have been used in managing postsurgical leaks, with surgical treatment being associated with higher morbidity and mortality than endoscopic therapy. Often, more than 1 endoscopic approach is used concomitantly, whereas in other cases, therapies are applied sequentially depending on clinical response.[1,2] SEMS placement is the most frequently used alternative, and fully covered SEMSs are the most commonly used.[5] Proper patient selection is important for favorable outcomes. Gastrectomy leaks may be more amenable to multimodality endoscopic

closure; patients with smaller leak diameter and stable clinical condition may also benefit the most from endoscopic therapy.[2] It is important to highlight that surgery still has a key role while addressing postsurgical leaks, both at initial stages (allowing diversion of oral secretions, irrigation, and drainage of intra-abdominal collections) and at later stages if endoscopic treatment is not successful.

Up to 54% of patients might present with leak persistence after first stent placement.[6] However, persistence of leakage after first stent positioning may predict an increased risk of therapeutic failure.[6,7] As often occurs in patients with previous esophageal obstruction, the esophageal lumen was dilated, which explains the lack of apposition between the first stent and the esophageal mucosa. Although the second stent could have been placed just overlapping the previous one, peri-stent leakage would probably persist (type 1 leak)[8] because apposition to the mucosa would be suboptimal. Although antimigration techniques could have been used to minimize migration and maximize sealing, placement of the proximal flange of the stent transesophagostomy would probably maximize stent apposition to the mucosa and completely divert the enteric contents past the leak, because the distal flange of the second stent was covering the proximal flange of the first stent. No further contrast extravasation was observed. After SEMS removal, because the leak persisted with drainage of purulent content, we performed endoscopic internal drainage, with collapse of the cavity.

To the best of our knowledge, this case represents the first patient in whom a stent was deployed via an esophagostomy orifice to treat an anastomotic leak, with the proximal flange of the stent being located within the transesophagostomy orifice.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviation: SEMS, self-expandable metal stent.

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