

An expensive gastric piercing: an embedded lumen-apposing metal stent

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BACKGROUND

Lumen-apposing metal stents (LAMSs) are commonly used for the endoscopic drainage of symptomatic pancreatic fluid collections (PFCs). LAMSs are short, immobile stents with proximal and distal flanges that facilitate close apposition of the gastric or small-bowel wall with the PFC wall. This close apposition is thought to decrease free perforation and help tamponade bleeding from the tract but forms the substrate for a rare delayed adverse event (AE) known as buried stent syndrome, which occurs as early as 5 to 6 weeks after stent placement.¹⁻³ Buried stent syndrome, wherein tissue overgrowth occurs around the LAMS and leads to complete stent obscuration on endoscopic examination, is thought to occur when a LAMS has been left in situ after PFC resolution. In this case, we discuss a patient with a distally migrated LAMS that became embedded, but not buried, in the gastric mucosa with both flanges and ends visible within the gastric lumen.

CASE

A 68-year-old man with symptomatic pancreatic walled-off necrosis underwent successful EUS-guided transgastric drainage with a 15- × 10-mm LAMS (AXIOS; Boston Scientific, Marlborough, Mass, USA) in 2015. After symptom resolution, he did not return for LAMS removal. In 2022, a CT scan of the abdomen performed for symptoms of gastric outlet obstruction demonstrated an incidental retained LAMS (Fig. 1).

PROCEDURE

Endoscopic evaluation with a GIF-H190 Gastroscope (Olympus, Center Valley, Penn, USA) noted that the LAMS

Abbreviations: AE, adverse event; LAMS, lumen-apposing metal stent; PFC, pancreatic fluid collection.

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Figure 1. Retained lumen-apposing metal stent within the stomach on a CT scan: an axial view.

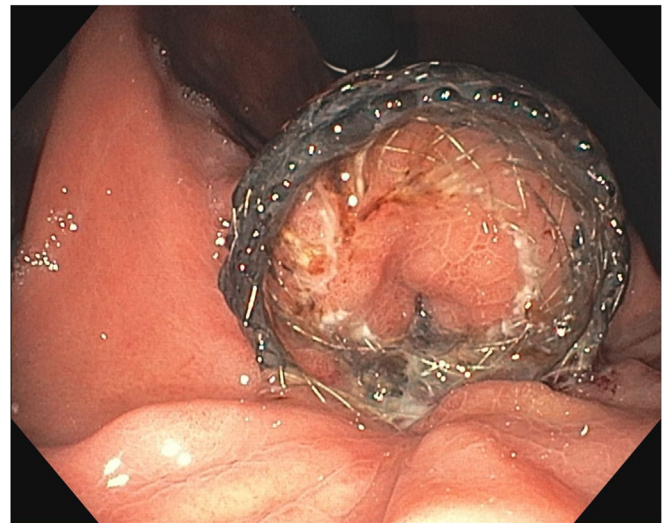


Figure 2. Endoscopic view of the embedded lumen-apposing metal stent with tissue ingrowth obstructing the stent lumen.

had embedded into the gastric mucosa. Tissue ingrowth circumferentially around the stent saddle (Figs. 2 and 3) precluded easy stent removal. A coaxial 15- × 10-mm AXIOS

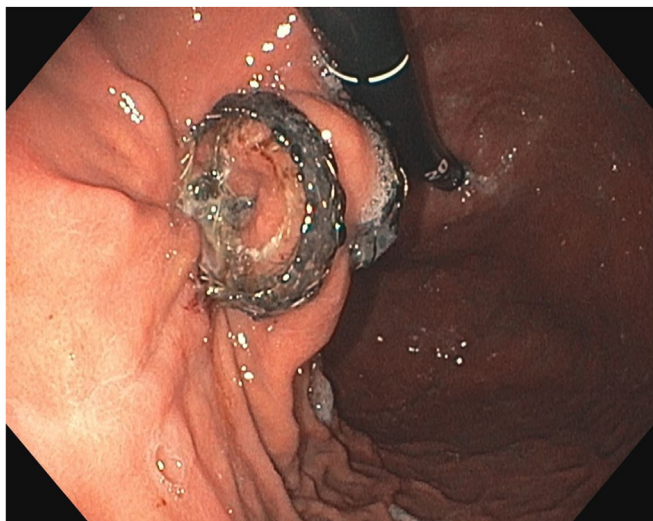


Figure 3. Endoscopic view of the embedded lumen-apposing metal stent with tissue growth circumferentially around the stent saddle.

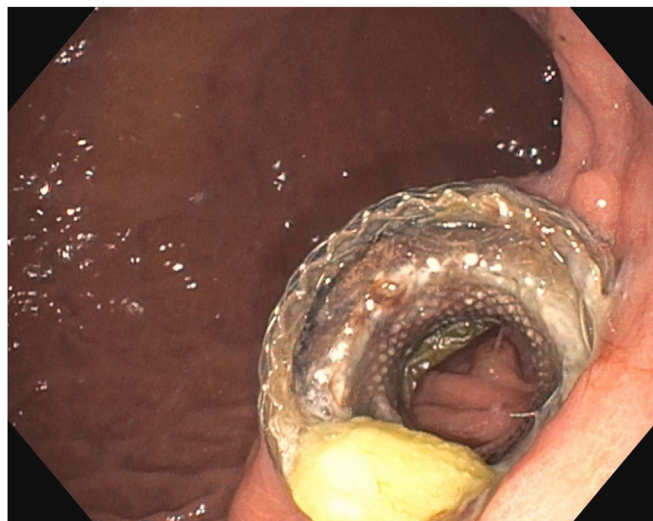


Figure 5. Desired tissue necrosis seen between the 2 lumen-apposing metal stents on repeat endoscopy.

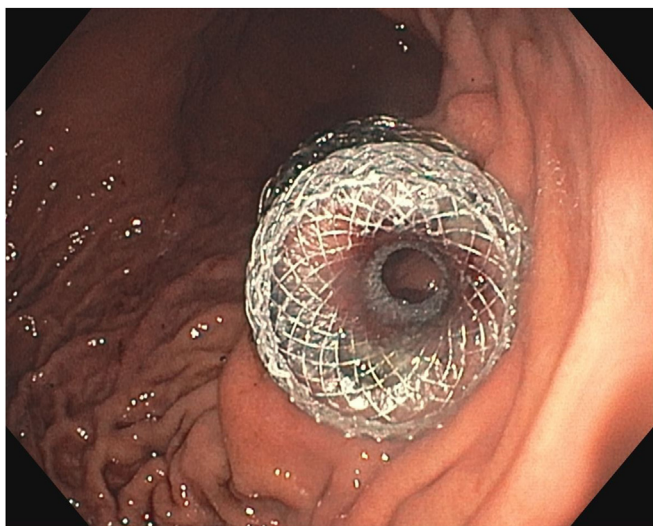


Figure 4. Endoscopic view following deployment of a coaxial lumen-apposing metal stent (LAMS) through the original LAMS to induce pressure necrosis (the stent-in-stent technique).

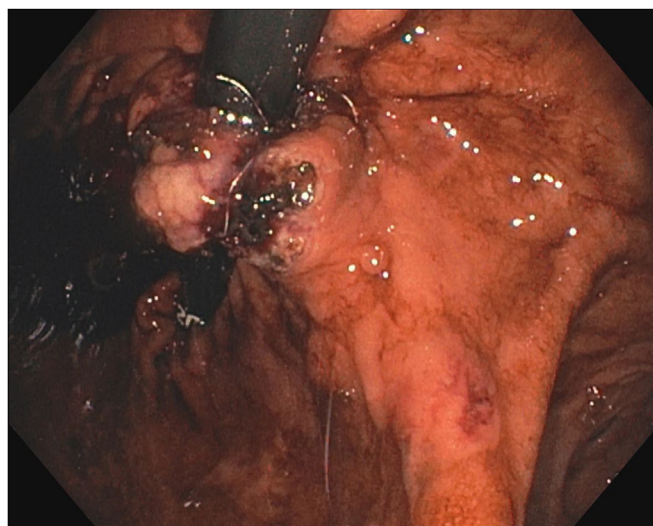


Figure 6. Stent intubation with the gastroscop prior to tissue and stent transection with the gastroscop shaft.

stent was deployed through the indwelling LAMS to induce pressure necrosis (Fig. 4) for subsequent stent removal. The patient had a moderate duodenal stenosis from prior pancreatitis that was dilated to 15 mm with symptom resolution. A repeat EGD after 3 months confirmed desired tissue necrosis with removal of the new LAMS (Fig. 5). After needle-knife incision (Boston Scientific) and argon plasma coagulation (CONMED, Largo, Fla, USA) of the mucosa wrapping around the stent, rat tooth and alligator forceps (Raptor Grasping Device; STERIS, Mentor, Ohio, USA) retrieval resulted in LAMS fragmentation. The remaining embedded portion of the LAMS was intubated with the gastroscop, and the stent and tissue transected with the scope shaft (Fig. 6). Complete LAMS retrieval was achieved

with cold and hot snare resection (Lariat Snare; STERIS), and all fragments were retrieved with a Roth Net (STERIS) (Fig. 7; Video 1, available online at www.videogie.org).

OUTCOME AND DISCUSSION

This case highlights an embedded, rather than buried, LAMS. In this case, the LAMS had migrated out of the resolved collection, but the stent shaft became embedded in the gastric mucosa with both ends of the stent visible in the gastric lumen. The patient did well postprocedurally after endoscopic LAMS retrieval.

Buried stent syndrome is a rare delayed AE of LAMs, occurring in 2.1% of patients,⁴ and refers to a scenario in



Figure 7. Complete retrieval of both the intact newer and fragmented older lumen-apposing metal stents.

which tissue overgrowth around the proximal flange covers the stent lumen, with complete stent obscurement on endoscopic examination. In these cases, successful removal of the buried LAMS has been achieved with transmural tract balloon dilation followed by rat tooth forceps extraction.¹⁻³ In cases of LAMS migration into the PFC with tract closure, cannulation and dilation of the transmural tract under EUS and fluoroscopic guidance and potential placement of a second LAMS may be required before attempted LAMS removal with rat tooth forceps.⁵ Though

successful in this case, use of a LAMS to induce tissue necrosis in a stent-in-stent technique is not currently a Food and Drug Administration–approved indication.

Timely removal of LAMSs following PFC resolution is necessary to avoid delayed AEs such as bleeding, stent migration, buried stent syndrome, and an embedded stent.

DISCLOSURE

Dr Chandrasekhara is a consultant for Boston Scientific and Covidien LP and is a shareholder of Nevekar. Dr Wang did not disclose any financial relationships.

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