



Transjejunal drainage of an infected postsurgical fluid collection using a 6-mm lumen-apposing metal stent

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BACKGROUND

Postsurgical fluid collections (PSFCs) can be a marked source of morbidity for patients, but advances in therapeutic endoscopy have allowed for endoscopic modalities of drainage to become more accessible.¹ Prior studies have established the efficacy and safety of lumen-apposing metal stents (LAMSs) in PSFCs.¹⁻⁴ In the video accompanying this case report (Video 1, available online at www.giejournal.org), we demonstrate the transjejunal placement of a 6-mm LAMS for drainage of an infected postsurgical fluid collection.

CASE

A 54-year-old man presented with obstructive jaundice, and ERCP demonstrated an intra-ampullary lesion (Fig. 1A and B). He underwent a Whipple procedure and was found to have adenocarcinoma arising from an intra-ampullary papillary-tubular neoplasm. On postoperative day (POD) 6, he developed leukocytosis, and a CT scan demonstrated a 6.6- × 1.8-cm fluid collection in the retroperitoneum not accessible for percutaneous drainage (Fig. 1C). EUS-guided aspiration without stent placement was performed by advancing the linear echoendoscope deep (50 cm) into the afferent limb and sampling the collection with a 19-gauge needle, with which 25 mL of turbid, purulent, and slightly viscous fluid was removed and sent for microbiology. There were no white blood cells (although the patient had been on antibiotics), but *Enterobacter* and *Streptococcus* species were identified. The collection completely collapsed. On POD 9, he developed signs of worsening infection, and imaging showed a recurrent collection. Given the difficulty of passing the echoendoscope deep into the afferent limb and a fresh postsurgical tract and anastomosis, the decision was made to place a small-caliber cautery-enhanced LAMS for more durable drainage.

Procedure

On POD 10, a linear echoendoscope was advanced 50 cm into the afferent limb (Video 1, available online at www.giejournal.org). The recurrent 7.2- × 5.4-cm collection was identified (Fig. 1D), and aspiration was performed with a 22-gauge aspiration needle, confirming this was the targeted collection. A 6- × 8-mm LAMS was

advanced into the collection with electrocautery (Fig. 1E). As can be seen on fluoroscopic image in Figure 1F, given the U-shape of the echoendoscope, we were concerned that advancement of the standard LAMS (10 mm with a 10.8F catheter) may be difficult, and deployment may be challenging. It was felt the 6-mm LAMS with a 9F catheter diameter would more easily pass through the channel and provide better maneuverability during puncture and deployment. After deployment of the distal flange, a 0.035-inch × 450-cm straight guidewire was coiled into the collection (Fig. 1F). The proximal flange was deployed, and pus emanated from the collection (Fig. 1G). Dilation with a 6- to 8-mm balloon was performed within the stent to 6 mm, and a 7F × 5-cm double pigtail stent was deployed within the LAMS (Fig. 1H). A CT scan on POD 24 confirmed resolution of the collection (Fig. 1H). On POD 28, the patient underwent repeat endoscopy. There was marked difficulty in advancing (upper endoscope, pediatric colonoscope, and linear echoendoscope) to the site of drainage in the afferent limb owing to collapse of the collection and jejunal displacement, possibly due to collapse of the cavity. Ultimately, the collection was reached with an adult colonoscope, and a clip was placed for fluoroscopic and endoscopic marking in case after removing the stents and on future endoscopies we were unable to reidentify the location to interrogate the cavity with contrast. The double pigtail stent was then removed. A sphincterotome was used to cannulate and inject contrast into the LAMS, which demonstrated no appreciable cavity beyond the distal flange of the LAMS, and the LAMS was removed with rat-tooth forceps. Clinically, the patient had resolution of infection and was discharged from the hospital. At the 3-month postoperative follow-up, he was doing well on chemotherapy and had no imaging evidence of recurrent collection.

CONCLUSIONS

Postsurgical fluid collections can pose challenges in management. Here, we present the successful use of a 6-mm LAMS for transjejunal drainage of an infected collection after recent surgery. A LAMS was selected owing to rapid recurrence after EUS-guided aspiration, and to reduce the risks of multiple wire exchanges and repeat

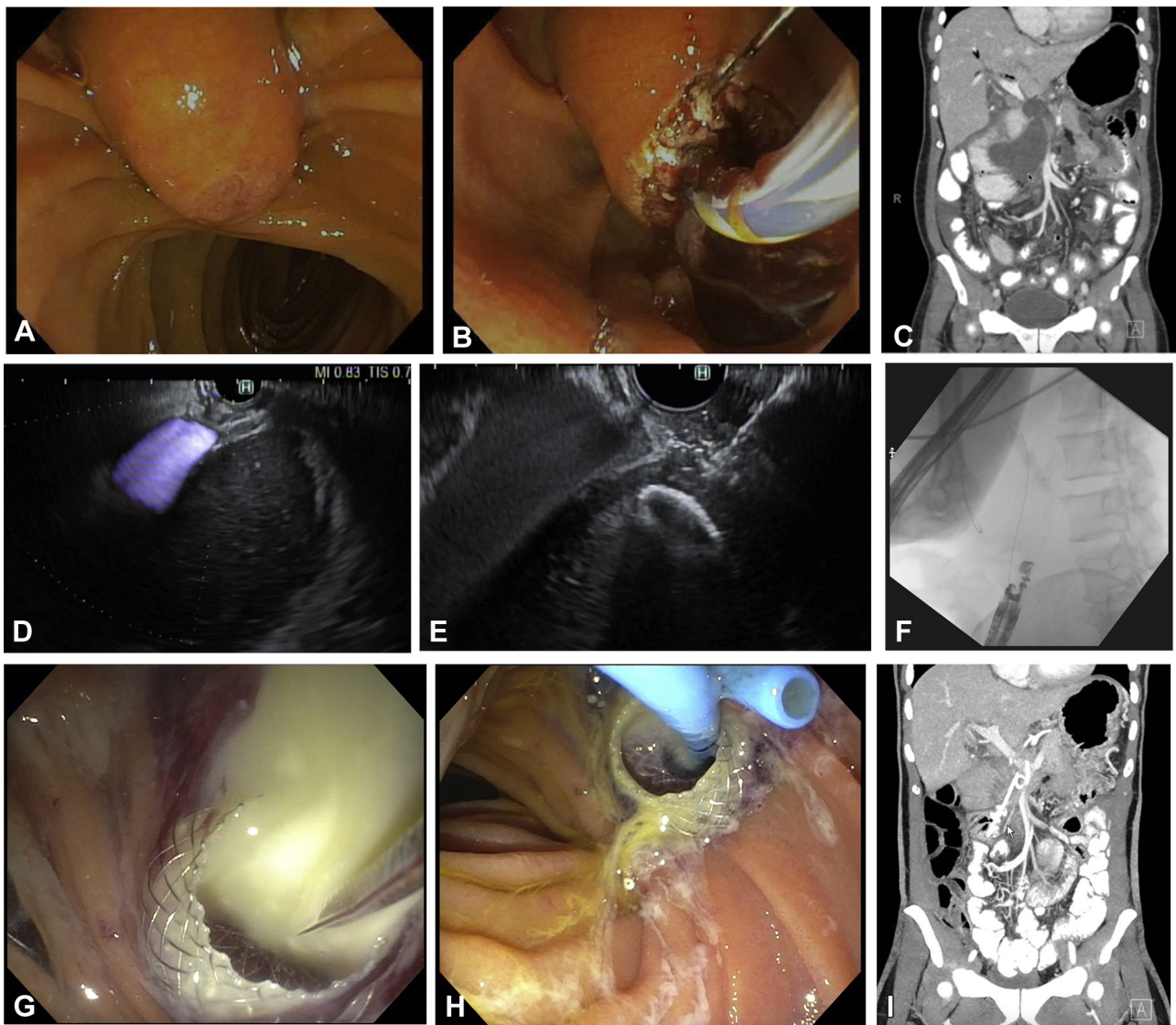


Figure 1. The successful placement of a 6-mm LAMS for transjejunal drainage of an infected collection after recent surgery. **(A)** Bulging ampulla seen with duodenoscope. **(B)** Evidence of intra-ampullary mass lesion during sphincterotomy. **(C)** Postsurgical fluid collection seen on CT (indicated by *arrow*). **(D)** Postsurgical fluid collection identified on EUS, with echoendoscope in the afferent limb, adjacent to the portal vein. **(E)** Deployment of distal flange of LAMS within collection. **(F)** Fluoroscopic image demonstrating guidewire placement into the cavity, and U-shaped EUS position. **(G)** Pus seen emanating from collection after successful LAMS placement. **(H)** Double pigtail plastic stent placement within LAMS. **(I)** CT scan 2 weeks postprocedure showing resolution of collection. LAMS, Lumen-apposing metal stent.

manipulation across a recent anastomosis. The collection was located deep in the afferent limb and was not easily accessible, making repeat drainages cumbersome. Use of the 6-mm LAMS provided a 1-step procedure in an unsteady location deep in the afferent limb. Overall, the 6-mm LAMS provided technical ease and excellent drainage and minimized the risk of adverse events given the proximity of the cavity to the portal vein. In this case, the cautery-enhanced LAMS provided a 1-time, 1-step safe drainage, with resolution of infection and collection.

Most drainages using LAMSs have been transgastric, transduodenal, and transrectal.¹ We demonstrate successful placement of a transjejunal LAMS for drainage of

PSFC. While drainage of PSFCs is well established and transjejunal placement is common for EUS-directed transgastric ERCP procedures, the use of the 6-mm LAMS through transjejunal placement for management of a PSFC does open the spectrum to endoscopic management of additional smaller fluid collections. Previous reports have used larger LAMSs for drainage, with lumen diameters of at least 10 mm.⁵ More recently, a 6-mm LAMS has been developed.⁶ Lastly, we demonstrate efficacy of early drainage and potentially smaller collections. A multicenter study evaluating LAMSs for drainage of PSFCs noted an average of 37 postoperative days.¹ Owing to concerns for the potential of adverse events with the adjacent portal

vein as the cavity collapsed, as well as migration of the LAMS into the abscess cavity, we elected to place a double pigtail stent to allow for additional stability. It is unclear whether the 6-mm LAMS is liable to migrate; however, given it has smaller phalanges, the theoretical risk does exist. The use of LAMSs for drainage of postoperative collections is complex, but we demonstrated technical and clinical success with an excellent safety profile.

DISCLOSURE

Dr Amin is a consultant for Boston Scientific. Dr Kumar, Dr Bballa, and Dr Datta disclosed no financial relationships. All authors declare no competing interests.

Abbreviations: LAMS, lumen-apposing metal stent; POD, postoperative day; PSFC, postsurgical fluid collection.

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