



EUS-guided gastrojejunostomy using a pre-existing PEG with jejunal extension for target bowel opacification

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INTRODUCTION

Malignant disease at the level of the duodenum can result in gastric outlet obstruction (GOO). EUS-guided gastrojejunostomy (EUS-GJ) has emerged as a favorable alternative to surgical gastrojejunostomy and enteral stenting for the management of GOO.^{1,2} In EUS-GJ, a saline-based solution (with or without contrast dye) is typically instilled through a nasobiliary drain into the jejunum to opacify and distend the target jejunal limb prior to lumen-apposing metal stent (LAMS) deployment.³

CASE DESCRIPTION

A 71-year-old woman with a medical history notable for ischemic cardiomyopathy status after orthotopic heart transplant and bilateral hydronephrosis status after nephrostomy tube placement presented with abdominal pain, nausea, and vomiting. A CT scan on admission demonstrated GOO, a normal-appearing pancreas, and mild circumferential bladder wall thickening (Figs. 1 and 2). Upper endoscopy revealed narrowed duodenum secondary to extrinsic compression. Given the etiological uncertainty of the acquired duodenal stenosis, a fully covered metal stent was placed across the duodenum. Biopsies were unrevealing. Two days later, the patient developed new liver test abnormalities (alanine aminotransferase 321 U/L, aspartate aminotransferase 345 U/L, alkaline phosphatase 644 U/L, and total bilirubin 3.8 mg/dL). Repeat CT showed new common bile duct dilation to 15 mm, raising concern for stent-related biliary obstruction (Fig. 3). The

duodenal stent was removed, resulting in normalization of the liver tests. A PEG tube with jejunal extension (PEG-J) was placed for gastric venting and jejunal feeding.

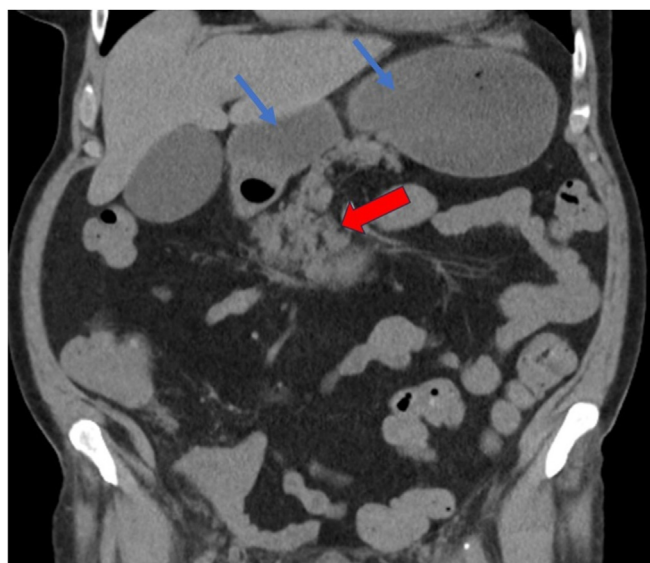


Figure 1. Dilated stomach (blue arrows) secondary to gastric outlet obstruction and normal-appearing pancreas (red arrow).

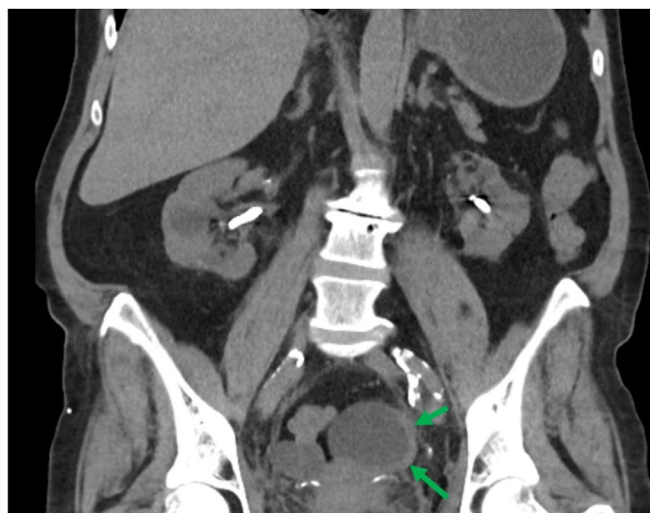


Figure 2. Mild circumferential bladder wall thickening (green arrows).

Abbreviations: EUS-GJ, EUS-guided gastrojejunostomy; GOO, gastric outlet obstruction; LAMS, lumen-apposing metal stent; PEG-J, percutaneous endoscopic gastrostomy with jejunal extension.

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Figure 3. Fully covered duodenal stent in situ (*green arrow*) with dilated common bile duct to 15 mm (*red arrows*).

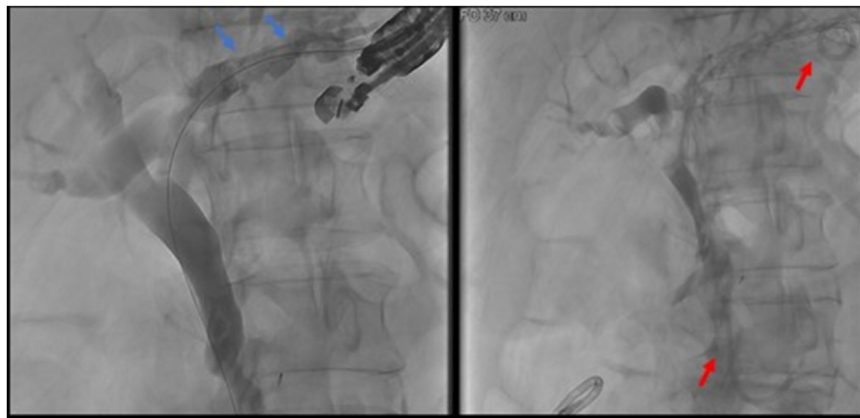


Figure 4. EUS-guided left hepaticogastrostomy using a 10- × 80-mm biliary stent (*blue arrows*) with a coaxial double-pigtail stent (*red arrows*).

Two weeks later, liver tests again increased with associated biliary dilation. Extensive work-up did not identify a definitive etiology for her biliary obstruction or duodenal stenosis. At the same time, the patient expressed a strong preference to be able to eat. Therefore, following multidisciplinary discussion, the decision was made to pursue both EUS-hepaticogastrostomy and EUS-GJ to bypass her biliary and duodenal obstructions.

First, an EUS-guided left hepaticogastrostomy was performed using a 10- × 80-mm fully covered self-expandable metal stent with antimigration flaps (VIABIL; Gore Medical, Flagstaff, Ariz, USA) with a coaxial double-pigtail stent (Zimmon Biliary Stent; Cook Medical, Winston-Salem, NC, USA) (Fig. 4). Next, given that the patient had a pre-existing PEG-J tube, the jejunal extension tubing was used to instill contrast into the target limb of jejunum in lieu of a nasobiliary drain (Fig. 5). With the jejunal limb distended, a 15- × 10-mm (which was our institutionally preferred size at the time of the procedure) electrocautery-enhanced LAMS (AXIOS; Boston Scientific, Marlborough, Mass, USA) was advanced into the

jejunum using the wireless free-hand LAMS insertion technique and deployed under endosonographic vision (Fig. 6; Video 1, available online at www.videogie.org).

Following the procedure, the patient was transitioned to a stent-based diet, which she tolerated well. She was ultimately diagnosed with metastatic urothelial carcinoma resulting in malignant extrinsic compression of the duodenum. One month later, the patient was admitted for a distal small-bowel obstruction secondary to metastatic disease (unrelated to the prior procedures) and died.

DISCUSSION

Urothelial carcinoma typically metastasizes to the lungs, bones, and liver.⁴ Metastatic disease to the duodenum is rare but should be considered as a potential cause when a pancreaticobiliary source cannot be identified.⁵⁻⁷ EUS-GJ has gained favor in the management of GOO, particularly when adverse events of

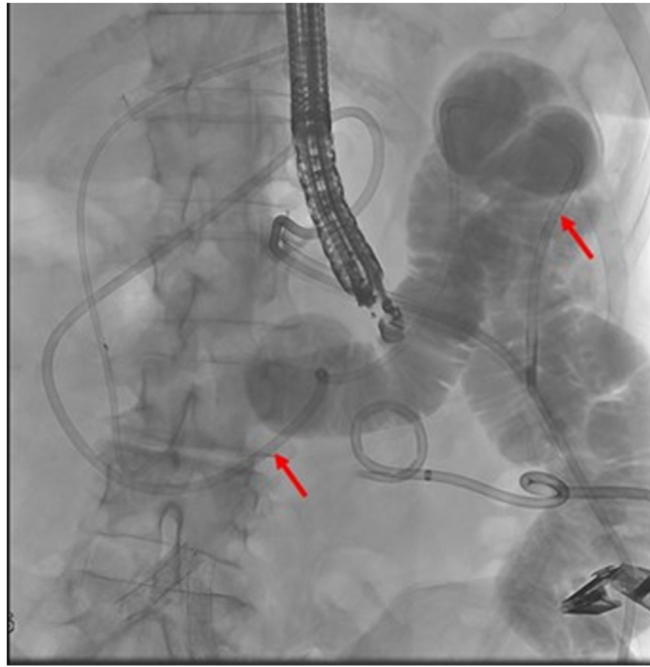


Figure 5. Instillation of contrast material through the pre-existing jejunal extension tubing of the PEG-J (red arrows). PEG-J, Percutaneous endoscopic gastrostomy with jejunal extension.

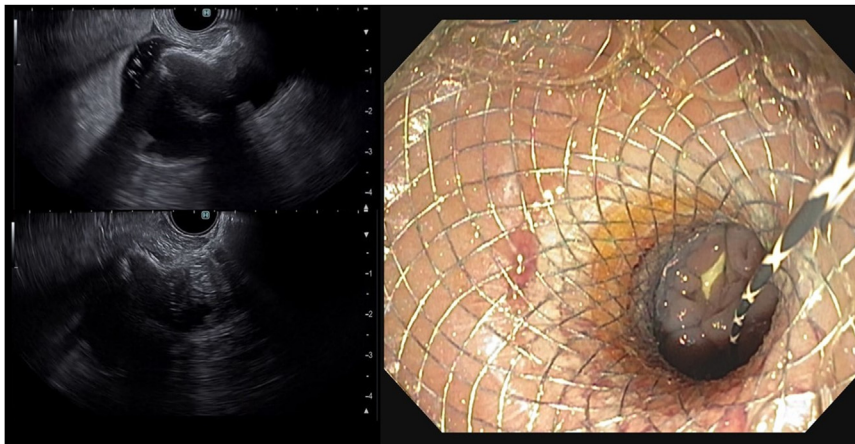


Figure 6. Deployment of the lumen-apposing metal stent in the jejunum under endosonographic guidance.

enteral stenting are anticipated.^{1,2,8} In patients with pre-existing jejunal access (such as PEG-J), this access can be leveraged to instill a saline-based solution, reducing procedural time, complexity, and equipment cost.

DISCLOSURE

Dr Law is a consultant for Boston Scientific, Medtronic, and Conmed, and he receives research support from

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