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# Tightening the purse strings: a stent-free path to a lasting endoscopic gastroenterostomy

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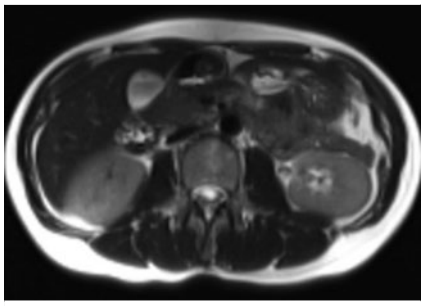
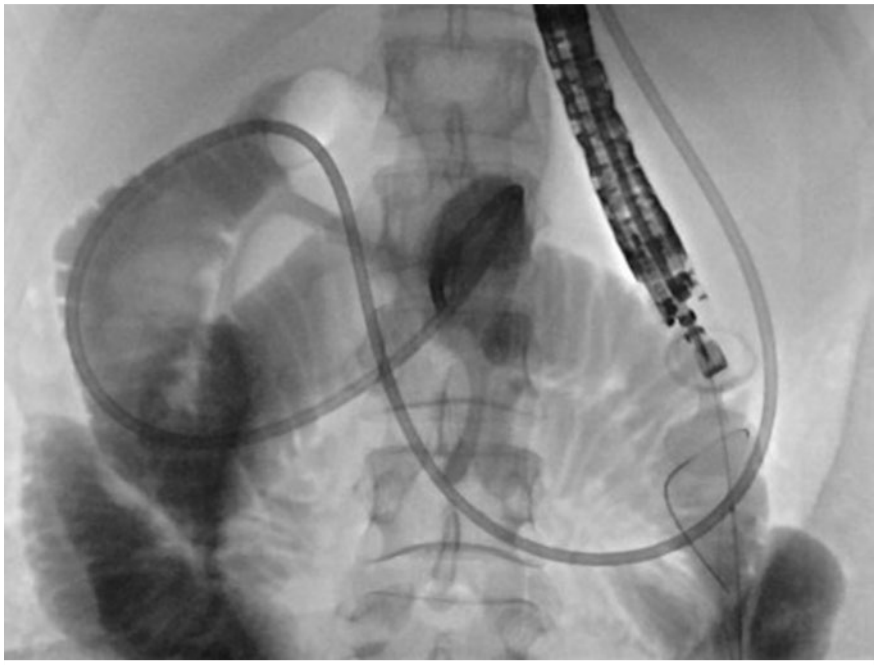


▶ **Fig. 1** Abdominal magnetic resonance imaging revealed duodenal compression by the superior mesenteric artery, consistent with superior mesenteric artery syndrome.

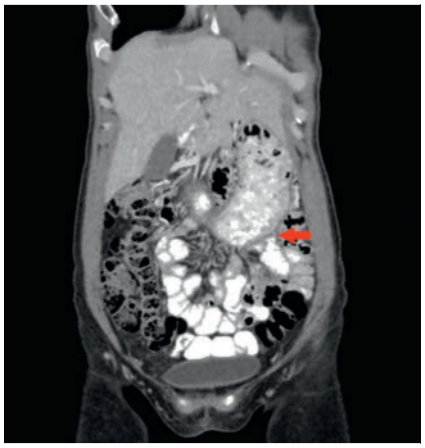
A 42-year-old woman presented with epigastric abdominal pain for several years. An extensive workup revealed duodenal compression on esophagogastroduodenoscopy (EGD) and superior mesenteric artery syndrome on imaging (▶ **Fig. 1**). Despite several months of conservative management, the patient remained symptomatic. She deferred surgery and was then offered an endoscopic ultrasound-guided gastroenterostomy (EUS-GE) (▶ **Video 1**).

A successful EUS-GE with placement of a 15 mm × 10 mm lumen-apposing metal stent (LAMS) (▶ **Fig. 2**) resulted in clinical relief of her symptoms. LAMS was upsized to 20 mm × 10 mm on repeat endoscopy 4 months later.

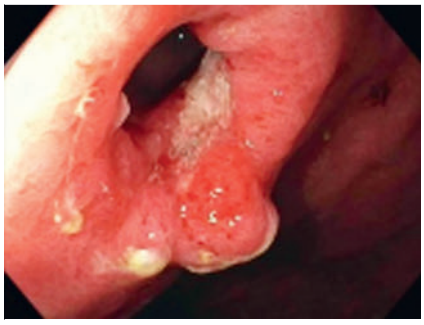
The patient's preference was to avoid further stent replacements and therefore the decision was made to suture the gastroenterostomy anastomosis for stent-free patency on repeat endoscopy. Using the OverStitch endoscopic suturing system (Apollo Endosurgery, Austin, Texas, USA), one running suture was placed with eight bites in a purse-string circumferential fashion. To secure the preferred luminal diameter of the gastroenterostomy tract, the suture was cinched around a balloon dilator inflated to 18 mm. Finally, to maintain gastroenterostomy patency as the mucosa healed, a 20 mm × 10 mm LAMS was temporarily placed (▶ **Video 1**).



▶ **Fig. 2** Fluoroscopy image of endoscopic ultrasound-guided creation of a gastroenterostomy with a 15 mm × 10 mm lumen-apposing metal stent.



▶ **Fig. 3** Abdominal computed tomography scan with oral contrast revealed a patent gastroenterostomy anastomosis after removal of the lumen-apposing metal stent.



▶ **Fig. 4** Endoscopy 4 months after stent removal revealed a patent gastroenterostomy anastomosis.

LAMS was removed 3 months later, and the gastroenterostomy was maintained stent-free. Computed tomography scan with oral contrast 2 months after stent removal confirmed patent gastroenterostomy (▶ **Fig. 3**). A repeat EGD after 4 months affirmed stent-free gastroenterostomy anastomosis patency (▶ **Fig. 4**). Over 1.5 years of clinical follow-up, the patient remained symptom-free with a patent gastroenterostomy anastomosis.

**Video 1** Initial endoscopic ultrasound-guided gastroenterostomy, followed by removal of the lumen-apposing metal stent, and endoscopic suturing of the gastroenterostomy anastomosis for creation of a stent-free anastomosis.

Our case demonstrates a novel technique to transition an endoscopically created gastroenterostomy to a stent-free approach via suturing the anastomosis in a purse-string fashion. This approach overcomes a current limitation of the technique, typically requiring multiple stent exchanges and in situ stent retention to maintain patency of the anastomosis. Transitioning to a stent-free anastomosis has the potential to reduce complications, decrease healthcare utilization costs, and enhance patients' quality of life.

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## Conflict of Interest

R. Z. Sharaiha: Boston Scientific, Olympus, Cook Medical. A. Rizvi, O. Saab, S. M. Salgado, M. Abu-Hammour, and Q. M. Dawod declare that they have no conflict of interest.

## The authors


**Anam Rizvi[1], Omar Saab[2], Sanjay M. Salgado[3], Mohamed Abu-Hammour[4], Qais M. Dawod[5], Reem Z. Sharaiha[1]**

1 Department of Gastroenterology and Hepatology, NewYork Presbyterian – Weill Cornell Medical Center, New York, United States
2 Hospital Medicine Department, Cleveland Clinic, Cleveland, United States
3 Atlantic Medical Group, Summit, United States
4 Cleveland Clinic Fairview Hospital, Cleveland, United States
5 Garnet Health Medical Center, Middletown, United States


## Corresponding author


**Anam Rizvi, MD**
Department of Gastroenterology and Hepatology, NewYork Presbyterian – Weill Cornell Medical Center, 525 E 68th Street, New York, NY, 10065-4870, United States
anam.rizvi017@gmail.com


## Bibliography


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