A Novel Application of Double-Pigtail Plastic Stents for Endoscopic Treatment of Stenosis and Anastomotic Leaks Following Bariatric Surgery: Endoluminal Placement to Facilitate Gastrointestinal Flow

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Background

- Failure of anastomotic integrity is a highly-dreaded complication of bariatric surgery, associated with increased morbidity, mortality, and prolonged hospital stays.
- Transmural double pigtail plastic stents (DPPS) for treatment of anastomotic leaks have shown high success rates (>75%), while being cost-effective and well-tolerated.
- DPPS have been endoscopically deployed across staple-line leaks following laparoscopic sleeve gastrectomy (LSG), combined with dilation of distal sleeve stenoses to promote internal drainage AND intraluminal flow.

Aim

- To assess the potential beneficial role for endoluminal DPPS placement placement in the treatment of complex anastomotic leaks and luminal stenoses following bariatric surgery.

Case Description/Results

Case 1

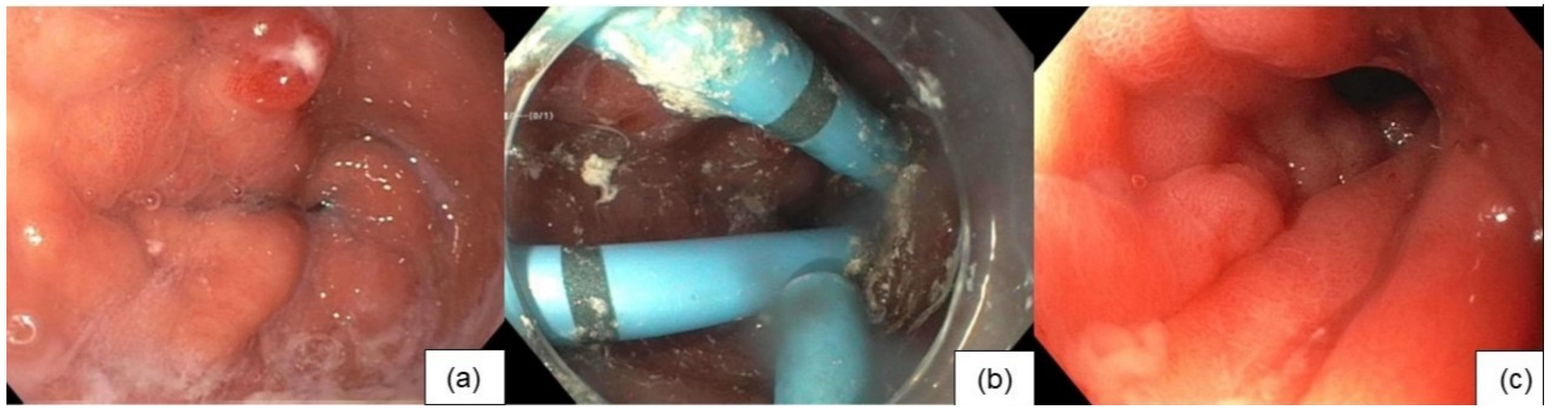
- 50-year-old female POD 5 from LSG and duodenal switch presented with symptomatic gastric sleeve stenosis.
- Two 10Fr x 12cm DPPS were endoscopically placed spanning the stenosis, pylorus, and duodenal-ileal anastomosis with instant symptom relief.
- DPPS were removed on POD 65 with continued symptom resolution.

Case 2 & 3

- 67-year-old and 70-year-old females POD 12 and POD 14, respectively, from duodenal switch with duodeno-ileal anastomotic leak and stricture.
- For both patients, two 7Fr x 3cm DPPS were deployed across the leak site, and a third 10 Fr x 3cm DPPS was placed across the anastomosis.
- All stents were removed on POD 45 and POD 65, respectively, following leak resolution.

Case 4

- 34-year-old female POD 3 from complex gastric bypass reversal and duodenal switch complicated by large staple line leak proximal to stenosis.
- A 10Fr x 3cm DPPS was placed across the leak site, and a 10Fr x 9cm DPPS was placed across the gastric stenosis and duodeno-ileal anastomosis. Serial dilation of stenosis began on POD 45.
- All stents were removed on POD 95 with resolution of leak and stenosis.



a) Endoscopic image of moderate stenosis of the mid gastric sleeve POD 5 precluding safe dilation

b) Two intraluminal DPPS traversing sleeve stricture with symptom resolution

c) Improved sleeve stenosis and continued symptom resolution following DPPS removal

Discussion & Conclusions

- While transluminal DPPS placement across anastomotic leaks has been previously shown to be an effective treatment option, this case series suggests that intraluminal DPPS placement may also be clinically beneficial by promoting GI flow and ultimately diverting away from leak site.
- Intraluminal DPPS can be used singly or in combination with transluminal DPPS.
- Applicable scenarios include newly post-operative gastric sleeve stenosis or kinks where dilation is too high-risk and duodenal anastomotic leaks with concomitant anastomotic stricture.