# Endoscopic Reversal of Roux-en-Y Gastric Bypass

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## Background

Laparoscopic Roux-en-Y gastric bypass (LRYGB) is a safe and effective procedure for the treatment of morbid obesity and related metabolic comorbidities. However, in certain rare circumstances, gastric bypass reversal is required, most commonly for malnutrition, severe dumping syndrome, postprandial hypoglycemia, and recurrent ulceration.[1] Traditionally, reversal is accomplished surgically via creation of a gastro-gastric anastomosis between the gastric pouch and remnant stomach.

Endoscopic access into the remnant stomach using lumen-apposing metal stents (LAMS) is increasingly being used as temporary access for endoscopic biliary interventions in patients with LRYGB anatomy. Variations on this same technique have been described as an option for permanent bypass reversal.[2,3,4,5]

Here we present our institutional approach for permanent gastric bypass reversal with sequential endoscopic deployment of dual LAMS, which to our knowledge has not yet been described.

## Technique

1. Initial EGD:
   - Endoscopic ultrasound (EUS) to identify remnant stomach from gastric pouch
   - Needle access and contrast injection into remnant stomach which is then distended with water
   - Wire access into remnant stomach under fluoroscopic guidance
   - LAMS deployment between gastric pouch and remnant stomach
2. Second EGD 4-6 weeks later: second gastrogastric LAMS placement adjacent to previously placed stent (Fig. 1 & 2)
3. Third EGD 4-6 weeks later: removal of both stents and division of intervening septum with endoscopic cautery knife (Fig. 3) resulting in single large gastrogastric anastomosis (Fig. 4)

- Some authors describe endoscopic suture closure of the Roux limb.[5] Thus far in our experience we have left the gastrojejunostomy patent, with the expectation that it may stenose over time.

## Case Presentations

Case #1: A 41-year-old female with a history of remote LRYGB presented with recalcitrant marginal ulceration at her gastrojejunostomy, resulting in chronic abdominal pain and PO intolerance. She also had a complex abdominal surgical history including a recurrent ventral incisional hernia and mesh explantation for mesh infection. Endoscopic bypass reversal was pursued, and at the time of the second stent placement, the ulceration and stenosis demonstrated improvement, a result which has been correlated in other case reports.[4]

Case #2: A 44-year-old female with a history of LRYGB presented with persistent nausea and PO intolerance without obvious anatomic explanation. Endoscopic bypass reversal was pursued. The patient noted progressive improvement in her symptoms with each subsequent procedure as more of her PO intake was able to pass via the remnant stomach (Fig. 5).

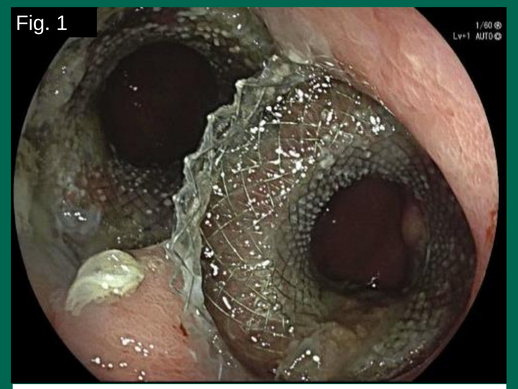


Fig. 1

Dual gastrogastric lumen-apposing metal stents viewed from gastric pouch. (Case #1)



Fig. 2

Dual gastrogastric stents on retroflexed view from remnant stomach. (Case #1)

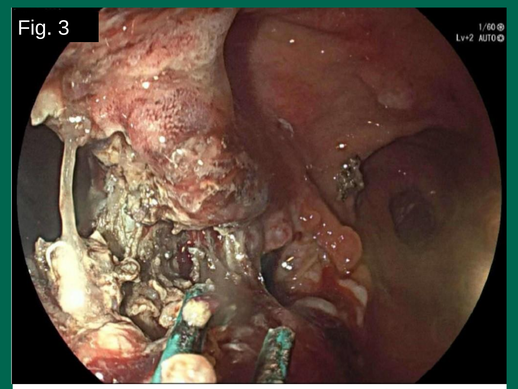


Fig. 3

Division of intervening septum after removal of stents. (Case #2)

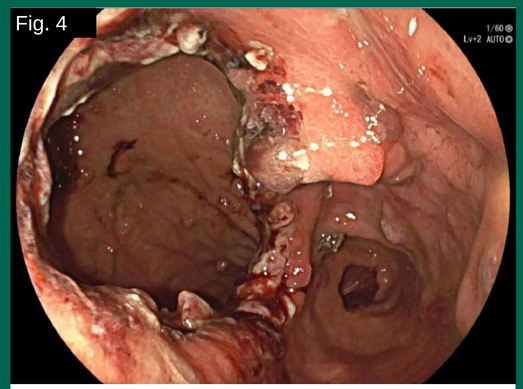


Fig. 4

Gastrogastric anastomosis following stent removal and division of septum. (Case #2)

## Conclusion

The sequential dual LAMS technique presented here is an effective technique for durable endoscopic gastric bypass reversal which allows for formation of a larger gastrogastric anastomosis than with single stent placement alone.

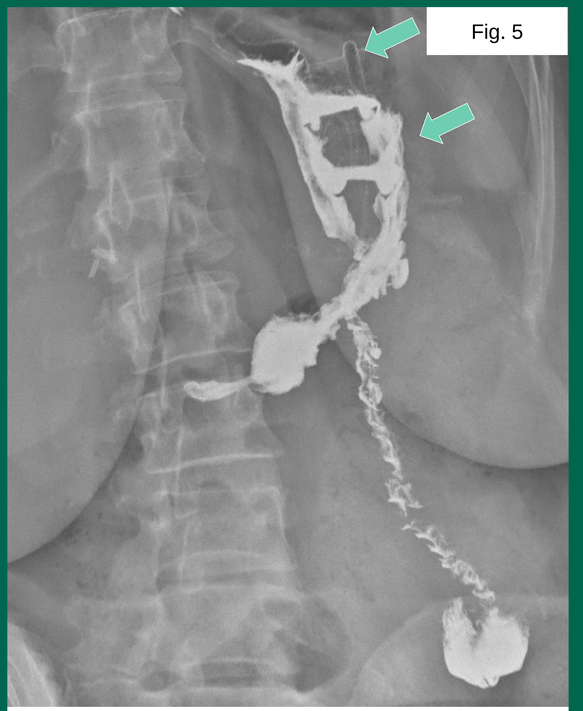


Fig. 5

Upper GI study demonstrating contrast emptying from gastric pouch into Roux limb and via both stents into remnant stomach after second-stage procedure. (Case #2)

## References

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