



Successful Treatment of “Candy Cane” Syndrome Through Endoscopic Gastrojejunal Anastomosis Revision

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Introduction

- “Candy cane” syndrome is a post-surgical Roux-en-Y gastric bypass (RYGB) complication associated with a markedly long, surgically-created blind end of the afferent Roux limb distal to the gastrojejunostomy.
- Gradual filling of this long blind limb with food can result in symptoms, including postprandial epigastric pain, nausea, vomiting, or regurgitation.
- Treatment of candy cane syndrome traditionally consists of surgical intervention with laparoscopic resection of the redundant blind afferent limb.
- Only one published case report documented endoscopic treatment of candy cane syndrome in which multiple purse-string sutures were used to completely seal off the blind afferent limb.
- We present the first case of successful treatment of candy cane syndrome through endoscopic revision of the gastrojejunal (GJ) anastomosis.

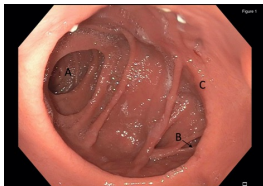


Figure 1. Endoscopic view of the blind afferent limb (A), enteral efferent limb (B) and dilated gastrojejunal anastomosis (C).

Case Report

- A 40-year-old female presented for evaluation of intractable acid reflux, nausea, and weight recidivism eight years post RYGB.
- Despite trial with a proton pump inhibitor, her symptoms persisted and continued to interfere with her daily activities.
- Esophagogastroduodenoscopy revealed evidence of prior RYGB, a healthy-appearing GJ anastomosis, a direct path across the GJ anastomosis into the blind afferent limb, and the enteral efferent limb located at a more angulated orientation toward the 4:00 position (Figure 1).
- An upper gastrointestinal series revealed an exaggerated blind afferent limb with pooling of contrast in the afferent blind limb before spilling to progress down the Roux limb (Figure 2). This finding suggested the reflux likely stemmed from the excessively long blind afferent limb.



Figure 2. Upper gastrointestinal series: Contrast pooling in an excessively long blind afferent limb (A) prior to progressing down the Roux limb (B).

Technique

- Endoscopic options were discussed, including the concept of suturing close the blind afferent limb. However, a decision was made to proceed with an alternative technique that would better address her various symptoms.
- A novel endoscopic suturing technique was performed that would narrow the GJ anastomosis and oriented flow towards the 3:00 to 4:00 position which correlated with the enteral efferent limb (Figure 3). This alteration would:
 1. Limit acid reflux
 2. Assist with weight loss
 3. Redirect flow of contents more toward the enteral efferent limb.
- Suturing revision of the GJ anastomosis to 8mm was performed in a running purse-string pattern starting at 2:00 position in an anti-clockwise direction to the 5:00 position

Outcome

- The patient’s reflux symptoms fully resolved post-procedure and she was weaned off acid-reducing medications.
- Additionally, at her two months post-procedure follow-up visit the patient had lost 22 pounds.

Conclusion

- Candy cane syndrome is an underappreciated complication reported following RYGB resulting from an excessively long blind afferent Roux limb at the gastrojejunostomy that can lead to food accumulation.
- Patients often present with nausea, vomiting, food intolerance, acid reflux, and abdominal pain.
- Many patients remain undiagnosed due to vague gastrointestinal symptoms, delayed presentation, and physician unawareness.
- Historically, treatment has required surgical revision.
- Endoscopic suturing revision of the GJ anastomosis can provide an alternative less invasive and possibly safer treatment option that address the reflux symptoms, weight regain, and aberrant flow of contents into the blind limb.

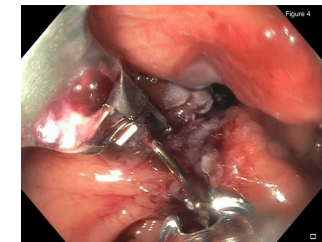


Figure 43 Successful endoscopic revision of the GJ anastomosis to 8mm.

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