

6 Cases of Intussusception After Roux-en-Y Gastric Bypass in Patients on GLP-1 Therapy: Exception or the New Rule?

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INTRODUCTION

- Intussusception is a rare but serious complication of Roux-en-Y gastric bypass (RYGB) surgery, with an estimated incidence ranging from 0.4% to 3.9% in post-operative patients (1,2).
- Only one published case report (2025) links GLP-1 use, RYGB, and intussusception (3).
- We hypothesized that GLP-1 RA use may be associated with an increased incidence of intussusception in patients with a prior history of RYGB surgery, potentially due to decreased bowel motility and changes in small bowel mucosa.
- Prompted by an unexpected cluster of cases, we sought to determine whether this represented a broader Dartmouth-Health-wide trend coinciding with the rise of GLP-1 prescribing (2017-2025).

METHODS

- With IRB approval, we queried Dartmouth Health Analytics Institute for annual RYGB procedures, GLP-1 prescriptions, and intussusception counts (2017–2025).
- A manual chart review from 2024-2025 identified 9 RYGB patients with GLP-1 exposure at intussusception diagnosis, of which 6 were included in this case series.
- Linear regression using Stata 18 assessed temporal trends.

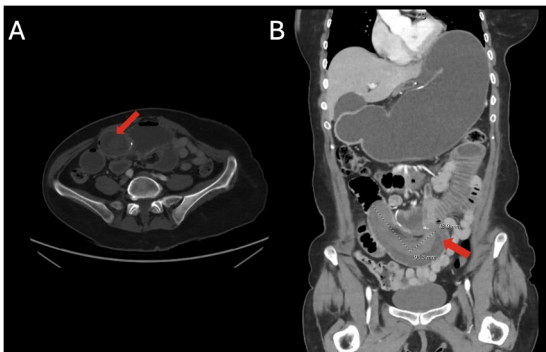


Figure 1: Intussusception CT. Panel A shows an axial view of the intussusception, depicting the "target sign." Panel B is a coronal view showing a retrograde intussusception at the level of the jejunojejunal anastomosis and massive fluid-filled distension of the stomach.

CASE SERIES

- All 6 patients had prior RYGB and recent or ongoing GLP-1 receptor agonist use (primarily semaglutide; one also liraglutide).
- Presentations occurred **months to years post-RYGB**, most presenting with acute epigastric or periumbilical pain (**Table 1**).
- Imaging typically showed jejunojejunal intussusception**, often near the anastomosis, with variable degrees of obstruction (**Figure 1**). One case involved ischemic bowel requiring resection (**Table 2**).
- Operative management predominated; one transient case resolved spontaneously and was managed conservatively.
- No consistent temporal or dose-related pattern** was observed between GLP-1 initiation or discontinuation and symptom onset, suggesting a multifactorial etiology instead of a direct pharmacologic trigger.

Characteristic	Value
Age (SD)	43.00 (7.21)
Sex	
Male	0%
Female	100%
Race	
White	100%
Time since RYGB in months (SD)	42.83 (47.99)
Time since GLP-1 start in months (SD)	15.00 (12.83)
BMI (SD)	25.70 (3.47)
Symptoms at Presentation	
Abdominal Pain N (%)	6 (100%)
Emesis N (%)	2 (33.3%)
Nausea N (%)	4 (66.7%)
Systemic Symptoms N (%)	2 (33.3%)

Table 1: Patient Demographics and Characteristics at Presentation

Radiographic findings		
Intussusception N (%)	5 (83.3%)	
Small bowel dilation* N (%)	3 (50%)	
No abnormalities N (%)	0 (0%)	
Operative approach		
Laparoscopic N (%)	5 (83.3%)	
Open** N (%)	1 (16.6%)	
No operation N (%)	1 (16.6%)	
Types of surgical intervention		
Diagnostic laparoscopy N (%)	5 (83.3%)	
Enteropexy only N (%)	0 (0%)	
Reduction only N (%)	2 (33.3%)	
Jejunojejunostomy revision N (%)	2 (33.3%)	
None N (%)	2 (33.3%)	

Table 2: Operative Approach and Findings. *Small bowel dilation on CT was defined as intraluminal or luminal dilation of the Roux or gastric limb. **Patient 6 was converted to open from laparoscopic.

RETROSPECTIVE QUERY RESULTS

- System-wide query data from 2017-2025 provide a denominator and timeline for interpreting our 6 observed cases.
- Among 697 total patients with intussusception, only **22 (3%)** had a prior RYGB.
- Of these 22 post-RYGB patients, **4 (18%)** were actively or recently on a GLP-1 at the time of their intussusception.
- Across the entire cohort, **46 of 697 (6.5%)** intussusception patients had any GLP-1 exposure.

DISCUSSION

- The case series highlights a rare but relevant post-RYGB complication among GLP-1 users.
- System-wide data show no significant temporal association (**Table 3**) between GLP-1 prescribing and intussusception incidence ($p > 0.05$).
- Together, these findings contextualize isolated cases within stable institutional trends, helping dispel GLP-1 safety misinformation while emphasizing the need for ongoing surveillance as GLP-1 use continues to expand.

Outcome	Mean (SD), per 100K admissions	β (Slope per Year)	p-Value	Interpretation
Overall Intussusception Rate	521.2 (89.6)	+20.1	0.08	Small, non-significant upward trend in overall intussusception rate across 2017–2025.
Intussusception Rate for Patients on GLP-1 Agonists	175.9 (121.5)	-4.1	0.82	No meaningful temporal change: rate remained stable despite increased GLP-1 prescribing.

Table 3: Linear Regression Analysis of Intussusception Rates, 2017–2025. Linear regression analysis showing that neither the overall nor the GLP-1-associated intussusception rate changed significantly over time ($p > 0.05$).

FUTURE DIRECTIONS

- Expand temporal analyses to integrate **GLP-1 prescribing trends, RYGB volumes, and intussusception incidence**, adjusting for confounders.
- Characterize **GLP-1 utilization patterns** and their interaction with post-RYGB outcomes in both surgical and nonsurgical populations.