Fresh upper gastrointestinal bleeding (hematemesis),a rare manifestation of retrograde intussusception following classic gastric bypass surgery

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Fresh upper gastrointestinal bleeding (hematemesis),a rare manifestation of retrograde intussusception following classic gastric bypass surgery

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Key clinical message

Retrograde intussusception may occur following classic gastric bypass surgery with a variety of presentations including colicky abdominal pain , constipation and vomiting. A rare manifestation of this complication is upper gastrointestinal bleeding (hematemesis) which can cause misdiagnosis

1-Introduction

Bariatric surgery (BS) is considered the most efficient long-term therapy for morbid obesity (1). Laparoscopic classic gastric bypass is generally considered a safe and effective procedure to prevent long-term complications of morbid obesity (2). Some complications such as bleeding, anastomosis stricture, marginal ulcers, leakage from the anastomosis site, and intussusception(2) have been reported after gastric bypass (2, 3).

Intussusception is rare in adults accounting for just 5% of cases and usually is due to an underlying pathology (like tumors or inflammatory processes, and polyps) acting as a lead point causing invagination of the proximal part of the bowel into the distal alongside peristalsis (anterograde) accountable for 90% of all intussusception (4). Retrograde intussusception mostly follows bariatric surgery (5). In the classic gastric bypass, the distal bowel (common channel) is drawn into the lumen of the proximal bowel (alimentary limb or jejunojejunostomy anastomosis). These intussusceptions usually occur without a leading point and may represent a motility disorder following the Roux-en-Y reconstruction, which may requires surgical reductions (6).

Diagnosis of intussusception is difficult due to its presentation with a wide range of symptoms and various severity, including acute or chronic abdominal pain and obstructive symptoms, and laboratory test results are not specific (7, 8). In this study, we represent a 19-year-old lady with an unusual presentation of intussusception presenting as upper gastrointestinal bleeding (Hematemesis), which can cause misdiagnosis.

2-Case presentation

A 19-year-old woman with a BMI of 47 (137 kg weight and 172 cm height) underwent classic gastric bypass surgery. The procedure was done in a standard method with 5 ports. Gastric pouch was created by three 60 mm Endo-GI purple staplers, gastrojejunal anastomosis was about 2 cm with an alimentary limb of 130 cm, and a biliopancreatic limb of 70 cm. Peterson and jejunojejunal defects closed completely.

Diet was started for her the next day, and she was discharged the second day after surgery in a stable condition with instructions to have regular post-op follow-ups. She weighed 109 kg and 93 kg at three and six months post-operation follow-ups, respectively. Iron deficiency anemia was detected in routine lab tests, and iron supplements were prescribed for her. Following her six-month follow-up, she presented with low-intensity colicky abdominal pain episodes after food ingestion that were resolved spontaneously after a few minutes. However, she neglected the painful episodes as they were self-limited.

Nine months after the surgery, she was admitted to the hospital due to 2 episodes of massive fresh bloody vomitting and abdominal pain (worse than her previous pains). Her vital signs were stable upon admission and she had a low intense colic pain in the left upper quadrant without tenderness. She was scheduled for an upper gastrointestinal endoscopy which showed a marginal ulcer at the site of the anastomosis without active bleeding. The next day her abdominal pain worsened and upper abdominal tenderness developed during her physical examination. Her laboratory data showed elevated white blood cells from 8500 /micL to 12000 /micL and a decreased hemoglobulin concentration from 11 gr/dl to 10.5 gr/dl. An abdominal and pelvic computed tomography (CT) scan with contrast was done, which showed distention in a small bowl lumen with a target sign (Figures 1,2 and 3).

With suspicion of intestinal obstruction and intussusception, the patient underwent laparotomy. Her surgical findings were retrograde intussusception of the common channel at the jejunojejunal anastomosis site with severe edema of the small intestine, which made bowel reduction impossible due to intestinal patchy necrosis. Consequently, the beginning of the common channel and the jejunojejunal anastomosis site was resected, and anastomosis of the alimentary limb to the common channel and the biliopancreatic limb to common channel was re-established in a side to side manner.

OUTCOME AND FOLLOW UP

Her vital signs were stable three days after the surgery, and she tolerated a liquid diet after a normal dye study. On the fifth day after the operation, the drain was removed, and the patient was discharged in excellent condition. Two weeks after surgery, the patient was re-visited and found no particular problems during the examination.she also visited after three months for her routine follow up which had 6 kg weight loss and acceptable laboratory parameters.

Conclusion

In conclusion, a rare complication following classic gastric bypass surgery is retrograde intussusception with a variety of presentations including colicky abdominal pain , constipation ,nausea and vomiting ,and also upper gastrointestinal bleeding (hematemesis) just like our case that can cause misdiagnosis during management. We believe that this paper is the first jejunojejunal intussusception with hematemesis that reported in the literature following classical gastric bypass surgery. Clinicians should suspect the presence of intussusception after bariatric surgery even with fresh upper gastrointestinal bleeding presentation

Discussion

Intussusception is rare in adults and retrograde intussusception is even less common with a variety of none specific symptoms including bowel obstruction, constipation, abdominal distention, and more commonly abdominal pain causing the diagnosis to be a challenging endeavor (7, 9, 10). The usual symptoms that patients present with are epigastric pain with discrete intensity and duration, nausea, and vomiting (9). In addition, rare cases present with a triad of abdominal pain, hematochezia, and an abdominal mass (4). Based on our search this is the first reported intussusception presenting itself with upper GI bleeding. Although a

marginal ulcer was reported in the endoscopy of the patient, there was no active bleeding that could explain hematemesis in our patient. Although examination and laboratory data don't specify the diagnosis and ultrasound usually is not helpful in adult cases of intussusception, a CT scan with contrast can be the best modality for such cases showing "target sign" which is suggestive of intussusception diagnosis (9, 11).

The decision of surgical or conservational management of these cases depends on the patient's condition and the complications that follow. Some cases have shown a spontaneous reduction of intussusception, however, in other cases bowel blockage, bowel ischemia, and bowel distention have been reported causing necessary and emergency surgical management (9). The challenging choice for the management of such cases can be eased with contrast abdominal CT scans (11). Different surgical management choices have been suggested in the literature for intussusception including intussusception reduction and resection of the damaged bowel with re-establishing anastomosis (12).

Patient consent statement

Written informed consent was obtained from patient and her family

Conflict of interest

Authors mention that there is no conflict of interest in this study.

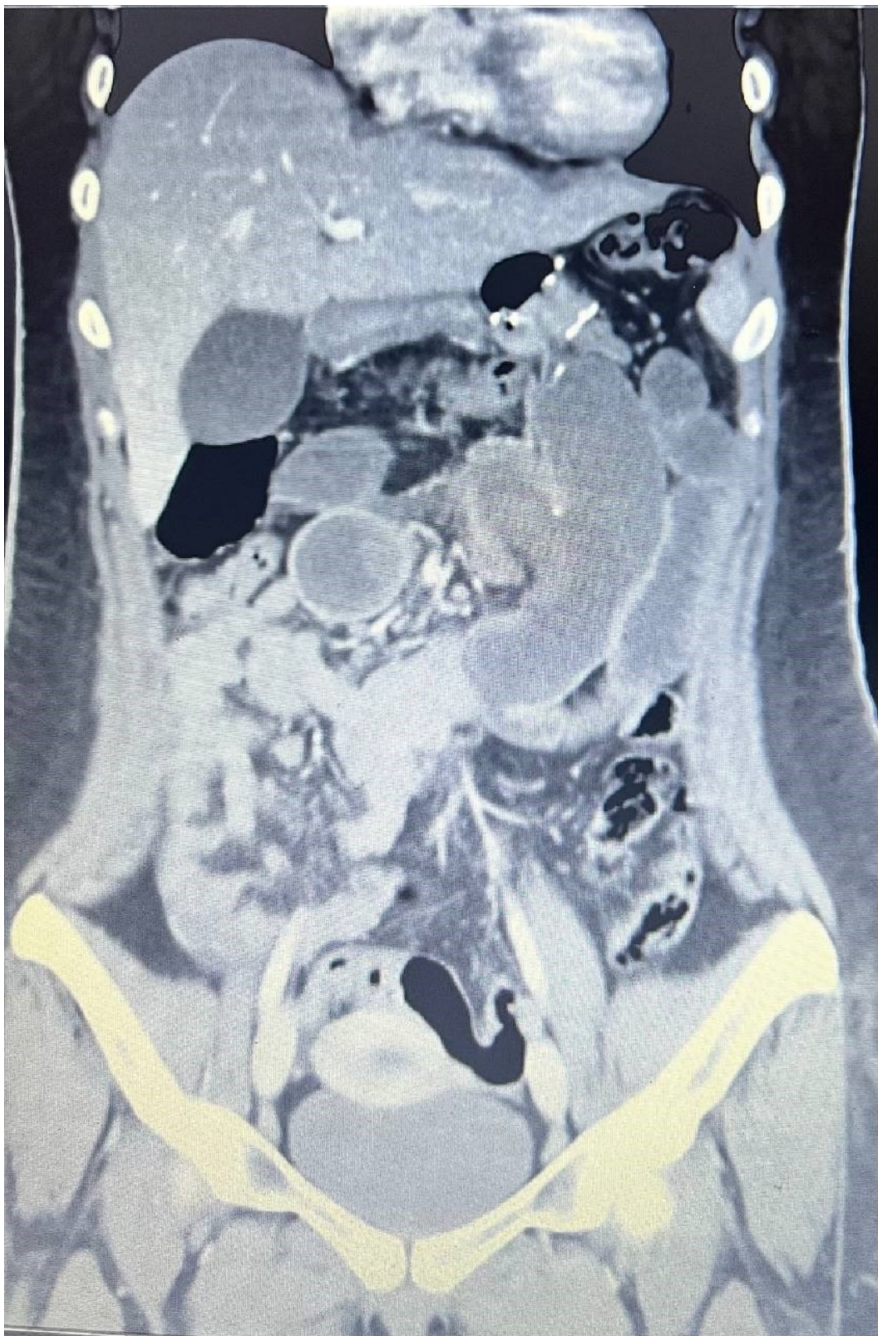
Authors' contribution

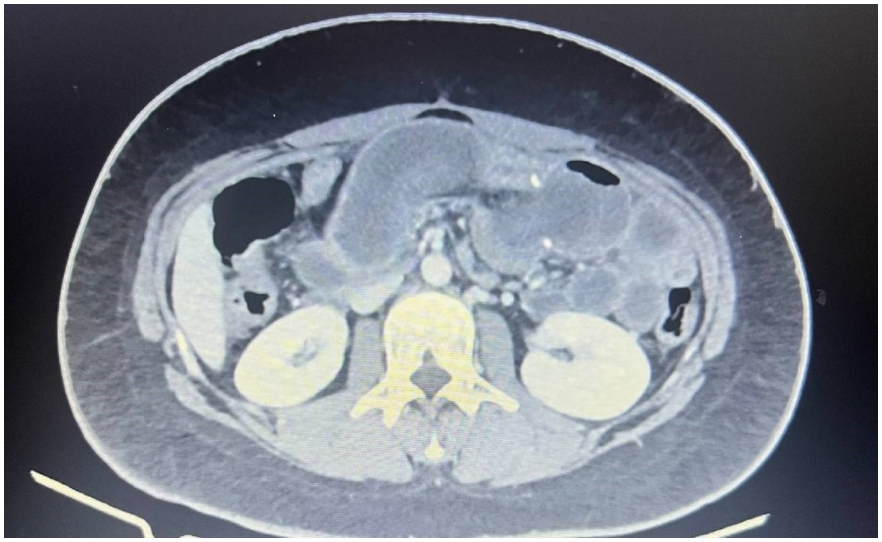
Dr. Naser Afshin was involved in Conceptualizations and supervision of Writing –the original draft. Dr Nader Moeinvaziri was Project administration and Supervised in Writing the original draft. Dr Nazanin Setayeshpour was responsible for Writing - review & editing. Dr Mohammad Ebrahimi helped in gathering resources and data curation

References

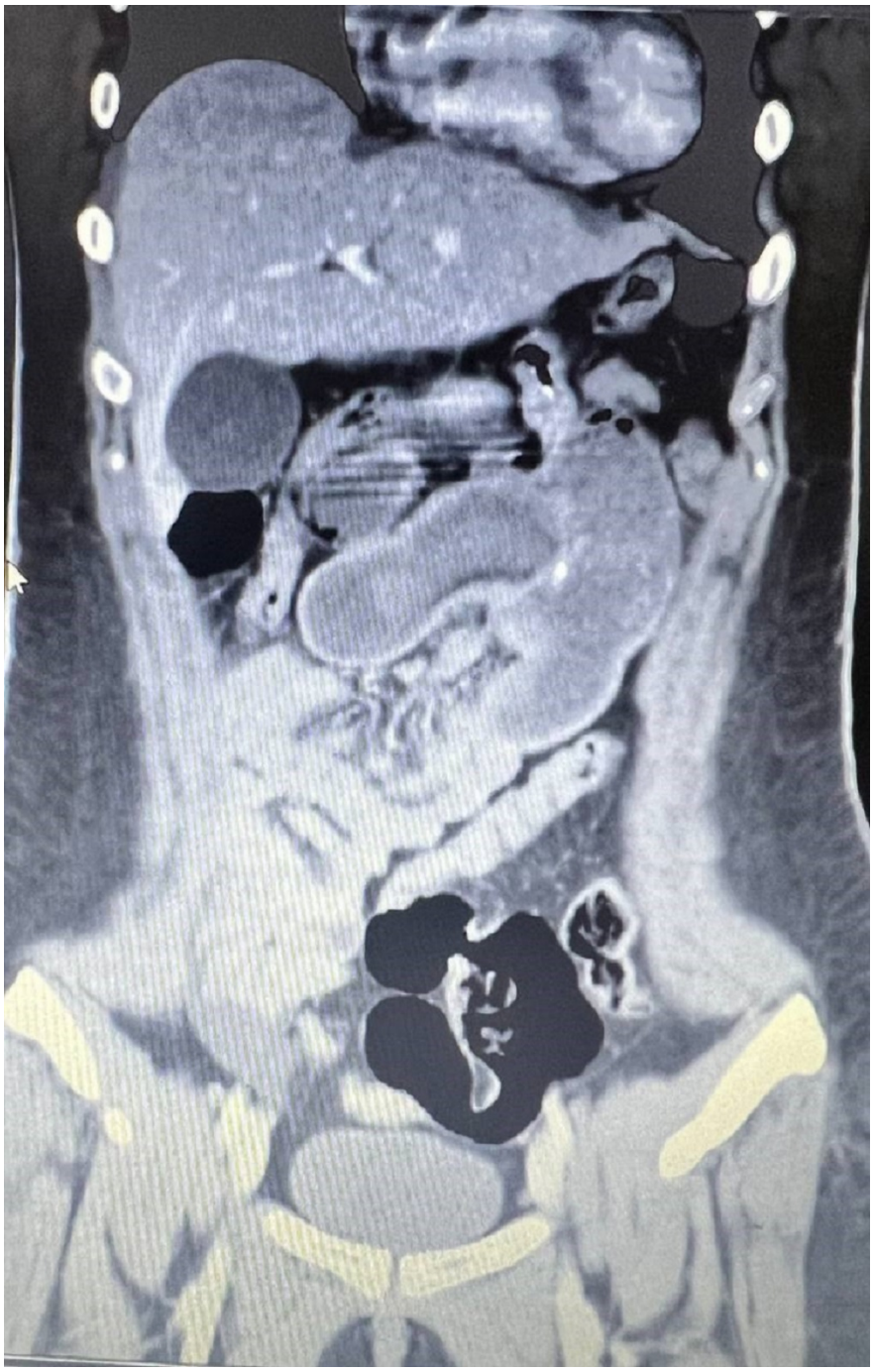
1. Singla S, Guenthart BA, May L, Gaughan J, Meilahn JE. Intussusception after laparoscopic gastric bypass surgery: an underrecognized complication. Minimally Invasive Surgery. 2012;2012(1):464853.2. Dutta SK, Arora M, Kireet A, Bashandy H, Gandsas A. Upper gastrointestinal symptoms and associated disorders in morbidly obese patients: a prospective study. Digestive diseases and sciences. 2009;54:1243-6.3. Orthopoulos G, Grant HM, Sharma P, Thompson E, Romanelli JR. S054: incidence and management of jejunojejunal intussusception after Roux-en-Y gastric bypass: a large case series. Surgical Endoscopy. 2020;34:2204-10.4. Sarma D, Prabhu R, Rodrigues G. Adult intussusception: a six-year experience at a single center. Annals of Gastroenterology. 2012;25(2):128.5. Daellenbach L, Suter M. Jejunojejunal intussusception after Roux-en-Y gastric bypass: a review. Obesity surgery. 2011;21:253-63.6. Brunicardi FC, Andersen DK, Billiar TR, Dunn DL, Hunter JG, Kao L, et al. SCHWARTZ'S PRINCIPLES OF SURGERY 2-volume set 11th edition: McGraw Hill Professional; 2019.7. Kasotakis G, Sudan R. Retrograde intussusception after Roux-en-Y gastric bypass for morbid obesity. Obesity surgery. 2009;19:381-4.8. Kalmar CL, Lucktong TA. Laparoscopic enteropexy for intussusception at Roux-en-Y anastomosis. Journal of Surgical Case Reports. 2019;2019(5):rjz152.9. Shergill K, Boppana K, Almansouri NE, Bakkannavar S, Faheem Y, Jaiswal A, et al. Intussusception and Gut Dysmotility: A Systematic Review Assessing Unexpected Complications of Bariatric Surgery. Cureus. 2024;16(4).10. Kumar A, Ogbonda S, Persaud P, Shiwalkar N. Retrograde intussusception after Roux-en-Y gastric bypass. Cureus. 2020;12(6).11. Zaigham H, Ekelund M, Lee D, Ekberg O, Regnér S. Intussusception after Roux-en-Y gastric bypass: correlation between radiological and operative findings. Obesity Surgery. 2023;33(2):475-81.12. Machado A, Carvalho M, Caravana J. Laparoscopic resolution of intussusception after Roux-en-Y gastric bypass. Surgery for Obesity and Related Diseases. 2018;14(12):1916-8.

(Figure1)Abdominal and pelvic Ct scan infavour of small bowel intussusception





(Figure2) Intussusception target sign



(Figure3) coronal view of small bowel intussusception

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