

Fluoroscopic assessment of the bariatric surgery patient

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Patient History

A 52-year-old female underwent Roux-en-Y gastric bypass surgery at an outside institution, complicated by severe upper GI bleeding for which she underwent an anastomotic revision. She then developed persistent bilious vomiting, lost a significant amount of weight, and was unable to eat or maintain her weight properly.

Imaging

UGI exam was performed in two stages. Initially, barium was injected into the

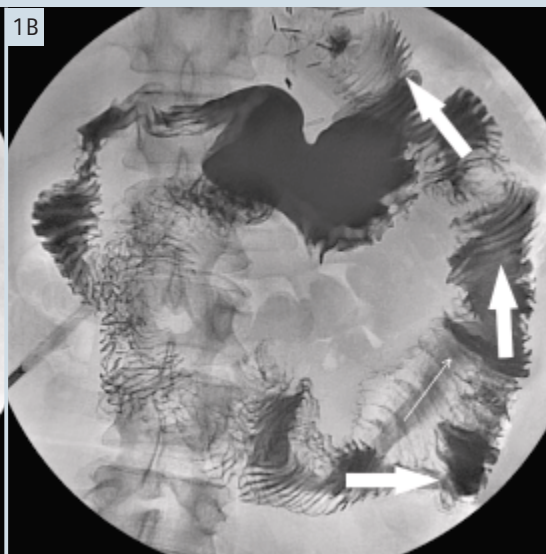
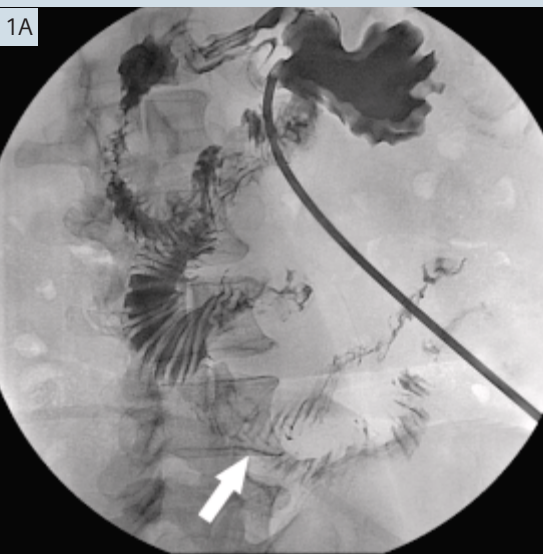
excluded gastric segment via a G-tube. Contrast emptied into the duodenum and progressed antegrade by peristalsis to the distal Roux-en-Y anastomosis [1A]. Contrast then preferentially flowed into the alimentary limb, traveling retrograde towards the gastric pouch [1B]. For the second stage, barium was administered orally and augmented with air insufflation via the G-tube. This opacified a dilated gastric pouch and stenosis of both the gastroenteric anastomosis and the alimentary limb [2A]. At the distal anastomosis, contrast preferentially flowed into the biliary limb, with only a small fraction of the barium flowing antegrade into the distal small bowel [2B].

Operative Findings

At surgery the alimentary limb was found to be excessively short, measuring only 25 cm. The short limb was excised and a new 110 cm alimentary Roux limb was created, along with revision of the distal anastomosis. The patient was discharged tolerating an oral diet well and with full resolution of her obstructive symptoms.

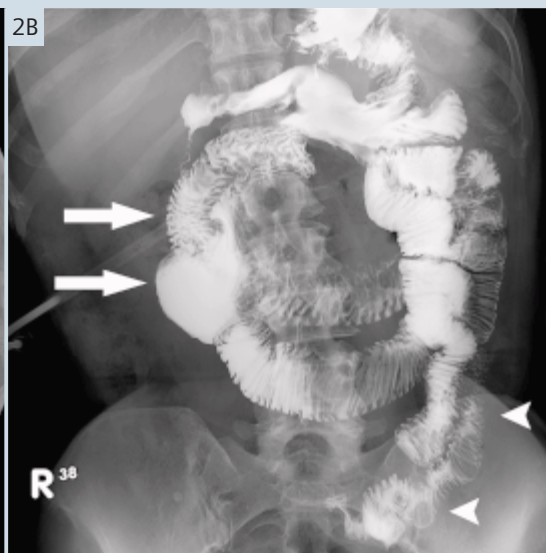
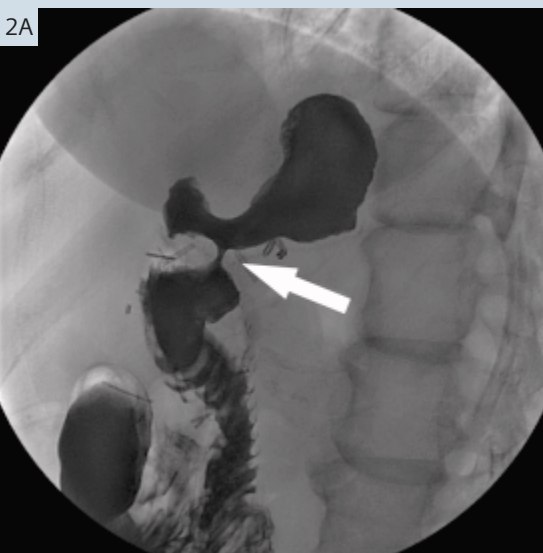
Diagnosis

Functional bowel obstruction due to an excessively short alimentary limb and a functionally diverting distal Roux-en-Y anastomosis.



[1A] Contrast injection via a G-tube opacified the excluded gastric pouch and the biliary limb down to the distal Roux-en-Y anastomosis (arrow).

[1B] Contrast then preferentially diverted retrograde into the alimentary limb (thick arrows), with only a small amount entering the distal small bowel (thin arrow).



[2A] Per oral contrast administration opacified a large gastric pouch and the alimentary limb. Pouch dilatation was due to a proximal anastomotic stenosis (arrow).

[2B] Overhead view shows the preferential accumulation of orally administered contrast in the biliary limb (arrows). At the end of the study, there was still very little contrast progression into the distal small bowel (arrowheads).

Technical Challenges

The postoperative bowel anatomy in gastric bypass patients is technically difficult to evaluate for several reasons. The large body habitus of these patients limits X-ray penetration. In addition, these patients often exceed table weight limitations either for table movement or even for stationary table support, limiting the views and positions in which the anatomy can be assessed. Some patients are so large that they can only be imaged in upright position. This decreases sensitivity for detecting anastomotic leaks

and other complications. If distal bowel pathology is suspected, we may evaluate the bowel fluoroscopically or by CT exam. CT is often more helpful in assessing suspected distal obstructions, while fluoroscopy is more helpful in assessing suspected misconstructions and functional pathology.

Reference

Mitchell MT, Pizzitola VJ, Knuttinen M-G, Robinson T, Gasparaitis AE. Atypical complications of gastric bypass surgery. *Eur J Radiol* 2005; 53:366-73.



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