



UNIVERSITY of
ROCHESTER
MEDICAL CENTER

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DEPARTMENT OF IMAGING SCIENCES

Imaging Sciences Interesting Cases

CASE 22

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CLINICAL PRESENTATION: Patient has abdominal pain and dry retching.

IMAGING FINDINGS:

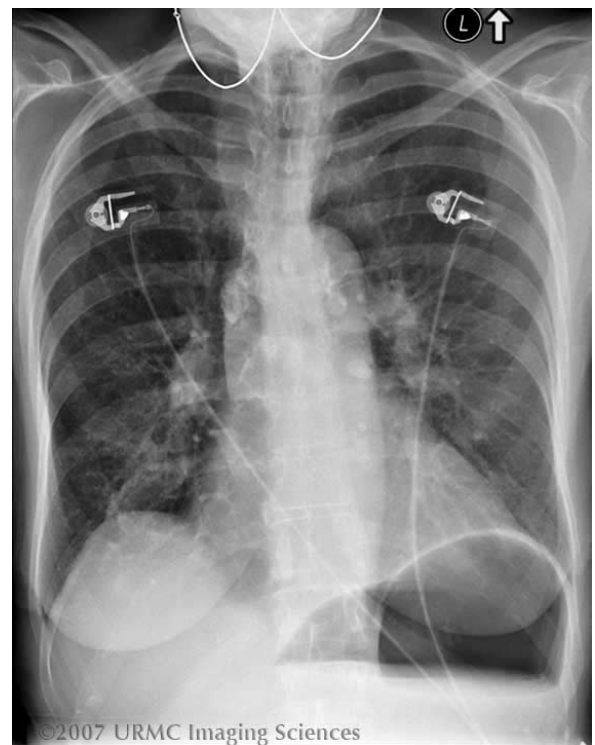


Figure 1: Chest x ray demonstrates two gastric fluid levels. There is no hiatal hernia.

Figure 2: Axial contrast-enhanced CT through the upper abdomen demonstrates a transition point at the gastric outlet, here positioned posterior to the main gastric body. The axis of volvulus is visible as a soft tissue plane between the two fluid filled gastric compartments. This patient had complete gastric outlet obstruction, but an NG tube was successfully passed into the stomach. This allowed decompression and resolution of the gastric outlet obstruction.



Figure 3: Upper GI fluoroscopy performed after resolution of the patient's gastric outlet obstruction shows the antrum located superior to the gastric fundus, which is at the bottom of the image.



DIAGNOSIS: Mesenteroaxial Gastric Volvulus

DISCUSSION: Gastric volvulus is an uncommon acquired twisting of the stomach on itself. It involves twisting of more than 180 degrees, creating a closed loop gastric obstruction. Three types are described: organoaxial, mesenteroaxial, and mixed. The distinction lies in the axis of gastric rotation. Organoaxial volvulus involves twisting of the stomach about an axis running parallel to the long axis of the organ, i.e. the line connecting the cardia and antrum. Mesenteroaxial volvulus involves twisting of the stomach about a line perpendicular to the greater and lesser gastric curvatures, so that the antrum lies superior to the cardia. The mixed form involves elements of both. Organoaxial GV is often associated with a large hiatal hernia. Other predisposing factors include laxity of the gastric mesentery and gastrohepatic, gastrosplenic, and gastrophrenic ligaments, all of which serve to hold the relatively mobile stomach in position between the fixed points of the distal esophagus and duodenal bulb. Thus GV is often seen in older patients. Organoaxial volvulus is the more common type in adults. Mesenteroaxial volvulus is more common in children and is often associated with a Morgagni diaphragmatic hernia.

Complications include gastric outlet obstruction, strangulation, perforation and hemorrhage. The mortality rate is up to 30%. Gastric volvulus can exist in a chronic, asymptomatic form without obstruction or ischemia. Chronic GV is usually mesenteroaxial. The classic clinical presentation, "Borchardt's triad", involves violent nonproductive retching, epigastric pain, and difficulty passing an NG tube beyond the GE junction. Treatment goals include early recognition and prevention of recurrence. Laparoscopic detorsion is performed, followed by gastropexy, either laparoscopically or endoscopically, usually with a gastrostomy tube. Gastrectomy may be indicated in the setting of strangulation.

REFERENCES:

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2. Chiechi MV, Hamrick-Turner J, Abbitt PL. Gastric herniation and volvulus: CT and MR appearance. *Gastrointest Radiol*. 1992 Spring;17(2):99-101. [PubMed]