

Fellows' Corner

by Xinqing Fan, Samir Nath, Guillermo Gomez and G.S. Raju

CASE REPORT

A 24-year-old female who was 24-weeks pregnant (G2P1) was seen locally for acute onset of abdominal pain and distension associated with nausea, retching and episodic vomiting. She was treated with NG suction and proton pump inhibitor. When a significant amount of fluid was aspirated after clamping the NG tube, EGD was performed to exclude obstruction. EGD revealed necrotic gastritis involving the proximal two thirds of the stomach. She was then transferred to our facility with the suspicion of gastric volvulus. Physical examination revealed mild epigastric tenderness and distension without any sign of peritoneal irritation. She was kept NPO. NG tube suction and proton pump inhibitor were continued. MRI revealed elevated left hemidiaphragm and a massively dilated stomach with its antrum displaced superiorly to G-E junction. Repeat EGD again showed hemorrhagic and inflammatory changes in the gastric antrum and body (Figure 1,

2). Biopsy reported severe acute hemorrhagic gastritis with ischemic/toxic effects. The patient improved dramatically after EGD, tolerated clear liquid diet and was advanced to a regular diet. Six hours later, abdominal pain and distention associated with nausea and vomiting recurred. Chest X-ray revealed a markedly distended stomach extending into the chest above the left hemidiaphragm (Figure 3). An upper GI series confirmed the diagnosis of mesentero-axial gastric volvulus with complete outlet obstruction. Emergent laparoscopic detorsion of gastric volvulus with gastropexy and G-tube gastrostomy was performed. The patient recovered well and was discharged home.

Questions

1. What is the clinical presentation of gastric volvulus?
2. How is it diagnosed?
3. What is the treatment? Can NG tube suction or upper endoscope alone reduce gastric volvulus?

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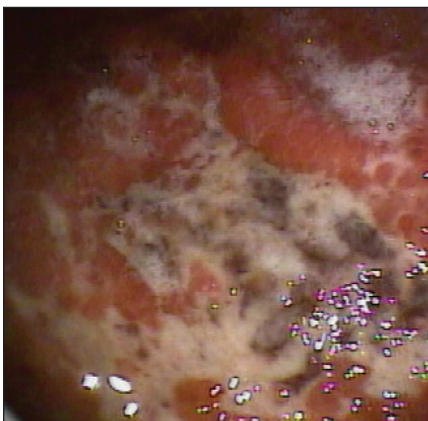


Figure 1.

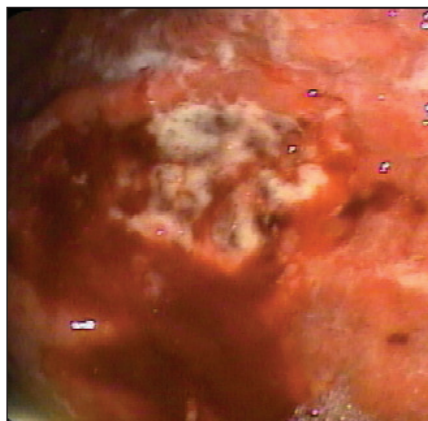


Figure 2.

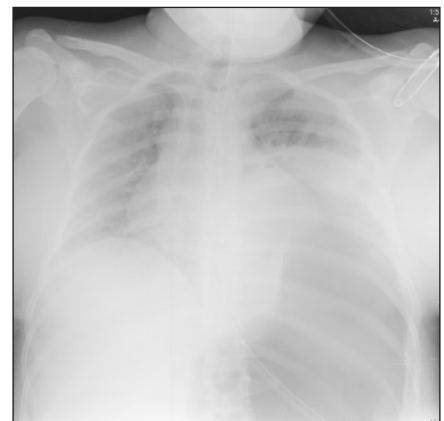


Figure 3.

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DISCUSSION

Gastric volvulus was first described by Berti on post-mortem examination of a 60-year-old female who died of high closed loop obstruction in 1866 (1). Based on the axis of rotation, Gastric volvulus is classified as organo-axial volvulus and mesentero-axial volvulus. The more common type is organo-axial volvulus, in which the stomach rotates anteriorly and superiorly along its longitudinal axis. The stomach folds along its short axis from the mid-lesser curvature to great curvature resulting in mesentero-axial volvulus.

The sign and symptoms of gastric volvulus depend upon the rapidity of onset, the degree of obstruction, and if the obstruction is above or below the diaphragm. Classic symptoms of acute gastric volvulus are known as borchardt's triad, which includes severe epigastric pain and distention, vomiting followed by non-productive retching, and difficulty to pass a nasogastric tube (2).

The initial diagnosis of gastric volvulus is clinical and should be confirmed with a chest X-ray, upper endoscopy and upper gastrointestinal series. Delayed diagnosis and treatment can result in ulceration, perforation, hemorrhage and necrosis (3,4).

Treatment of gastric volvulus is a surgical emergency. However, nasogastric tube decompression alone could reduce the acute gastric volvulus (5). A nasogastric tube may be impossible in organoaxial gastric volvulus because of the obstruction; and is easier to achieve with mesenteroaxial volvulus because the cardia of the stomach remains open. Fortunately, the NG tube was placed easily into the stomach as shown on the chest X-ray in this patient. An NG tube with suction reduced the gastric volvulus to some extent. The obstruction may be intermittent or partial with NG tube suction. Patient only has minimal symptoms of gastric obstruction.

The role of endoscopic reduction of gastric volvulus is still controversial (6,7). After the upper endoscope was performed on this patient, most likely the gastric volvulus was temporarily reduced, and the gastric outlet obstruction was also temporarily resolved.

The patient became asymptomatic for a few hours, and tolerated a clear liquid diet well. After the diet was advanced to a regular diet, gastric volvulus reformed and became a complete obstruction.

The mortality rate from acute gastric volvulus has been reported from 16% to 50% (8,9); the mortality decreases upon early recognition and treatment of this condition. In a recently reported case of acute gastric volvulus of a 36-year-old woman 19 weeks pregnant, abortion took place two days after surgery, maternal death occurred a few days later after rapid deterioration in renal and hepatic function (10).

Acute gastric volvulus has been reported with two cases of increased amylase level exceeding 1000 IU/L, leading to the misdiagnosis of acute pancreatitis (11). This patient also had an increase amylase level of 791 IU/L; the differential diagnosis should include pancreatitis, gastric outlet obstruction, perforated gastric ulcer, and ruptured gall bladder. ■

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