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A rare intraabdominal emergency

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A sixty-seven year old male patient admitted to the emergency department with complaints of epigastric pain and dark colored vomit which occurred while eating. The pain had a colic-like characteristic and spread to the chest. The patient vomited only once and continued to retch. No comorbid disease was present. The patient's blood pressure was 167/101 mmHg, pulse was 67/min, respiratory rate was 22/min, body temperature was 35.5 °C (95.9 °F) and oxygen saturation was 93%. The physical examination was normal except for epigastric tenderness. The electrocardiogram was normal. The biliary system and aorta were normal, and there was no free fluid in the abdomen with bedside ultrasonography. There was no decrease in pain, despite the intravenous spasmolytic (hyoscine-N-butyl bromide, 20 mg) and morphine (3 mg) administration. Complete blood count, blood amylase, glucose, electrolytes, kidney and liver function tests were normal. The patient's abdominal computerized tomography images are shown in Fig. 1.

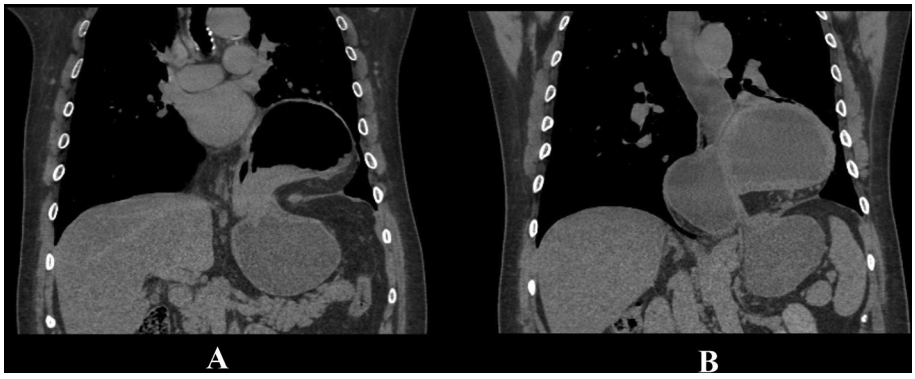

Fig. 1. Restructured – on coronal plane – thoracoabdominal computerized tomography images.

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Diagnosis: mesenteroaxial gastric volvulus

Gastric volvulus (GV) occurs when all or part of the stomach twists by more than 180 degrees in a manner that creates a closed bowel loop.[1]

Pediatric patients constitute 20% of the cases. Most of the pediatric cases are under the age of one and have congenital diaphragm defects. Predisposing factors in adults are paraesophageal hernias, diaphragm injuries or surgeries, and diaphragm elevation due to phrenic nerve paralysis. A stomach filled with fluid is also a predisposing volvulus development.[1,2]

Gastric volvulus occurs in three different types; mesenteroaxial, organoaxial and combined. Organoaxial GV occurs when the abdomen revolves around its own long-axis (Fig. 2a–b). Nearly 60% of the cases are organoaxial, which is not related to diaphragm defect.[3] Air-fluid levels are observed with standing plain radiography in the upper abdomen. Mesenteroaxial GV occurs when the stomach's pylorus and antrum displace in a manner that places them next to esophagogastric junction. 30% of the cases are mesenteroaxial and it is usually associated with a diaphragm defect.[1] Double air-fluid levels are observed in epigastric and retrocardiac areas in standing plain radiography.

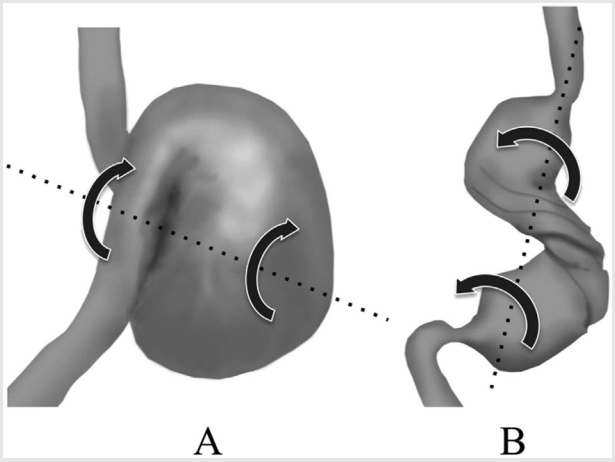

Fig. 2. Types of Gastric Volvulus; (a) mesenteroaxial gastric volvulus (b) organoaxial gastric volvulus.

Acute GV is mostly observed in fifth decade. One third of the cases admit with complaint of serious acute left upper quadrant pain. Symptoms might be chronic and repetitive. Pain might spread to the patient's neck or dorsum. Acute epigastric pain and abdominal distention, being unable to vomit despite retching, and inability to pass a nasogastric tube are defined as Borchardt's Triad.

Clinical suspicion plays a key role in the diagnosis. It should always be kept in mind for the patients with retrocardiac or large air-fluid level in the epigastric area in plain radiography and admitted with complaint of severe pain. Borchardt's triad is subsidiary in the diagnosis. The most useful tool for diagnosis is computerized tomography (CT). Hiatal hernia or diaphragm eventration, anatomical structure of volvulus and superior location of antrum in CT might be assessed in multiple plans.[3] CT images of anatomical structures of the case are shown in Fig. 3.

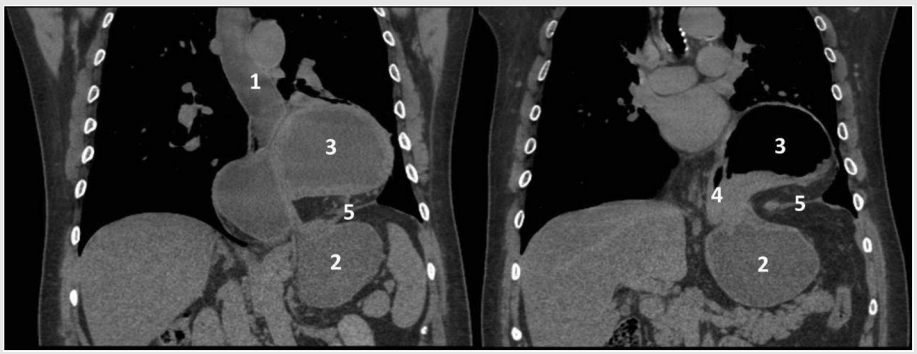

Fig. 3. Restructured – on coronal plane – thoracoabdominal computerized tomography images; 1) Distended distal esophagus, 2) Fundus of the stomach 3) Antrum of the stomach, 4) Pylorus, 5) Diaphragm.

Acute GV is a real surgical emergency with high mortality rate. It should always be remembered for cases that admit to the emergency department with the complaint of abdominal pain and were not diagnosed and had ongoing pain. Early diagnosis and treatment are life-saving for these patients.

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