Case 12306

An unusual cause of chronic vomiting: intrathoracic gastric volvulus

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Section: Abdominal imaging
Area of Interest: Abdomen
Procedure: Contrast agent-intravenous
Procedure: Diagnostic procedure
Imaging Technique: CT
Special Focus: Volvulus Case Type: Clinical Cases
Authors: BOUJARNIJA H, HOUMADA M Y, AMEURAQUI T, LAMRANI Y, BOUBBOU M, MAAROUFI M, TIZNITI S
Patient: 55 years, male

Clinical History:

A 50-year-old man, having a history of hydatid cyst of the left lung, was operated 30 years ago. He presents early postprandial vomiting for 6 months, the clinical examination finds a supple abdomen in a patient with good general condition. The biological assessment is normal.

Imaging Findings:

An abdominal CT was performed with and without injection of contrast media, showing a mesenteroaxial gastric volvulus with herniation of the gastric antrum into the intrathoracic region through the oesophageal hiatus. The antrotomyloric transition zone at the distal part of the antrum without any mass or bowel wall thickening. The patient underwent laparoscopic surgery, which confirmed the radiological findings; there was no signs of parietal necrosis.

Discussion:

Gastric volvulus was first described by Berti et al. in 1866 [5, 6] and is a relatively uncommon condition characterized by an abnormal rotation of the stomach around an axis. It is generally due to other disorders (adhesions, diaphragmatic hernias, and paraoesophageal hiatal hernias)[1, 2]. It can also occur as a complication of certain surgical procedures [3, 4].
The incidence and prevalence of this pathology are unknown. About 15% to 20% of cases occur in children younger than 1 year of age, frequently associated with a congenital diaphragmatic defect. The peak incidence in adults is in the fifth decade [5, 7].

There are three types of volvulus: organoaxial, mesenteroaxial, and the combined type. 2/3 of cases are organoaxial. The axis for this volvulus joins at the cardia and the pylorus. The stomach rotates along this long axis [8]. Mesenteroaxial volvulus is less frequent. In this type, the axis is drawn between the middle part of the lesser and greater curvatures perpendicular to the stomach. The fundus and proximal stomach are distal to the antrum and pylorus [9]. Mesenteroaxial volvulus is more likely than organoaxial volvulus to be incomplete and intermittent, and to manifest
with chronic symptoms. Acute gastric volvulus induces sudden severe pain in the upper abdomen or lower chest. Persistent unproductive retching is frequent. If the volvulus is complete, it is impossible to pass a nasogastric tube into the stomach [5]. The association of pain, unproductive vomiting, and inability to pass a nasogastric tube is called Borchardt’s triad [7, 10]. If the volvulus is associated with a diaphragmatic hernia, physical examination may find the stomach in the left chest. Plain chest CT will demonstrate a large gas-filled viscus in the chest. A barium upper gastrointestinal radiograph will confirm the diagnosis.

Chronic gastric volvulus is associated with mild and nonspecific symptoms (dysphagia, epigastric discomfort or fullness, bloating, and heartburn) particularly after meals. Symptoms may be present for months or years [5, 7]. The diagnosis should be suspected in the proper clinical setting if an upper gastrointestinal radiograph or CT demonstrates a large diaphragmatic hernia, even if the stomach is not twisted at the time of the exam [11]. Mortality rates of Gastric volvulus is about 50%; the main causes of death are due to complications from strangulation (perforation, hemorrhage, and shock)[1, 5, 12]. The treatment is open and more recently laparoscopic surgery has been used [5, 10]. The exact role of endoscopy is still not totally clear in treating volvulus, but endoscopic techniques for volvulus reduction have been successfully used in high surgical risk patients without signs of ischemia[13, 14].

**Differential Diagnosis List:** Intrathoracic mesenteroaxial gastric volvulus, Paraesophageal hernia, organoaxial gastric volvulus

**Final Diagnosis:** Intrathoracic mesenteroaxial gastric volvulus

**References:**

A.P. Cardile and D.S. Heppner (2011) Gastric volvulus, borchardt’s triad, and Endoscopy: a rare twist,. Hawaii Medical Journal vol. 70, no. 4, pp. 80–82 (PMID: 21785507)

P.P. Llaneza and W.B. Salt II (1986) “Gastric volvulus. More common than previously thought?”. Postgraduate Medicine vol. 80, no.5, pp. 279–288 (PMID: 3763530)


**Figure 1**

Description: Axial slice shows the antrum in an intrathoracic position. The antropyloric transition zone at the distal part of the antrum without any mass or bowel wall thickening. **Origin:** Tizniti S, Department of Radiology, CHU HASSAN II, FES, Morocco
Figure 2

Description: abdominal CT coronal reconstructions show the fundus at a lower level than the antrum. Origin: Tizniti S, Department of radiology, CHU hassan II, FES, Morocco