



PARA-ESOPHAGEAL HERNIA WITH MESENTERO-AXIAL GASTRIC VOLVULUS IN AN ADULT

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**ABSTRACT**

The gastric volvulus is defined as an abnormal rotation of all or part of the stomach around one of its axes, creating the conditions of an upper abdominal obstruction with gastric dilation and risk of strangulation. It is a rare entity that requires a surgical treatment, and its diagnosis is often delayed due to frequently aspecific symptoms. Here we present a case of 32-year-old female with history of non-bilious vomiting, abdominal distension, pain in the epigastric region. During her medical workup we incidentally found gastric volvulus (mesenteroaxial) with diaphragmatic hernia. The patient was prepared for laparoscopic surgical repair converted to open laparotomy due to adhesions and closed the defect. The patient postoperatively recovered well and discharged on eight postoperative day.

**KEYWORDS :** gastric volvulus (mesenteroaxial), diaphragmatic hernia.

**INTRODUCTION**

Gastric volvulus was first described by Ambroise Pare in 1957 in a patient with traumatic diaphragmatic rupture. It was only in the 19th century that this pathology began to be well individualized, in particular thanks to the work of Berti [1]. At the beginning of the 20th century, several definitions were proposed based on the rotation angle of the stomach and on etiological factors [2]. Thus, the gastric volvulus is defined by an abnormal rotation of all or part of the stomach around one of its axes, creating the conditions of an upper abdominal obstruction with gastric dilation and risk of strangulation. Considering the rotation axis, we will distinguish the organoaxial volvulus and the mesenteroaxial volvulus. Most hernias are asymptomatic and found incidentally. Gastric volvulus is a diagnostic emergency and therapeutic challenge because in acute forms it may lead to gastric strangulation with a high risk of ischemia and necrosis. Gastric volvulus requires surgical treatment, specifically volvulus reduction, reintegration of the stomach into the abdominal and correction of causal factors.

duodenum with pylorus located superior to GE junction suggestive MA gastric volvulus [fig 2]. She was taken to operation theatre for emergency laparoscopy with initial findings of distended stomach with greater curvature adherent to under surface of diaphragm. Converted to open laparotomy with findings of mesentero-axial gastric volvulus lax left hemidiaphragm with left paraoesophageal herniation [ fig 3], did reduction of gastric fundus with detorsion of volvulus and closure of diaphragmatic defect with plication[fig 4] and left tube thoracostomy for pleural breach and gastropexy. The patient made an uneventful postoperative recovery and was discharged 8 days later.

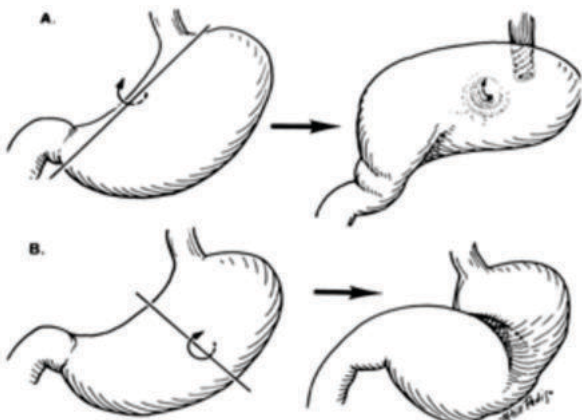


Figure 1: Gastric Volvulus A) Organo-axial B) Mesentero-axial

**CASE REPORT**

A 32year old female patient reported a three-day history of epigastric pain with abdominal distension, non-bilious vomiting with five-day history of constipation a contrast-enhanced computed tomography (CT) scan finding of distended stomach with displacement of the antrum above the gastroesophageal junction and non-dilated proximal

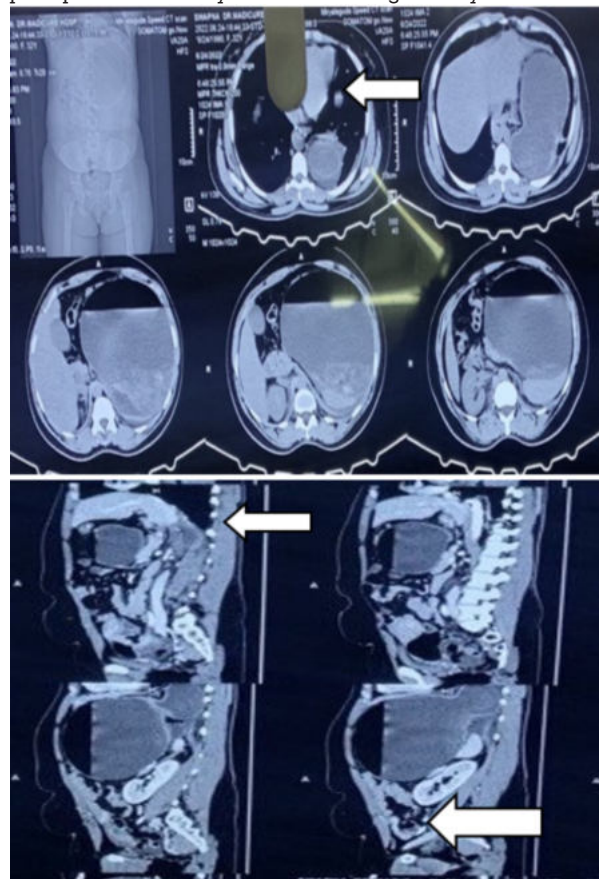
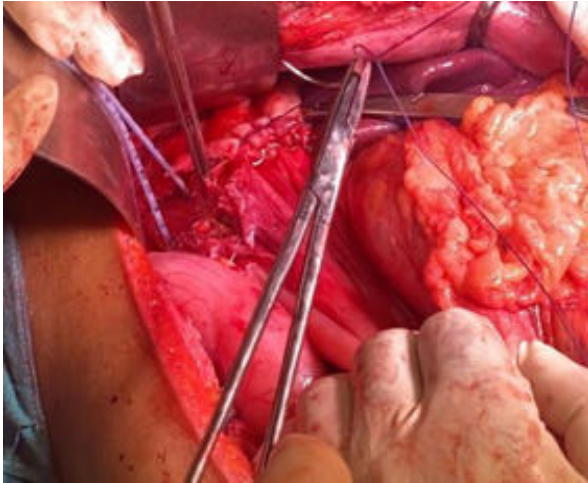


Figure 2: CT Showing Paraoesophageal Hernia (arrows)



**Figure 3:** Paraoesophageal Herniation



**Figure 4:** E-esophagus, D-diaphragm plication.

## DISCUSSION

Gastric volvulus is defined as an abnormal rotation of the stomach by more than 180 degrees and is classified as organoaxial (59%), mesenteroaxial (29%) or mixed.<sup>3</sup> Mesenteroaxial volvulus is more likely found in the pediatric population and is rarely described in adult individuals.<sup>4</sup> Risk factors for gastric volvulus include patient age over 50, gastric ligament laxity, pyloric stenosis, rectal atresia, gastroduodenal tumors, diaphragmatic injury and eventration, left lung resection, or pleural adhesions.<sup>4,5</sup> Complications associated with gastric volvulus include bowel obstruction, strangulation, ischemia, necrosis, perforation and abdominal sepsis. Acute gastric volvulus is a medical emergency with mortality rates as high as 30–50%.<sup>6</sup> The diagnosis of gastric volvulus mainly relies on barium UGI series. A CT of the abdomen can confirm the gastric malrotation and define the transition point.<sup>7</sup> Upper abdominal defects including diaphragmatic eventration, paraesophageal hernia and wandering spleen can be seen associated with gastric volvulus on imaging studies. Gastric volvulus can sometimes be diagnosed through upper endoscopy and a tortuous appearance of the stomach; difficulty or inability for the endoscope to reach the pylorus can be encountered.

Management is surgical and primarily involves decompression of the stomach, volvulus reduction and possible gastropexy or gastrostomy tube placement. Intra-abdominal defects should be corrected if contributory.<sup>4</sup> Other techniques include gastrojejunostomy, fundus-antral gastropexy (Opelzer's procedure), partial gastrectomy, division of any congenital bands, simple gastropexy, gastropexy with division of the gastrocolic omentum (Tanner's procedure) The introduction of laparoscopic approaches has led to safer less invasive surgery. Endoscopic de-rotation together with percutaneous endoscopic gastrostomy has been

described in patients with isolated gastric volvulus and significant co-morbidity.

Our patient with mesenteroaxial volvulus did not present with the typical Borchardt's triad. Instead, she presented with migrating pain from the epigastrium and upper abdominal distension.

## CONCLUSIONS

Gastric volvulus is a rare disease which should be considered a diagnostic and therapeutic emergency due to the risk of gastric necrosis by prolonged ischemia which can be life-threatening.

We should always think of gastric volvulus as a differential diagnosis in case of acute epigastric pain associated with vomiting or dyspnea especially with history of diaphragmatic hernia or chronic digestive symptoms.

The treatment of choice is always immediate surgical intervention combining devolvulation, reintegration of the stomach, and the treatment of the cause.

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