

Case Report

Gastric volvulus is a rare and life-threatening abdominal pain

Raúl Omar Martínez Zarazúa^{1*}, Héctor Vergara Miranda², Rafael Sáenz Resendez²,
César Adrián Sepúlveda Benavides², Daniel Eduardo Saldívar Martínez¹

¹Department of Plastic Surgery, ²Department of General Surgery, University Hospital of Nuevo León, Mexico

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*Correspondence:

Dr. Raúl Omar Martínez Zarazúa,
E-mail: raulomar1989@gmail.com

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ABSTRACT

Gastric volvulus is a rare and life-threatening abdominal pain condition resulting from the stomach twisting on its own longitudinal (organo-axial) or transverse (mesentero-axial) axis. Gastric volvulus can be primary or secondary. Secondary is most commonly related to para-esophageal hernia. Gastric volvulus can have an acute or chronic presentation, the acute form presents abdominal pain with a risk of gastric ischemia with subsequent perforation. Diagnosis is made by imaging studies such as barium contrast studies in the upper digestive tract or abdominal and chest computed tomography (CT). CT of the abdomen and thorax is very useful in the diagnosis as it can demonstrate the abnormal position and gastric torsion. The goal in the definitive treatment of gastric volvulus is resolution of gastric obstruction and prevention of recurrence. Performing volvulus reduction, repair of the concomitant cause (para-esophageal hernia), fundoplication and/or gastropexy to the anterior abdominal wall. Gastropexy is considered safe and effective in elderly patients with high surgical risk.

Keywords: Gastric volvulus, Para-esophageal hernia, Anterior gastropexy

INTRODUCTION

Gastric volvulus is a rare and life-threatening abdominal pain condition resulting from the stomach twisting on its own longitudinal (organo-axial) or transverse (mesentero-axial) axis.¹ Gastric volvulus can be primary or secondary. Secondary is most commonly related to para-esophageal hernia.² Gastric volvulus can have an acute or chronic presentation, the acute form presents abdominal pain, vomiting and difficulty in passing the nasogastric tube, with a risk of gastric ischemia with subsequent perforation. Gastric volvulus also has chronic symptoms such as dysphagia, postprandial pain, vomiting, and suffocation.³ Diagnosis is made through imaging studies such as barium contrast studies in the upper digestive tract or abdomen and chest CT.⁴ The goal in the definitive treatment of gastric volvulus is resolution of gastric obstruction and prevention of recurrence. Treatment

options include endoscopy, laparoscopy, and open procedures.^{4,5}

CASE REPORT

A 73-year-old male presented with pain in the epigastrium for 12 days, accompanied by vomiting, asthenia, anorexia, and weight loss. She reported a history of heartburn for 10 months, without weight loss or vomiting, which resolved with medical management of proton pump inhibitors. In medical history, he has suspended alcohol and tobacco consumption.

Endoscopy was performed, reporting hiatal hernia/organo-axial gastric volvulus/distal erosive esophagitis, with subsequent improvement in symptoms. In the thoraco-abdominal CT scan, the presence of a large hiatal hernia, conditioning changes in the position of the stomach in relation to gastric volvulus (Figure 1).

Patient undergoes laparoscopic surgical approach. Herniated stomach evidenced within the thoracic cavity (Figure 2). It does not present data of gastric necrosis, presenting adhesions in diaphragmatic pillars to the stomach, the stomach is reduced from the thorax to the abdominal cavity (Figure 3), The hiatal hernial defect is closed with non-absorbable tension sutures and gastropexy towards the anterior abdominal wall by means of separate non-absorbable suture stitches.

In the postoperative period, it was carried out without eventualities, adequate tolerance to a progressive diet, and she was discharged from the hospital on the 4th postoperative day. It was assessed again 3 months after surgery, reporting adequate tolerance to diet, weight gain, and no symptoms of postprandial pain or heartburn.

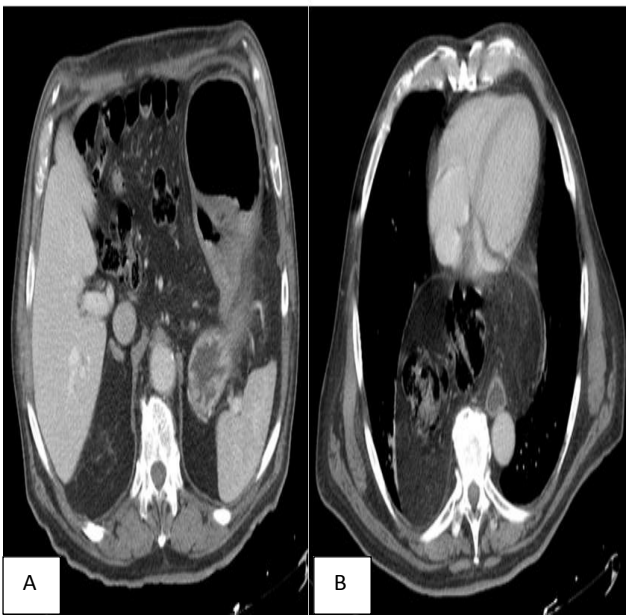


Figure 1 (A and B): Gastric volvulus.



Figure 2: Diaphragmatic hernia with stomach in the thorax (Red arrow).



Figure 3: Organoaxial volvulus.

DISCUSSION

The normal fixation of the stomach in its proximal portion is carried out by the gastrosplenic, gastro-hepatic, gastrocolic ligament and distal fixation is through the duodenum towards the retroperitoneum. Laxity of these ligaments can result in gastric volvulus.^{3,4,6}

Gastric volvulus above the diaphragm in two thirds of cases is involved para-esophageal hernia or mixed diaphragmatic hernia.

Volvulus is classified by etiology as primary/idiopathic volvulus associated with tumors, adhesions or problems in the normal fixation of the stomach by ligaments or secondary volvulus associated with disorders of gastric motility and anatomy or with problems of adjacent structures such as the diaphragm and spleen. Most gastric volvulus have a secondary cause. In older adults, secondary gastric volvulus is usually associated with para-esophageal hernia or diaphragmatic trauma.^{7,8}

The clinical presentation can be acute, variable intensity or chronic, being its most usual presentation with intermittent periods of dyspepsia symptoms.⁸

The classic symptoms of the acute form known as Borchardt's triad include epigastric pain, nausea without reaching vomiting, and inability to pass a nasogastric tube, present in 70% of cases.^{2,8} Chronic symptoms are dysphagia, postprandial epigastric pain, vomiting, and suffocation.

Diagnosis of gastric volvulus is difficult due to its nonspecific symptoms. Usually by radiology in combination of the clinical presentation. The diagnosis can be made by means of the esophagogastric series with barium contrast. Abdominal and chest CT is very useful in demonstrating abnormal position and gastric torsion.^{4,10}

Early endoscopy is recommended for the evaluation of the gastric mucosa, it can also be used therapeutically with decompression and reduction of volvulus, being effective as a treatment in patients with high surgical risk and acute presentations of volvulus.⁹

For gastric volvulus in acute or chronic presentation, the treatment of choice is surgical, either by laparoscopy or open procedure. Performing volvulus reduction, repair of the concomitant cause (para-esophageal hernia), fundoplication and/or gastropexy to the anterior abdominal wall.^{4,6,9}

The acute presentation with gastric necrosis is a surgical emergency, it has a mortality of 30-50%, as a result of the delay in recognition and treatment.¹¹ In contrast, the chronic presentation can be treated electively, which must be carried out to prevent an acute presentation.

In cases of risk of mortality, a temporary gastrostomy can be performed. Gastropexy has been recommended as the treatment of choice in primary volvulus; this procedure fixes neighboring structures, organs such as the liver, diaphragm or anterior abdominal wall.⁹ It is considered safe and effective in older adults with high surgical risk.¹²

CONCLUSION

In conclusion, rapid identification and a timely surgical approach continue to be the crucial steps in the treatment of gastric volvulus, preventing the high morbidity and mortality of its acute presentation.

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