Crimson Publishers
Wings to the Research

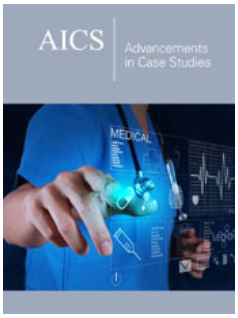
Case Report

Gastric Volvulus: A Case Report

Zied Ayed, Ali Hannachi*, Raoudha Ben Khelifa, Mariem Maarouf and Alifa Daghfous

Department of Radiology, Faculty of medicine of Tunis, Trauma center of Ben Arous, Tunisia

ISSN: 2639-0531



***Corresponding author:** Ali Hannachi, Department of Radiology, Faculty of medicine of Tunis, Trauma center of Ben Arous, Tunisia

Submission: November 07, 2024
Published: December 03, 2024

Volume 4 - Issue 3

How to cite this article: Zied Ayed, Ali Hannachi*, Raoudha Ben Khelifa, Mariem Maarouf and Alifa Daghfous. Gastric Volvulus: A Case Report. Adv Case Stud. 4(3). AICS.000589. 2024.
DOI: 10.31031/AICS.2024.04.000589

Abstract

Gastric volvulus is a rare condition, often associated with hiatal hernias, characterized by the rotation of the stomach around its axes, leading to potential ischemic necrosis and a high mortality rate. As clinical presentation is often nonspecific, diagnosis requires imaging techniques such as CT. We present a case of gastric volvulus in a 75-year-old female. The patient underwent surgical repair. She had uneventful recovery with discharge.

Keywords: Gastric volvulus; Organo-axial; Mesentero-axial; Hiatal hernia

Introduction

Gastric volvulus is a rare clinical entity and a complication of hiatal hernias (4%). It involves the more or less complete rotation of the stomach around a transverse or longitudinal axis. This condition can lead to perforations due to ischemic necrosis of the stomach wall, with a very severe prognosis (30% mortality rate) [1]. We present a case of a 75-year-old female who presented with upper central abdominal pain associated with three episodes of non-bilious vomiting, without significant biological abnormalities. She was diagnosed with gastric volvulus on a computed tomography scan.

Case Report

A 75-year-old female with a history of hysterectomy, diabetes mellitus, hypertension, dyslipidemia and atrial fibrillation, presented to the emergency department with upper central abdominal pain associated with multiple episodes of non-bilious, non-blood-stained vomiting containing food particles for one day. On examination, her heart rate was 86 beats per minute, blood pressure was 130/80mmHg and she experienced shortness of breath (SaO_2 = 93%). Abdominal examination revealed mild epigastric tenderness with normal active bowel sounds and no peritoneal signs were noted. Electrocardiography revealed a normal sinus rhythm, and chest X-ray examination showed a large hiatal hernia. Subsequently, contrast-enhanced computed tomography (CECT) of the abdomen and pelvis was performed, which suggested a rolling hiatal hernia complicated by mesentero-axial gastric volvulus without signs of distress. The urgent management included inserting a nasogastric tube, along with administering antiemetics and analgesics. Nasogastric aspiration returned 1100cc of stagnant fluid, which reduced the pain and vomiting. An esophagogastroduodenoscopy was performed the next day, revealing a rolling hiatal hernia with grade A esophagitis. She was taken to the operating room for surgical repair of the volvulus and the hiatal hernia. A Nissen fundoplication and an anterior gastropexy were performed. The patient recovered without any complications and was discharged (Figure 1).

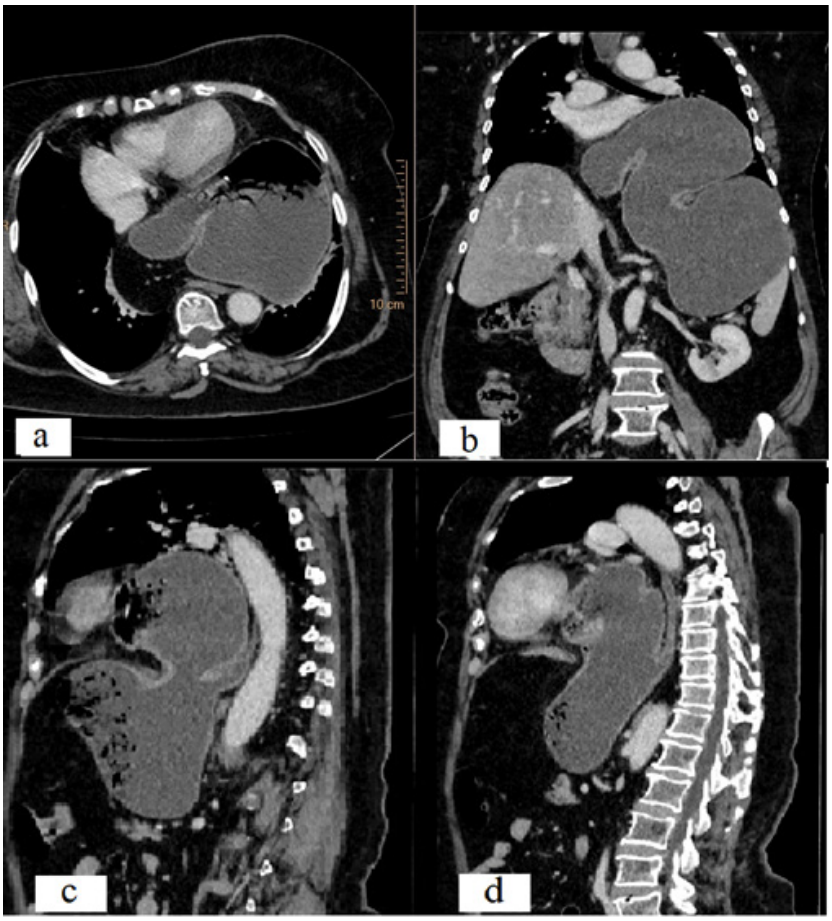


Figure 1: The gastro-oesophageal junction (red arrow) is below the pyloro-duodenal junction (yellow arrow); the gastric antrum (asterisk) is above gastro-oesophageal junction; the antrum and pylorus are superior to the fundus (triangle) and proximal body and so the stomach appears of twisted configuration.

Discussion

Gastric volvulus is characterized by rotation of the stomach along its long or short axis, leading to variable degrees of gastric outlet obstruction. The mortality rate of acute gastric volvulus is high if not diagnosed and treated early. Gastric volvulus is rare, with peak incidence occurring after the fifth decade, and adults representing 80% to 90% of cases. Acute gastric volvuli carry a mortality rate of 42–56%, primarily due to gastric ischemia, perforation, or necrosis [1,2].

The clinical presentation of gastric volvulus is not specific, but it features a suggestive triad known as Borchardt's triad:

A. Severe epigastric pain and/or pain in the left hypochondrium or left hemithorax radiating to the back.

B. Ineffective vomiting efforts with food intolerance.

C. Inability to place the nasogastric tube.

Hematemesis may arise from mucosal ischemia or tears in the mucosa resulting from vomiting. In cases of complete gastric outlet obstruction, the stomach becomes distended and filled with fluid, leading to noticeable upper abdominal swelling and dullness upon percussion. During auscultation, gastric sounds might be heard in the chest area. Additionally, signs of peritonitis, such as abdominal wall rigidity and rebound tenderness, may be observed if there is substantial gastric ischemia caused by strangulation or perforation.

The etiologies of the rotation are either primary or secondary. Primary volvulus refers to cases where there is no diaphragmatic or abdominal anomaly. Laxity of the ligaments that anchor the stomach in place within the abdominal cavity is a common cause. Lengthening of the ligaments due to stretching gives rise to abnormal rotation of the mesentery. Secondary volvulus occurs when the patient presents with a hiatal hernia (50%), traumatic diaphragmatic hernia, a benign or malignant gastric tumor, gastric distension after massive ingestion of air or fluid, or even hepatic or splenic causes, such as the absence of the left lobe of the liver or asplenia [2].

There are two subtypes of gastric volvulus: organo-axial and mesentero-axial [2]. Organo-axial is the more common of the two types in adults (2/3 of cases). It commonly occurs in the setting of trauma or para-esophageal hernia, with the stomach rotated along its long axis, and the greater curvature lying above the lesser curvature (Figure 2).

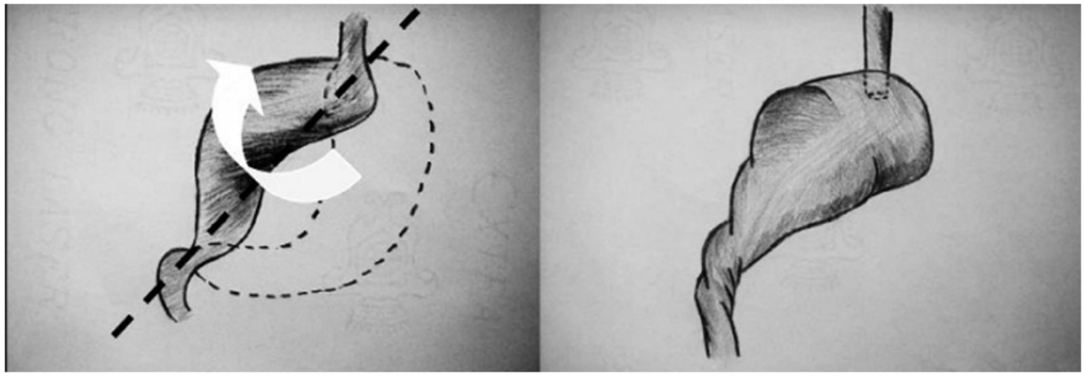


Figure 2: Organo-axial gastric volvulus.

Mesentero-axial volvulus is less common in adults but is more prevalent than organo-axial volvulus in the pediatric population (59% of gastric volvulus cases). In this type, the stomach rotates around its short axis.

Clinical examination alone is not sufficient for diagnosis. Standard X-ray and a CT scan are necessary.

Abdominal X-rays will show a double air-fluid level and a large, distended stomach, seen as an air- and fluid-filled spherical viscus displaced upward and to the left (Figure 3).

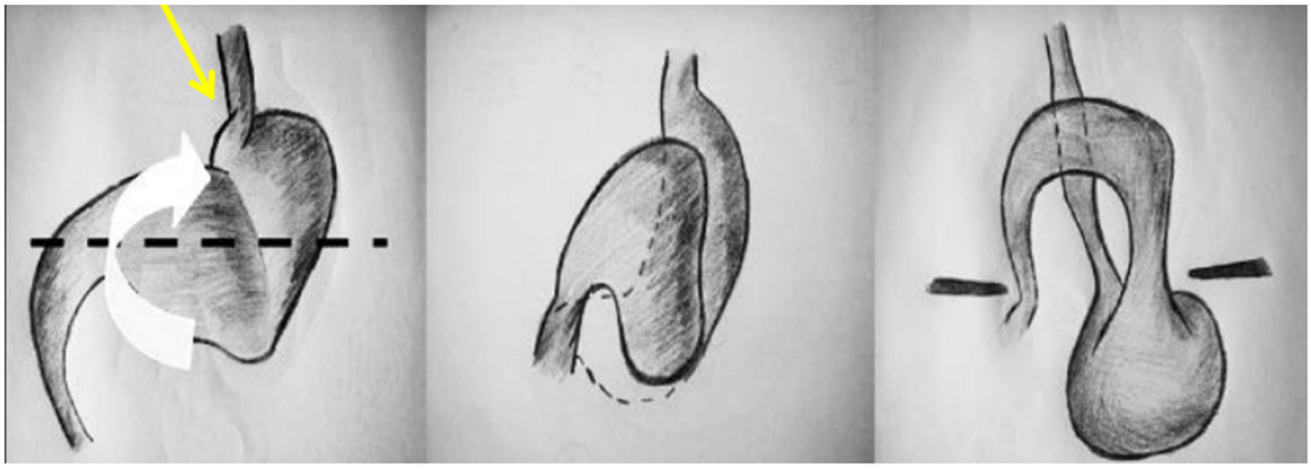


Figure 3: Mesentero-axial gastric volvulus.

A chest X-ray will show, in the case of a hiatal hernia, a retrocardiac fluid level suggesting an intrathoracic gastric volvulus.

CT: The CT appearance depends on the type of volvulus:

a) Organo-axial volvulus: Rotation of the stomach around its longitudinal axis, around a line extending from the cardia to the pylorus. The stomach rotates upward, with the greater curvature lying above the lesser curvature. The antrum moves from an inferior to a superior position; the fundus rotates from superior to inferior position.

b) Mesentero-axial volvulus: Rotation of the stomach about its mesenteric (short) axis. The axis runs transversely across the stomach at right angles to the lesser and greater curvatures. The stomach rotates from right to left or left to right about the long axis of the gastrohepatic omentum [3].

Signs of severity include spontaneous hyper-density of the wall, lack of enhancement after injection, wall pneumatosis, wall thickening, wall thinning and target appearance. Other imaging findings may be due to predisposing factors, such as associated hiatal or diaphragmatic hernia, asplenia, or ectopic spleen. Treatment can be either surgical or medical in nature. The gold standard is open laparotomy with detorsion and prevention via anterior gastropexy. Nissen fundoplication decreases future occurrences in patients with a hiatal hernia.

Conclusion

Gastric volvulus is a rare condition that can have a very serious progression. Clinical examination alone is insufficient to establish the diagnosis, so a computed tomography (CT) scan is necessary to assess the thoracic lesion and evaluate the viability of the stomach. The preferred treatment remains surgical.

Patient Consent Statement

The patient has provided written consent with regards to publication of her case.

Declaration of Interest

The authors have no conflicts of interest to declare.

Funding Sources

No subsidies or grants contributed to this work.

References

1. Kessler E, Wolloch Y (1972) Granulomatous mastitis: A lesion clinically simulating carcinoma. Am J Clin Pathol 58(6): 642-646.
2. Nikolaev A, Blake CN, Carlson DL (2016) Association between hyperprolactinemia and granulomatous mastitis. Breast J 22(2): 224-231.
3. Pluguez Turull CW, Nanyes JE, Quintero CJ, Alizai H, Mais DD, et al. (2018) Idiopathic granulomatous mastitis: Manifestations at multimodality imaging and pitfalls. Radiographics 38(2): 330-356.
4. Velidedeoglu M, Kilic F, Mete B, Yemisen M, Celik V, et al. (2016) Bilateral idiopathic granulomatous mastitis. Asian J Surg 39(1): 12-20.
5. Aslan H, Pourbagher A, Colakoglu T (2016) Idiopathic granulomatous mastitis: Magnetic resonance imaging findings with diffusion MRI. Acta Radiol 57(7): 796-801.
6. Barreto DS, Sedgwick EL, Nagi CS, Benveniste AP (2018) Granulomatous mastitis: Etiology, imaging, pathology, treatment, and clinical findings. Breast Cancer Res Treat 171(3): 527-534.