



Clinical case

Acute Gastric Volvulus in the Elderly: A Diagnostic and Surgical Challenge

Volvulus gastrique aigu chez les personnes âgées : un défi diagnostique et chirurgical

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Résumé

Introduction : Le volvulus gastrique aigu est une urgence chirurgicale rare mais critique, caractérisée par une rotation anormale de l'estomac d'au moins 180°, souvent secondaire à une hernie hiatale. En raison de la présentation atypique des symptômes, le diagnostic peut être difficile. Cette étude de cas souligne l'importance de l'imagerie dans le diagnostic du volvulus gastrique et les stratégies de prise en charge efficaces.

Cas clinique : Nous présentons le cas d'une femme de 85 ans, présentant des antécédents de diabète de type 2, d'hypertension artérielle, de coronaropathie et portant un stimulateur cardiaque. Elle a présenté des douleurs épigastriques aiguës, des nausées, des vomissements, une distension et une constipation. Le diagnostic a été confirmé par tomodensitométrie (TDM), qui a révélé une hernie diaphragmatique gauche et un volvulus de l'estomac. L'exploration chirurgicale par incision sus-ombilicale médiane a confirmé un volvulus organo-axial secondaire à une hernie de Bochdalek. Le traitement a consisté en une dérotation de l'estomac, la réparation du défaut

diaphragmatique et la mise en place d'un drain. La patiente s'est rétablie sans incident et a pu sortir de l'hôpital au 10ème jour postopératoire.

Discussion : Le volvulus gastrique se présente sous forme de symptômes atypiques et peut être classé comme organoaxial ou mésoaxial. Les principaux signes radiologiques, notamment le « signe de la chenille » sur les radiographies et la rotation de l'estomac sur le scanner, sont essentiels au diagnostic. Le traitement comprend généralement une stabilisation, une dérotation chirurgicale et une gastropexie, la chirurgie laparoscopique offrant les avantages d'une convalescence réduite et d'une douleur postopératoire moindre. Une surveillance postopératoire attentive est essentielle pour identifier les complications telles que les perforations et gérer les récurrences.

Conclusion : Le volvulus gastrique, bien que rare, nécessite un diagnostic et une intervention rapides. L'imagerie radiologique est essentielle pour un diagnostic précis et une prise en charge chirurgicale efficace. Malgré les progrès thérapeutiques, le risque de récurrence nécessite des recherches continues pour

affiner les approches thérapeutiques et améliorer les résultats pour les patients.

Mots-clés : volvulus gastrique aigu, femme âgée, hernie de Bochdalek, volvulus organoaxial, tomodensitométrie (TDM), chirurgie.

Abstract

Introduction: Acute gastric volvulus is a rare but critical surgical emergency characterized by the abnormal rotation of the stomach by at least 180°, often secondary to a hiatal hernia. Due to the atypical presentation of symptoms, diagnosis can be challenging. This case study highlights the importance of imaging in diagnosing gastric volvulus and the effective management strategies employed.

Clinical case: We present a case of an 85-year-old female with a history of type 2 diabetes, arterial hypertension, coronary artery disease, and a pacemaker, who presented with acute epigastric pain, nausea, vomiting, distention, and constipation. The diagnosis was confirmed using computed tomography (CT), which revealed a left diaphragmatic hernia and stomach volvulus. Surgical exploration via a median supra-umbilical incision confirmed organoaxial volvulus secondary to a Bochdalek hernia. Treatment involved derotation of the stomach, repair of the diaphragmatic defect, and placement of a drain. The patient recovered uneventfully and was discharged on postoperative day 10.

Discussion: Gastric volvulus presents with atypical symptoms and can be classified as organoaxial or mesoaxial. Key radiological findings, including the “caterpillar sign” on X-rays and rotation of the stomach on CT scans, are crucial for diagnosis. Treatment typically includes stabilization, surgical derotation, and gastropexy, with laparoscopic surgery offering benefits of reduced recovery time and less postoperative pain. Careful postoperative monitoring is essential to identify complications such as perforations and to manage recurrence.

Conclusion: Gastric volvulus, while rare, requires prompt diagnosis and intervention. Radiological imaging is essential for accurate diagnosis and

effective surgical management. Despite advancements in treatment, the risk of recurrence necessitates continued research to refine treatment approaches and improve patient outcomes.

Keywords: Acute Gastric Volvulus, old woman, Bochdalek hernia, Organoaxial Volvulus, Computed Tomography (CT), surgery.

Introduction

Acute gastric volvulus is a rare surgical emergency, characterized by a high digestive obstruction due to a torsion of the stomach by at least 180°. The primary etiology is often a hiatal hernia, which predisposes the stomach to this dangerous condition. Clinical symptoms can be atypical, making diagnosis challenging. However, in approximately 70% of acute organoaxial volvulus cases, patients typically present with Borchardt’s triad: sudden onset of intense epigastric pain, retching without emesis, and the inability to pass a nasogastric tube (1). Surgical intervention remains the treatment of choice.

We report a new case of acute gastric volvulus, diagnosed through computed tomography (CT). This case not only adds to the limited number of documented instances of this condition in the medical literature but also emphasizes the crucial role of imaging in achieving an accurate diagnosis.

Clinical case

An 85-year-old female patient with a history of type 2 diabetes, arterial hypertension, coronary artery disease, and a pacemaker, who is also being treated for a hiatal hernia, presented with a 1-day history of worsening epigastric pain associated with nausea, vomiting, distention, and constipation. The pain had been evolving for less than 24 hours without radiation and was associated with non-bilious, non-bloody emesis.

Physical examination revealed slight tenderness upon palpation of the epigastrium. Despite conservative

treatment for one day, her symptoms did not resolve. Further evaluation showed no signs of severity on the electrocardiogram or in laboratory tests, notably no signs of infection, cytolytic effects, or necrosis, and normal lipase levels. The patient was afebrile.

A standard abdominal X-ray without preparation showed two air-fluid levels in the stomach. A thoraco-abdominal CT scan revealed an interruption in the continuity of the left diaphragmatic dome. The stomach was completely ascended into the thoracic cavity, volvulated around its axis, and severely distended, leading to mediastinal shift to the right (figure 1).

Surgical exploration via a median supra-umbilical approach confirmed the diagnosis of organo-axial gastric volvulus secondary to a left postero-lateral diaphragmatic hernia of Bochdalek type. The stomach was entirely intrathoracic but showed good vitality after reduction of the volvulus. Treatment involved gastric devolvulation, complete reduction of the herniated viscera, closure of the diaphragmatic defect, and placement of a drain in the cavity.

The postoperative course was uneventful, and the patient was discharged on postoperative day 10.

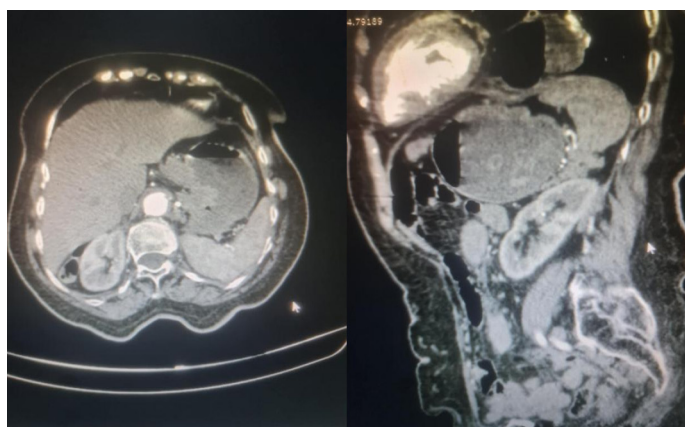


Figure 1: gastric volvulus tomography image

Discussion

Gastric volvulus is a rare surgical emergency in adults, characterized by abnormal rotation of the stomach around its axis (1). This volvulus can be classified as organoaxial or mesoaxial, depending on the direction

of rotation (2). The clinical symptomatology is very atypical, making the diagnosis difficult (3). The Borchartd triad, including epigastric pain, inability to vomit, and difficulty inserting a nasogastric tube, can guide the diagnosis of acute volvulus (4). Gastric volvulus presents with several key radiological signs that vary depending on the type of volvulus (organoaxial or mesoaxial) and the severity of the clinical picture. On standard radiographs without contrast, abnormal levels of air and fluid can be observed in the stomach, which often appears distended (5). The stomach may also be abnormally elevated or displaced into the thoracic cavity, particularly if there is an associated diaphragmatic hernia (6). Another notable sign is the “caterpillar sign,” where the gastric mucosal folds overlap to create an accordion-like appearance.

CT scans provide more detailed information, revealing rotation of the stomach about its axes—either along its long axis in organoaxial volvulus or its short axis in mesoaxial volvulus (7). This rotation can result in mediastinal displacement, especially if the stomach is elevated into the thoracic cavity (8). CT scans can also identify a distended stomach filled with air or fluid, as well as any associated diaphragmatic hernia, often seen in Bochdalek hernias (9). In addition, there may be disruption of the normal anatomic continuity between the esophagus and stomach (10). Magnetic resonance imaging (MRI) can also aid in diagnosis, with the «bird’s beak sign» being a critical indicator of torsion, characterized by abrupt narrowing at the esophagogastric junction (11). These radiological signs are crucial in diagnosing gastric volvulus, assessing its severity, and determining the appropriate surgical approach.

The treatment of gastric volvulus in adults involves key steps aimed at correcting gastric rotation, relieving symptoms, and preventing recurrence. The first step in management is stabilization of the patient, including correction of electrolyte imbalances and hydration management (12). During surgery, two main approaches are possible: open and laparoscopic. In open surgery, a midline abdominal incision is made to allow complete exposure of the stomach; if

necrosis occurs, the stomach must be resected and an anastomosis performed if the local condition permits, plus or minus a feeding jejunostomy (13). If the stomach shows good vitality, derotation is performed to restore its normal position. Diaphragmatic defects, such as hiatal hernias, are corrected to prevent recurrence of the volvulus. A gastropexy is then performed to fix the stomach to the posterior abdominal wall, which helps prevent recurrence of the volvulus.

Laparoscopic surgery also allows derotation and gastropexy to be performed with greater precision and generally results in faster recovery and less postoperative pain (14).

Drainage of the herniated cavity after closure is preferred to avoid seroma, hematomas, and postoperative abscesses, especially in the case of an elderly woman on anticoagulants.

After the procedure, careful monitoring is necessary to detect possible complications such as perforation of the stomach and esophagus by manipulation, which must be checked by an air or blue test before closure.

Complications can manifest as either an externally directed fistula, mediastinitis, or generalized peritonitis (15). Postoperative rehabilitation includes the gradual reintroduction of nutrition, starting with fluids, as well as appropriate pain management and early mobilization. Hernia recurrence remains a serious and common complication.

Conclusion

Gastric volvulus, though rare, is a serious surgical emergency that necessitates rapid diagnosis and intervention. Its variable clinical presentation makes radiological imaging crucial for accurate diagnosis. Treatment typically involves stabilization and surgical correction, with laparoscopic methods offering quicker recovery.

In elderly patients with multiple comorbidities, the diagnosis of gastric volvulus is very challenging, and if missed or delayed, it can be life-threatening.

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