Acute gastric volvulus: a surgical emergency

Dear Editor,

Paraesophageal hernia is a small part of all hernias of the gastroesophageal junction. Anatomically it is characterized by intra-abdominal position of the gastroesophageal junction associated with a lateral hernial defect to the esophageal hiatus. It can lead to development of serious complications, thus representing a true surgical emergency.

Clinical report

A 68 year-old woman with hypercholesterolemia, osteoarthritis and common symptoms of dysmotility-like dyspepsia was admitted at our institution because of severe epigastric pain with nausea and vomiting. On physical examination the patient appeared affected, with severe epigastric pain on palpation but without peritonitis signs.

Leucocytosis (15,860 cells) with 86% neutrophils was the only abnormality on laboratory tests. On plain chest radiography (Fig. 1A) a large air bubble in the lower mediastinum with a fluid level was observed. Thoraco-abdominal CT scan showed the esophago-gastric junction below the esophageal hiatus, with intrathoracic displacement of the gastric fundus adjacent to the distal esophagus, findings consistent with paraesophageal hiatal hernia with possible volvulus of the herniated fundus (Fig. 1B).

Given the suspicion of gastric volvulus associated with paraesophageal hernia a nasogastric tube placement was attempted, without success. An urgent upper endoscopy was performed showing a wide area of proximal gastric torsion, consistent with volvulus. Endoscopic devolvolvulation was not achieved (Fig. 2A).
The patient underwent surgery urgently. Through bilateral subcostal laparotomy was accessed the hiatal region, observing the orifice of the left paraesophageal hernia with herniation and torsion of the gastric fundus without ischemic changes. Reduction, gastric detorsion and excision of the hernial sac were then performed. Hernial repair was performed with primary suture associated with Toupet fundoplication (Fig. 2B).

Discussion

Hiatal hernia is a very common disease in the general population, anatomically subdivided into three types: in type I (95%), there is a displacement of the gastro-esophageal junction into the chest, while in type II or paraesophageal, the gastroesophageal junction remains in its normal intraabdominal position, moving the gastric fundus into the mediastinum lateral to the esophagus. Type III or mixed hernia has the two previous components. Hernia types II or III can be associated with complications as incarceration, strangulation or volvulus of hernial contents.

Gastric volvulus is a rare entity, without a clearly established prevalence (1). According to the rotational axis of the stomach are two main types, the organ-axial (59% of cases) and mesentery-axial (29% of cases). About 2% of all cases are mixed volvulus, remaining unclassified about 10% (2). Maximum incidence of gastric volvulus occurs in the fifth decade of life and up to 70% of cases are associated with diaphragmatic defects or pathology of the gastroesophageal junction.

Clinically, acute gastric volvulus is characterized by epigastric pain associated with nausea and vomiting, and dysphagia. In severe cases, respiratory failure may also occur and even sepsis. The plain chest radiography is useful to guide the diagnosis, but most published work considers the computer tomography as the diagnostic test of choice (3).

If no signs of ischemia are suspected, endoscopic devolvulation can be attempted especially in patients at high surgical risk (4). In case of ischemia or failure of endoscopic detorsion, surgery still remains as the treatment of choice. If feasible, most authors prefer a primary suture using nonabsorbable material. For large defects are advised to use prosthetic material.

It is still debated the performing of routine antireflux surgery, gastrostomy or gastropexy to prevent the risk of new volvulus. Partial or total gastrectomy is indicated in the presence of necrosis or associated neoplasia.

Laparoscopic approach has been proven to be safe and feasible for the treatment of gastric volvulus, with low morbidity and mortality and with the benefits associated to minimally invasive surgery. However, it is not advisable this type of approach when there is a high clinical suspicion of associated visceral perforation (3,5).

References