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Case Report

Giant hiatal hernia with intrathoracic spleen: A case report ☆

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ABSTRACT

Hiatal hernia is a frequent pathology in the population; however, the most frequent hiatal hernia is type I, which accounts for up to 95% incidence, types II, III, and IV being less frequent and representing between 5% and 15%, and even less common are giant hernias. The definition of the giant hernia is still not exact in the literature; some authors define giant or massive hiatal hernia as one in which the hernia occupies more than 30% of the stomach and/or passes from other abdominal structures to the thorax. We describe the case of a patient with gastrointestinal symptomology without response to a proton pump inhibitor, with base exacerbation that required imaging studies, showing a large hernia defect passing to the thorax from abdominal organs (stomach, spleen, mesenteric fat), as well as alteration of the gastric and spleen axis with ascent in pancreatic body and tail, which corresponds to a giant hiatal hernia. Said pathology is very infrequent, with recurrences and

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postoperative complications. Our patient recovered from the surgical procedure with therapeutic success.

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Introduction

The esophageal hiatus is an orifice or opening in the diaphragm through which the esophagus and vagus nerves enter the abdominal cavity [1]. Likewise, hiatal hernia refers to herniation of elements of the abdominal cavity through the diaphragm esophageal hiatus towards the mediastinum [2]. Of the openings through the diaphragm, only the esophageal hiatus is vulnerable to visceral hernia because it looks directly towards the abdominal cavity, and therefore is directly subject to pressure tensions between the 2 cavities [3]. The key risk factors in the development of said pathology are overweight and advanced age [4], and among the other risk factors associated with it are multiple births, history of esophageal surgery, partial or total gastrectomy, and certain alterations in the skeletal system associated with decalcification and bone degeneration [5]. Epidemiologically, it represents a relatively frequent condition in the general population, and its incidence and prevalence are difficult to determine, due to the presence of the asymptomatic hiatal hernia. Some reports refer to the fact that 20% of the population has said alteration, and, of the total of patients with the pathology, close to 10% are asymptomatic [6]. According to the current anatomical classification, hiatal hernias are described in 4 types: a) Type I hernias or sliding hernias that represent more than 90% of the cases of hiatal hernia [7], b) Type II hernias or pure paraesophageal hernias, c) Type III hernias, a combination of types I and II, and d) Type IV hernias, which consist of a distinct structure of the stomach that herniates through the thoracic cavity (small intestine, colon, omentum, peritoneum, or spleen) [8] Figure 1.

The diagnosis of hiatal hernia can be quite challenging at times due to the change in the anatomy of the esophagogastric union during deglutition, respiration and movement [9]. To direct the diagnosis, 1 should integrate a complete clinical

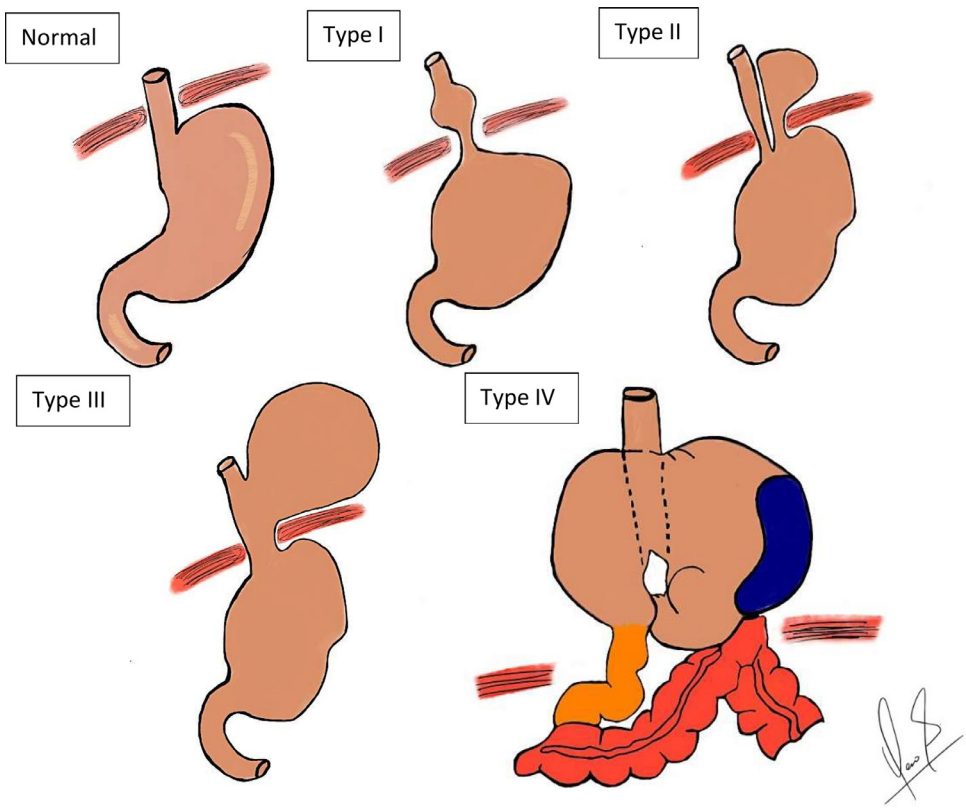

Fig. 1 – Anatomical classification of hiatal hernias. Normal anatomy: showing esophogastric union under the diaphragmatic hiatus. Type I: sliding of the esophogastric union to the posterior mediastinum through the esophageal hiatus. Type II: Herniation of the gastric floor through the esophageal hiatus with esophogastric union in normal position. Type III: Mixed hernia, with combination of types I and II hernias with displaced esophogastric union, as well as herniation of the gastric floor/body. Type IV: Herniation of other organs of the thorax in addition to stomach, such as colon, spleen, pancreas, and small intestine.

history and, in case of clinically suspicious conditoins, extend contrasted studies such as barium swallow and esophagogastricoduodenal studies, which continue to be current for the characterization of said pathology, and some authors consider it essential for the evaluation of the path of the alimentary bolus. Likewise, staggered studies are required with endoscopy and manometry. On the other hand, computerized tomography is indispensable for the anatomical characterization in giant hernial defects [10]. In regards to treatment, it depends on various factors, among which the type of hernia, whether it is asymmetrical or not, and patient comorbidities are considered.

On the other hand, it is clear that paraesophageal hernias have little or no response to conservative medical management with proton pump inhibitors, so the definitive treatment continues to be surgical [11].

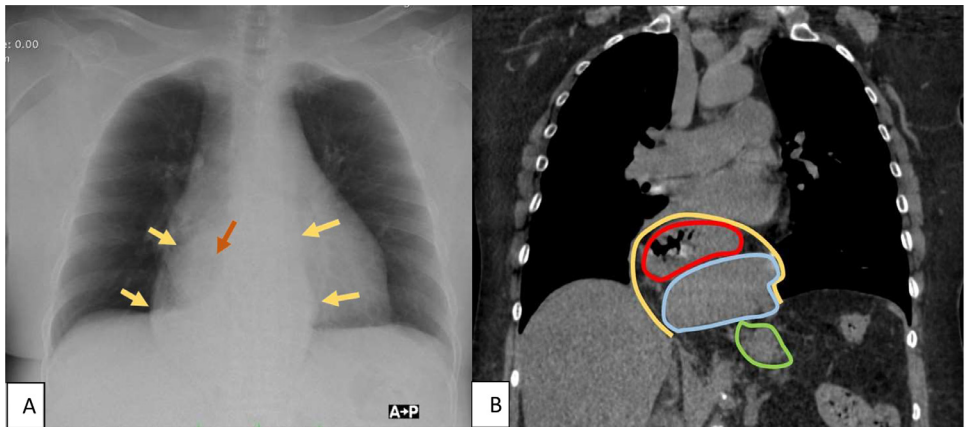

Fig. 2 – Posterior mediastinal mass associated with hydroair level, suggestive of gastrointestinal origin. (A) X-ray of anteroposterior thorax (AP) with evidence of radio-opaque image projected at the posterior mediastinal level (yellow arrows) with hydroair level (red arrow). (B) Thorax tomography in window of mediastinum in coronal reconstruction that shows hernial sac (yellow line), within the intrathoracic hernial sac the presence of gastric floor with alteration in its axis (red line), spleen (blue line), and with centralized pancreatic tail and cephalization (green line).

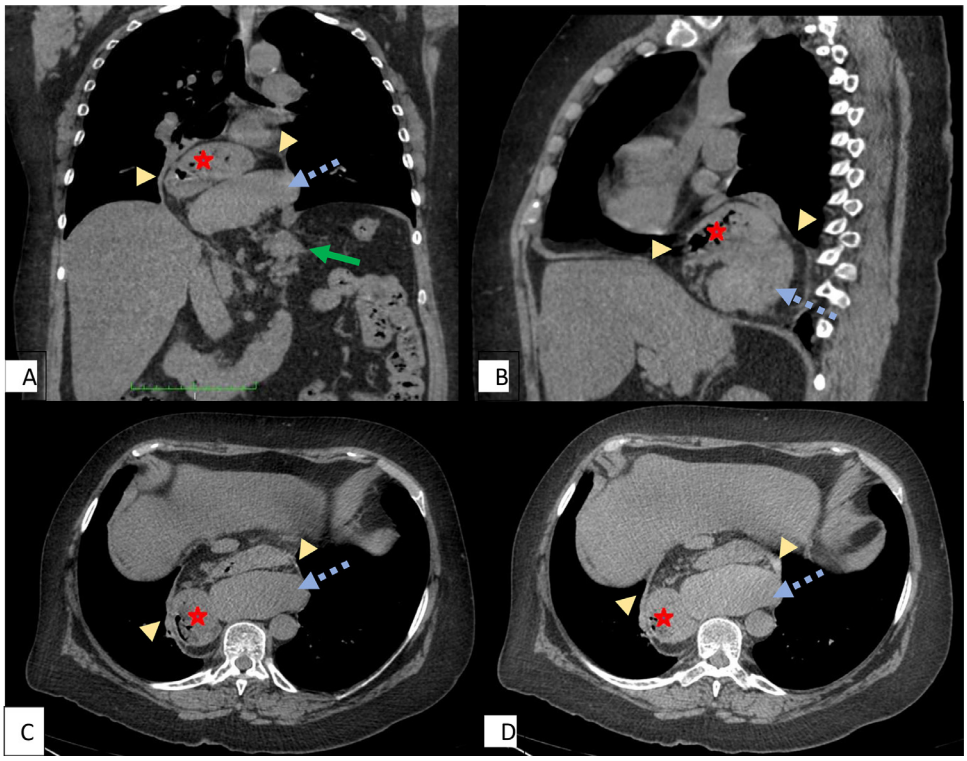

Fig. 3 – Thorax tomography in window for mediastinum showing grade IV paraesophageal hernia. (A) Coronal reconstruction, (B) Sagital reconstruction, (C and D) Axial acquisitions, all the cuts demonstrating hernial sac (head of yellow arrow), within the intrathoracic hernial sac presence of gastric floor with alteration in its axis (red star), spleen (dotted blue line) and with centralized pancreatic tail and cephalization (continuous green line).

Case presentation

The case deals with a female patient, 64 years of age, with history of overweight, gastroesophageal reflux and long data on management with proton pump, omeprazol 40 mg/day in the last 2 years, and hypertension managed with enalapril 20 mg/day. Symptoms of reflux exacerbated 2 months before visiting our service, with early satiety, nausea, dysphagia, pain in the thorax and epigastrium including with small volumes of food, and the last week emesis with poor intolerance of the oral via and weight loss, reason for the consultation. Upon physical examination, the patient was found with vital signs of cardiac frequency of 100 beats per minute, blood pressure of 140/90 mmHg, respiratory frequency of 20 breaths per minute and oxygen saturation of 96%. Physical examination showed dry segmental mucous, associated with distended abdomen, bland epigastrium, without other findings. Endovenous reposition of liquids was begun to resolve dehydration and was carried out through complementary studies. X-ray of the thorax and abdomen showed a posterior mediastinal mass associated with hydroair levels, suggestive of gastrointestinal origin (Fig. 2).

Before said findings, staggered imaging studies were performed, obtaining thoracoabdominal tomography with evidence of a hernia of the esophageal hiatus, paraesophageal type, with herniation of more than 30% of the stomach and alteration in its axis, as well as all the spleen inside the hernial sac, with displacement of the mesenterium and centralization and ascent of the pancreas tail and body (Fig. 3).

It was considered a giant paraesophageal hernia, type IV, with complete herniation of the spleen, and surgical procedure was scheduled. Surgical correction was performed with left posterolateral thoracotomy, finding a large hernial sac, which was dissected with visualization of the gastric floor and body and spleen, which was returned to the abdominal cavity, and plasty of the diaphragm was performed. Esophogastroduodenal postsurgical fluoroscopic control series showed an adequate position of the esophagogastroduodenal union, as well as infradiaphragmatic stomach with adequate filling and emptying, that showed successful resolution of the pathology (Fig. 4). 4 months after surgery, the patient reported weight

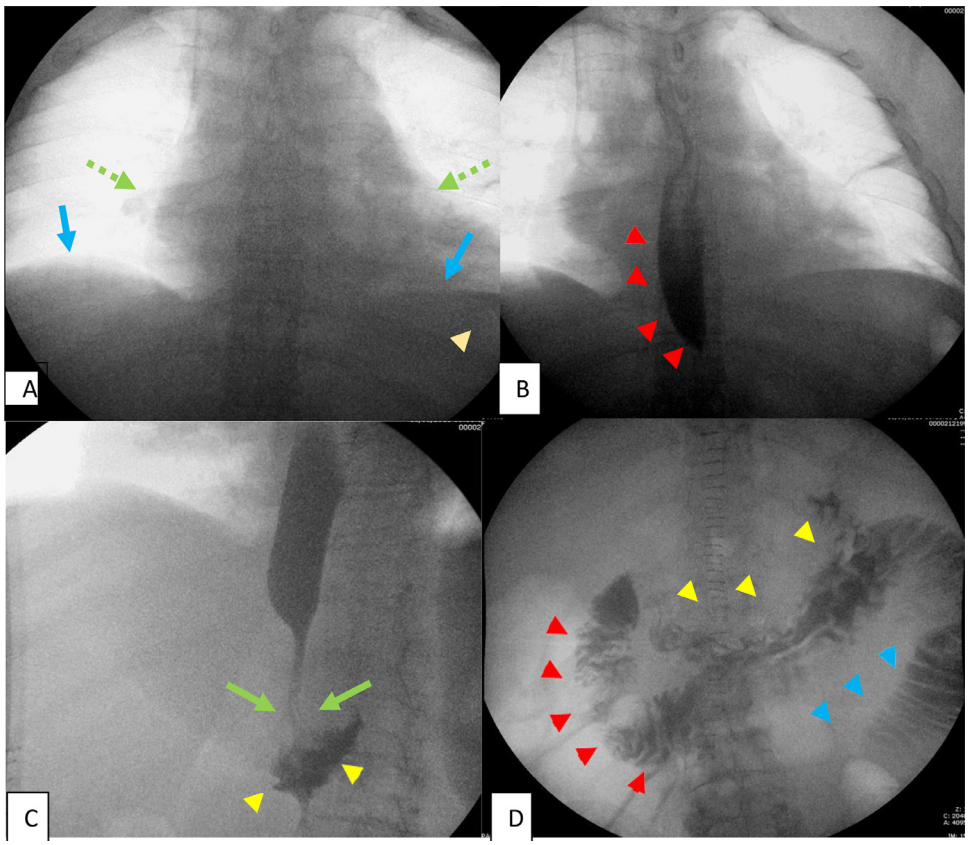

Fig. 4 – Esophagogastroduodenal series. (A) Mediastinum was identified without alterations (points of yellow arrows), as well as diaphragms (blue arrows) and normopositioned gastric bubble (point of blue arrow). (B) Swallow of hydrosoluble medium with adequate trajectory and opacification of the esophagus (points of red arrows). (C) Esophagogastric union under diaphragmatic hiatus (green arrow) and partial opacification of the stomach (points of yellow arrows). (D) Partial opacification of the stomach (points of yellow arrows) with adequate gastric emptying, as well as opacification of all the duodenal arcade (points of red arrows) and passage of the contrast medium to the jejune, conserving mucous pattern (points of blue arrows).

gain; she denies nausea, emesis, dysphagia, pain in the thorax and epigastrium, and oral intolerance, reasons for which he had previously consulted.

Discussion

The hiatal hernia is a frequent pathology in the population; the most frequent hiatal hernia is type I, which accounts for up to 95% incidence, types II, II, and IV being less frequent and representing between 5% and 15%, and even less common are giant hernias [1]. The definition of the giant hernia is still not exact in the literature; some authors define giant or massive hiatal hernia as one in which the hernia occupies more than 30% of the stomach and/or passes to from other abdominal structures to the thorax. The diagnosis requires clinical, radiological, and endoscopic integration, remembering that the use of contrast studies continues to be current and is essential. On the other hand, this kind of pathology requires surgical repair and ideally reinforcement mesh to reduce recurrence [12]. Advances in the surgical management have begun to mention robotic surgery as a view to the future to overcome the limitations of current approaches [13].

In our patient, we found a width of the esophageal hiatus of up to 5 cm, associated with ascent of more than 30% of the stomach, alteration of the gastric and splenic axis, passage of mesenteric fat, displacement of all the spleen and ascent of the tail and body of the pancreas, configuring a giant hiatal hernia that required, given the symptomology, surgical correction, with contrasting postsurgical study showing therapeutic success. Although this type of pathology is infrequent, each day it is diagnosed with more frequency before the advance and greater use of radiological studies, making the surgical approach within the framework of scheduled surgery and before an obstruction or volvulation, which significantly increases comorbidities.

Conclusions

The type IV paraesophageal hernia is rare and uncommonly presented. Its content of abdominal structures is variable; however, the presence of the spleen within the hernial sac, as well as alteration of the spleen-pancreas axis, is even more infrequent, and there are few cases described. Evaluation to make a correct diagnosis includes a complete clinical history, thorax X-rays, esophagogastroduodenal series, esophagogastroscopy and manometry and, in some cases, tomography to adequately characterize the pre-surgical anatomy. In these patients, an adequate diagnosis and therapeutic choice, with multidisciplinary approach, may prevent serious complications and improve the prognosis and survival of the patient. Radiologists are key members of this team and should be at the vanguard of diagnosis of this pathology.

Patient consent

Written informed consent for the publication of this case report was obtained from the patient.

Ethical responsibilities

The authors state that for this research no experiments were performed on humans or animals.

Data confidentiality

The authors state that this article does not include patient data.

Protection of people and animals

The authors state that the procedures followed comply with the ethical standards of the responsible committee on experimentation and the World Medical Association and the Declaration of Helsinki.

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