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Laparoscopic treatment in Type IV Giant Paraesophageic Hernia and intestinal occlusion a case report



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ABSTRACT

INTRODUCTION: A Giant Hiatal Paraesophageal Hernia (GPEH) is a Hiatal Hernia (HH) that includes more than 30% of the stomach in the thorax. The gold standard form of repair today is the laparoscopic abdominal approach in elective scenarios. Laparoscopic HH repair advantages include, less postoperative pain, small incisions, reduced postoperative respiratory complications are reduced, shorter hospital stay. The objective of this paper is to describe a patient undergoing with upper intestinal obstruction and a GPEH Type IV, approached laparoscopically.

CASE PRESENTATION: We received a female patient 59 years old, she came with symptoms abdominal pain, emesis of intestinal characteristics and obstipation, with an evolution of 5 days. She also referred dyspnea; she went to another institution where made a CAT scan finding a GPEH. We decided to realize the procedure laparoscopically. We follow the principal objectives, reducing the hernia, dissecting al de hernia sac excision, Hiatal reparation with no mesh, and Nissen type fundoplication without Collis Gastroplasty. The patient stayed for seven days for surveillance and when the leukocyte and LDH went to a regular rate patient was discharged. With no complications with normal intestinal function and nearly no pain.

DISCUSSION: We present a GPEH case associated with upper intestinal obstruction, with clinical findings that suggested ischemia. The approach of the treatment was abdominal laparoscopy.

CONCLUSION: In elective patients Laparoscopy is superior than abdominal approach. Randomized trials comparing laparoscopic versus open approach are needed to conclude that laparoscopic approach is superior to open approach, in potentially GPEH complicated patients.

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1. Introduction

Henry Ingersoll Bowditch mentioned the term Paraesophageal Hernia in 1853 [1,2]. A Giant Hiatal Paraesophageal Hernia (GPEH) is a Hiatal Hernia (HH) that includes more than 30% of the stomach in the thorax [2]. There is no defined etiology, but two theories are contemplated. First the augmented intraabdominal pressure and the second is the opening of the diaphragmatic hiatus [3,4]. The prevalence of HH is 9% of all fundoplication, and GPEH is 0.3–15% of all HH [3,5].

The typical clinical findings in GPEH are chest pain, heartburn, epigastric pain, dysphagia, vomiting, and anemia. Patients tend to be old patients with a long clinical history of gastroesophageal

reflux disease, GERD [4]. To our knowledge, there is no other description of a patient undergoing with a GPEH as a cause of upper intestinal occlusion rather than oral intolerance. In elective patients workup diagnosis include, barium esophagogram, upper endoscopy, manometry, and computed scan tomography not routinely required [3].

In all patient with HH the treatment is surgery unless the comorbidities represent a substantial surgical risk. The urgency of the treatment is proportional to the potential hazard of incarceration and strangulation [3]. In most scenarios the decision to operate is based on the patient symptoms [3]. There are two main approaches to surgical treatment thoracic or abdominal (open or laparoscopic). We found no randomized trials that compare open vs laparoscopic approach in patients with GPEH or HH and surgical urgency. In elective scenarios the standard for repair today is the laparoscopic abdominal approach [4]. Laparoscopic HH repair advantages include, less postoperative pain, small incisions, reduced postoperative respiratory complications, shorter hospital stay [2,3,6–10].

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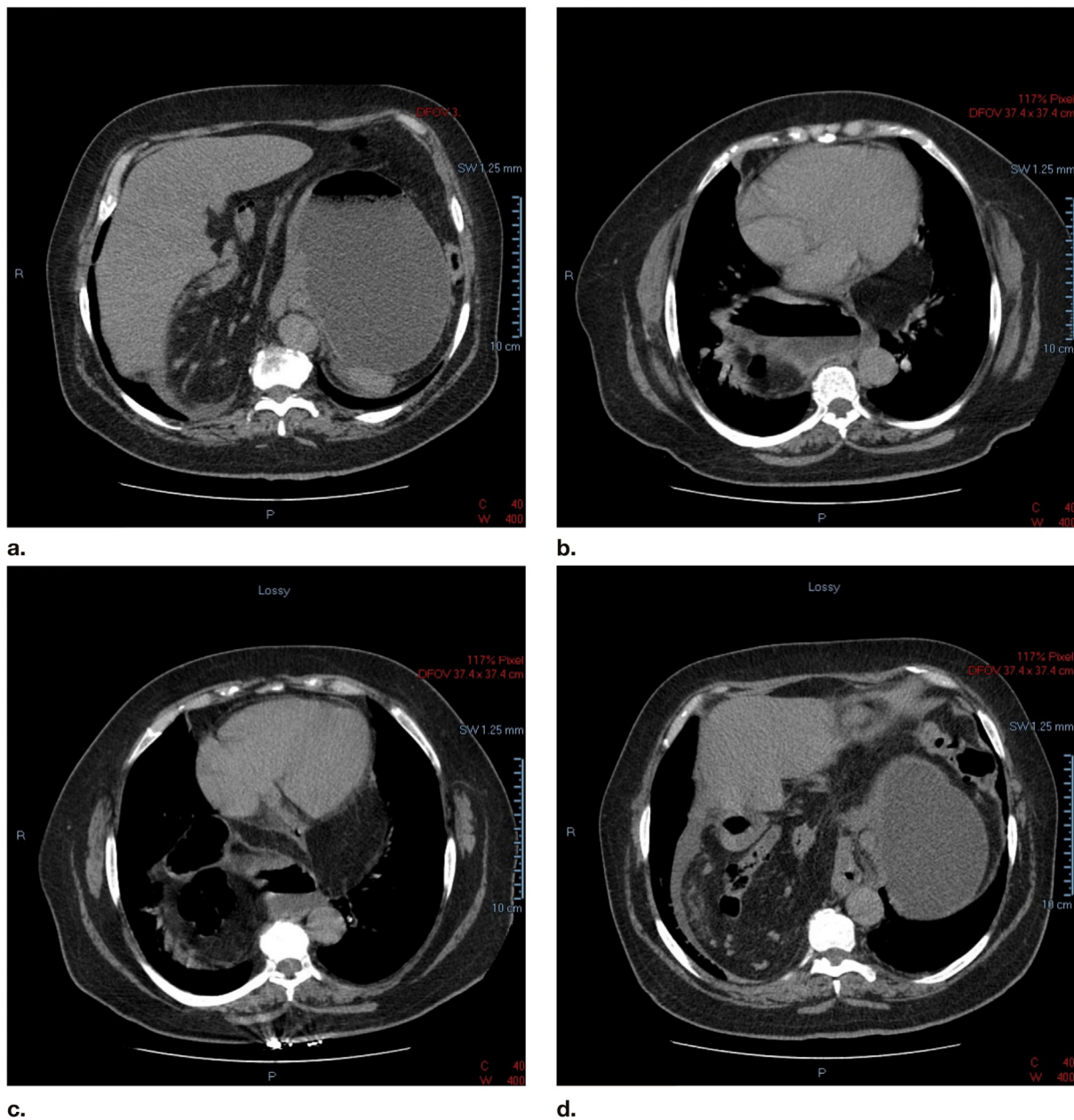


Fig. 1. Omentum herniated to the thorax and a portion of the stomach in retromediastinum space.

The laparoscopic treatment in an emergency scenario is not well established. There is a description in literature that represents 39% of the patients with HH. The indication of urgent surgery appears to be suspected ischemic complications. The conversion rate described is 31%, complications and mortality appear to be similar between elective and emergency treated patients. It is important to mention that patients who underwent to open surgery in emergency scenarios tend to have greater mortality rates than patients that completed by laparoscopic approach, suggesting that laparoscopy could be a better option than open [1].

The objective of this paper is to describe a patient undergoing with upper intestinal obstruction and a GPEH Type IV, approached laparoscopically. To our knowledge, there is no literature in these related problems, and we want to share our experience in this case report. This paper adds to the literature a combined scenario of

GPEH and Upper Intestinal Obstruction, we also provide and actualized revision of literature.

2. Anatomic classification of Hiatal hernias

Type I hernias: are sliding Hiatal hernias where the gastroesophageal junction migrates above the diaphragm. The stomach remains in its natural longitudinal alignment, and the fundus remains below the gastroesophageal junction [4,7,8].

Type II hernias: Hernias are pure PEH, The gastroesophageal junction remains in its normal anatomic position, but a portion of the fundus herniates through the diaphragmatic hiatus adjacent to the esophagus [4].

Type III hernias: hernias are a combination of Types I and II, with both gastroesophageal junction and the fundus herniating through the hiatus. The fundus lies above the gastroesophageal junction [4].

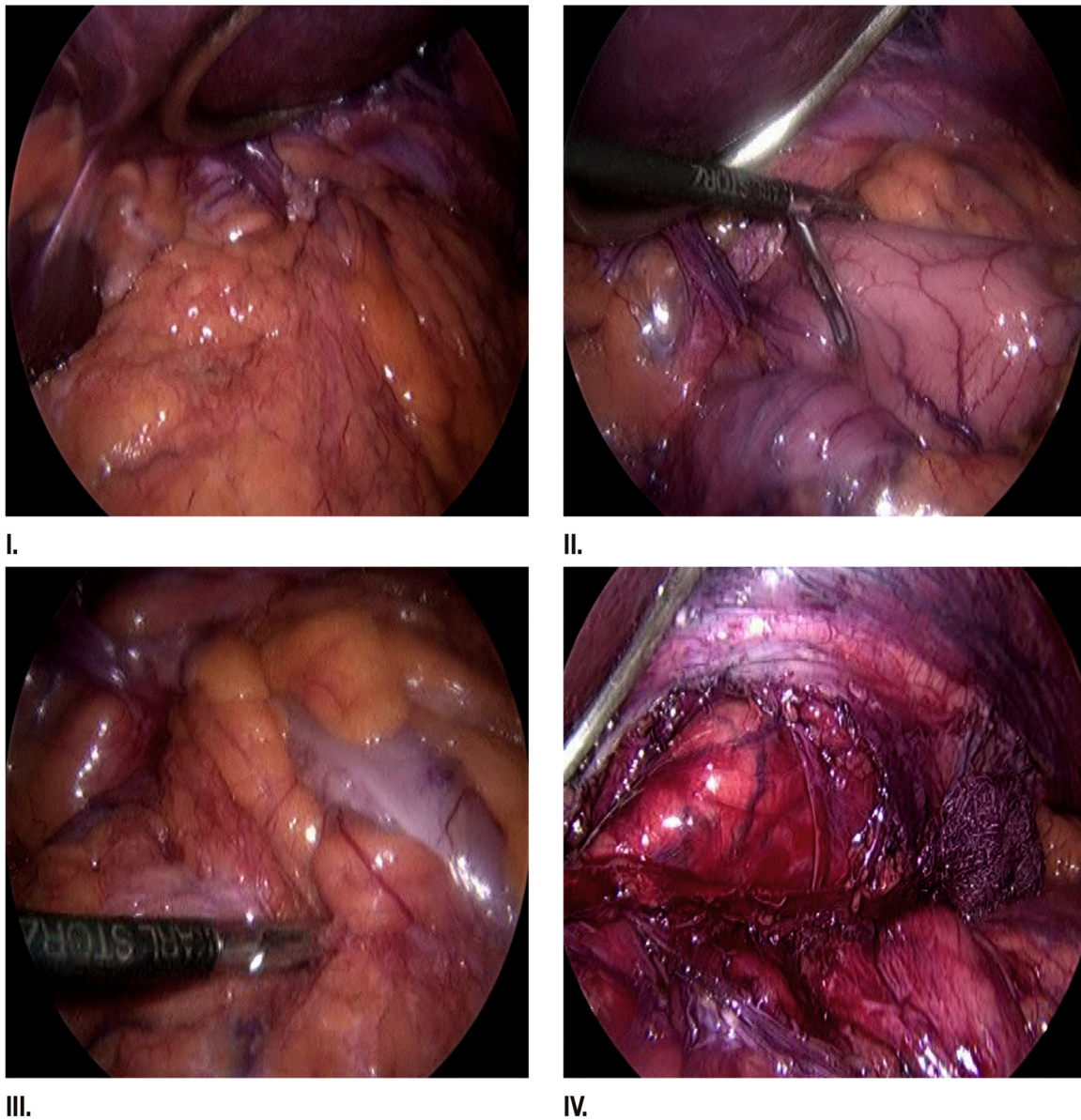


Fig. 2. I. The initial view of the Hiatus. II. Reduction of the stomach III & IV. Reduction and dissection of the Colon.

Type IV hernias: Hernias are characterized by the presence of a structure other than the stomach, such is the omentum, colon or small bowel within the hernia sac [4].

3. Case report

Following SCARE Guidelines [11] and with the patient consent we present the case of a Hispanic unemployed, female patient 59 years old, with a history of high blood pressure and overweight. Surgical history of OTB at the age of 29. She came with symptoms abdominal pain, emesis of intestinal characteristics and obstipation, with an evolution of 5 days. At the examination, no peristalsis was found in abdominal auscultation, and in thoracic auscultation intensive peristaltic was noticed. She also referred dyspnea; she went to another institution where made a CAT scan finding a GPEH (Fig. 1). Our laboratory findings leukocytosis, raised LDH and lactate. We came with the diagnosis of upper intestinal occlusion due GPHE with a chance incarcerated complication. The patient prior to surgery was stable and in good conditions for intervention, we administered IV crystalloids and antibiotics. The surgery was

performed by attending surgeon Dr. Gracia-Puig with advanced training in endoscopy and minimal invasive procedures. With these results, we decided to realize the procedure laparoscopically. Under anesthesia we proceed to perform a diagnostic laparoscopy. We found HH with a hiatus of 4×4 cm and the hernia containing 100% stomach, omentum 100%, and transverse colon. We follow the principal objectives, reducing the hernia, dissecting al de hernia sac excision, Hiatal reparation with no mesh, and Nissen type fundoplication without Collis Gastroplasty (Fig. 2). The dissection took around 5 h, unfortunately we had to perform omentectomy, with the loss of some blood vessels. The fundoplication was performed with Prolene 0-0 USP, with no adverse events. After the mediastinal dissection, sac excision and fundoplication we had a 4 cm long intraabdominal esophagus with purple coloration. For this reason, we monitored LDH levels daily and in rising LDH scenarios reintervention would be performed. The patient stayed for seven days for surveillance and when the leukocyte and LDH went to a regular rate patient was discharged. With no complications with normal intestinal function and nearly no pain. Follow up was no possible, the patient didn't came back to additional checkups (Fig. 3).

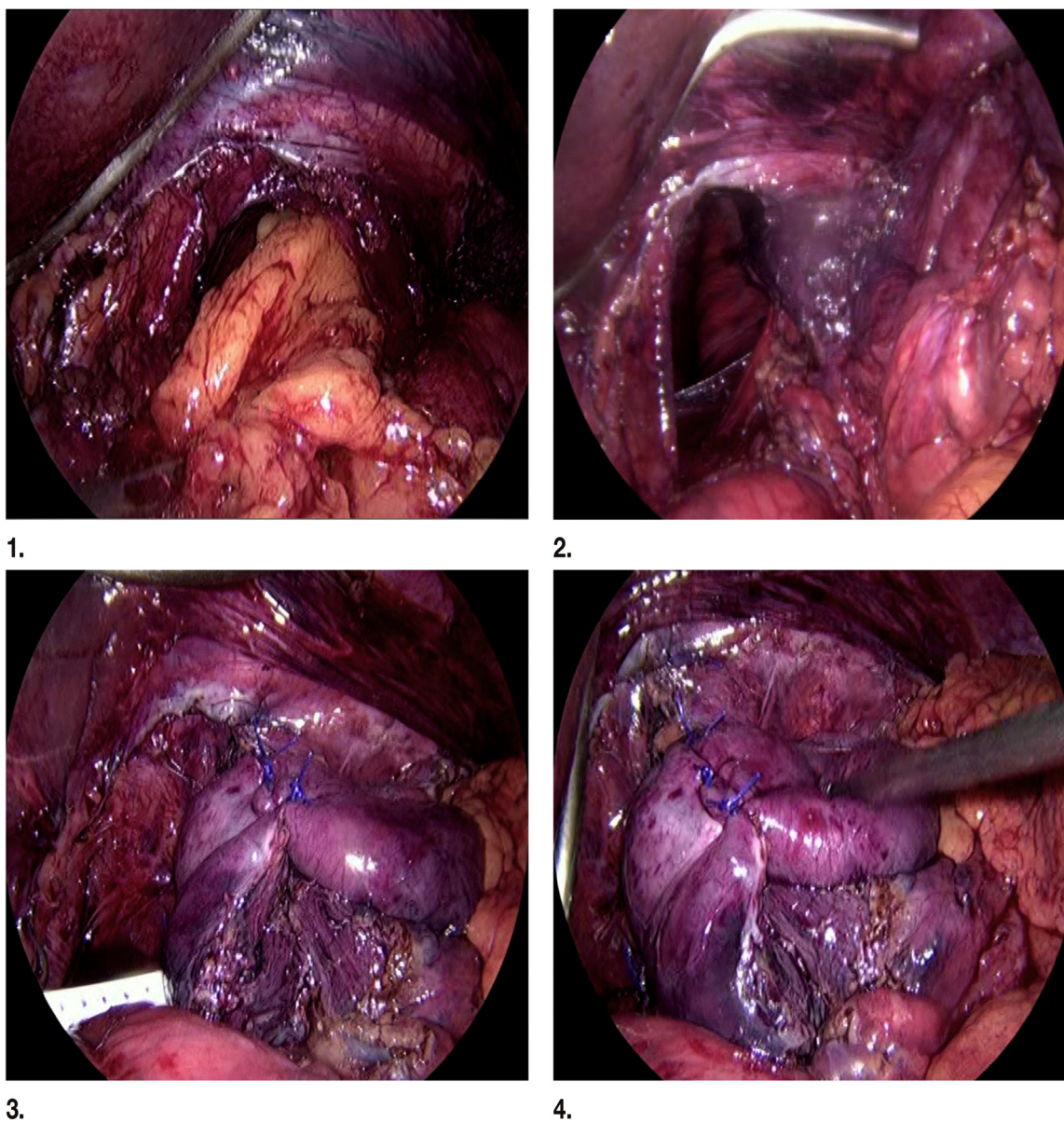


Fig. 3. 1. Final steps in such excision. 2. Hiatal view with a small portion of the intraabdominal esophagus. 3&4 Nissen fundoplication.

4. Discussion and conclusion

We present a GPEH case associated with upper intestinal obstruction, with clinical findings that suggested ischemia. The approach of the treatment was abdominal laparoscopy. The surgical time 5 h, we report an adequate evolution with no complications. Fortunately, a conversion was not required, and we have no complications to report. We admit that randomized trials comparing laparoscopic versus open approach are needed to conclude that laparoscopic approach is superior to open approach, in potentially GPEH complicated patients.

From the reinforcement perspective: we decided not to use a mesh. In the literature, there is no evidence recommending or contradicting its use [4,12,13]. The main benefit of mesh use is the minor short term recurrence rate from 0 to 22% against 42% with suture cruroplasty [13,14]. Outweighing this benefit with the possible complications we made our decision. Many complications are described in elective scenarios. The most feared: esophageal erosions, effusion and tamponade [14]. There are also other com-

plications like: adhesions, dysphagia or stenosis. Other mesh issues are, the cost and longer surgical time [4,13,14]. Our main objective was to solve the occlusion effectively and its etiology without adding morbidity. We were concerned by the esophagus and stomach color. For this reason, we monitored LDH daily. The LDH levels were dropping and we saw substantial clinical patient improvement suggesting no vascularity problems [4,14].

Conflicts of interest

None.

Funding

None.

Ethical approval

We had the written consent from the patient. No experimental intervention was included in the development of this case report.

Consent

We had the written consent from the patient. No experimental intervention was included in the development of this case report.

Author contribution

Rendón-Medina Marco Aurelio, First author second surgeon during the surgery.

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Saucedo-Saldivar Jocelyn, data management, literature reviewer.

Sánchez Tellez Erick, data management literature reviewer.

García-Puig Marco, Attending doctor, first surgeon during the surgery.

All the authors contributed in the intellectual development of this paper.

Guarantor

Rendón-Medina Marco Aurelio, First author second surgeon during the surgery.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.ijscr.2017.07.042>.

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