

# Laparoscopic approach of a giant paraesophageal hernia. A case report

César Alberto Silva Mendoza M.D.  
Raúl Francisco Luna Lugo M.D.  
Irlanda Guerrero Barajas M.D.  
Ricardo Chávez Coss M.D.  
Gabriel Iván González Gutiérrez M.D.  
Daniela Baeza Ruiz M.D.

*Ciudad Juárez, Mexico.*

Case Report

General Surgery

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**BACKGROUND.** Introduction: Laparoscopic repair is the standard treatment for giant paraesophageal hernia. The repair of paraesophageal hernia is technically challenging and controversial. Case report: A 61 years old female with obesity, who presents 7 months history with partial tolerance to oral intake, dyspnea and 2 months weight loss evolution. Physical exam with abdominal distension, tenderness to palpation in epigastrium, hypoventilation and dullness at the base left lung. Chest X-ray reports a mass with air fluid levels inside. Tomography shows and confirm gastric and colonic content. Therapeutic laparoscopy was performed with intra-abdominal return of viscera, resection of hernia sac and Nissen-type fundoplication. X-ray were taken 48 hours later with full recovery. Conclusion: Paraesophageal hernia can be repair successfully by laparoscopic approach. All symptomatic patients should be surgically treated, when operation is possible. It seems reasonable that asymptomatic or minimally symptomatic patients do not necessarily require surgery and that a more selective approach should be used.

**KEY WORDS:** Paraesophageal hernia, laparoscopy.

## Introduction

Giant hiatal hernia with intrathoracic stomach is a rare disease<sup>1,2</sup>. Hernia is classified into four types according to the position of the gastroesophageal junction and the proportion of the herniated stomach<sup>3</sup>. 95% are type I, small sliding hernias and are rarely associated with serious complications. The remaining 5% are classified as giant paraesophageal hernias and are associated with significant complications<sup>4,5</sup>.

Laparoscopic paraesophageal hernia repair has evolved over time, and experts in the field have made modifications to the technique to reduce the rate of recurrence<sup>6</sup>. Laparoscopic management is currently the management of choice due to its reduced morbidity, short hospital stay, and better pain management<sup>7</sup>. The need for surgical correction in asymptomatic or mildly symptomatic patients is a subject of ongoing debate. Despite the fact that the incidental finding of a giant paraesophageal hernia in a large number of patients, it is believed that life-threatening complications can occur if the hernia is not managed surgically<sup>8</sup>.

The case of a patient with a long-standing giant paraesophageal hernia with an insidious clinical picture is presented

## Case report

This is a 61-year-old female patient, obese, with no other relevant history for her current condition. Patient who comes to the general surgery consultation referring a 7-month history of mild epigastric pain, dyspnea on medium efforts, with partial tolerance to solids and liquids, nausea sometimes, vomiting and the loss of 10 kg of weight in the last two months. On physical examination, the patient was hemodynamically stable: Blood pressure 130/80, heart rate 96 beats per minute, patient awake, alert and conscious, cooperative, hydrated oral mucosa, chest is dullness on the left lung base with hypoventilation in its apex, distended abdomen with peristalsis and slight pain on superficial and deep palpation in the epigastrium. Chest X-ray shows 70% atelectasis in left hemithorax with air-fluid levels inside (**Fig.1**). Laboratories: leukocytes of 8,100 units per microliter, hemoglobin of 13.1g / dl, platelets of 204,000, clotting times within normal parameters. Tomography confirms the presence of a giant paraesophageal hernia with a large hernial sac containing gastric content and a transverse colon inside (**Fig.2**). Patient in the operating room under balanced general anesthesia, sterile fields, french position and trocar placement.

*From the Department of General Surgery at Hospital General de Ciudad Juárez, Mexico. Received on August 25, 2021. Accepted on August 30, 2021. Published on September 1, 2021.*

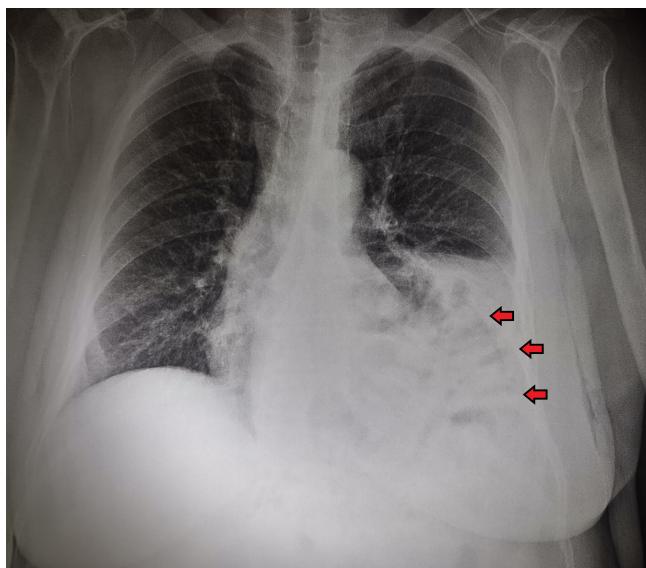


Figure 1. Transverse colon.

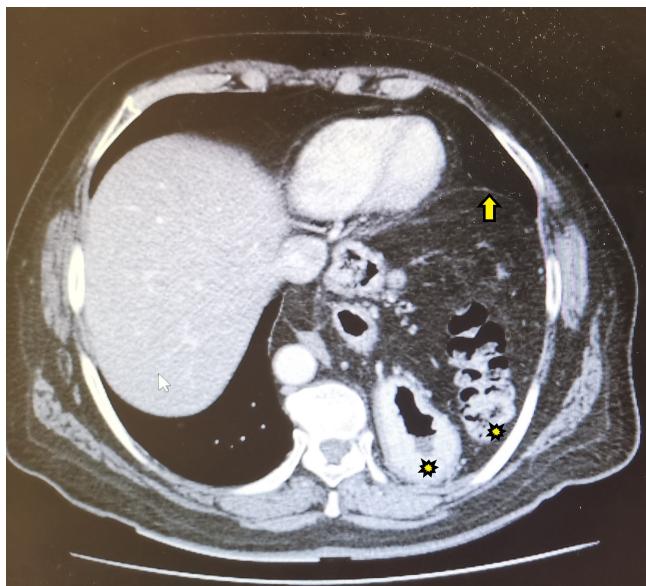


Figure 2. Tomographic study with hernial sac and its contents. Colon and stomach (asterisks), hernial sac (arrow).

In the first stage, diagnostic laparoscopy is performed, showing herniation of colonic, gastric and epiploic contents inside, laparoscopic traction of the elements is performed, with success in colon and omentum, gastric content and hernial sac with intrathoracic fixation (Fig.3,4), dissection of loose adhesions releasing gastric content, traction of hernial sac with resection of the same (Fig.5), Left lung with atelectasis in its 70%, with moderate expansion to the Valsalva test (Fig.6), contracted parietal pleura was opened, thus allowing intrathoracic expansion of the left lung. In a second stage, diaphragmatic abutments were repaired with two simple Nylon 2-0 points, short vessel dissection was performed, 360-degree anterior Fundoplication of the Floppy Nissen type was performed, exhaustive hemostasis, and the surgical act was concluded. Patient with a favorable evolution and

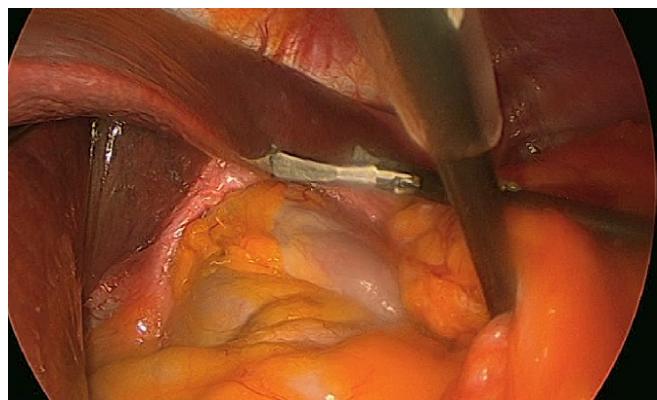


Fig.3. Intrathoracic colon

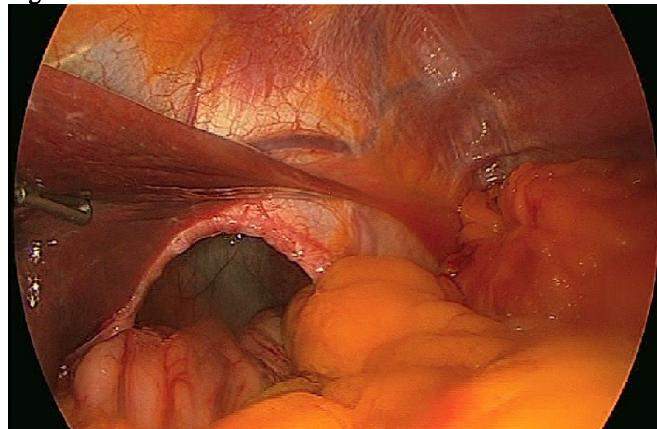


Fig.4. Intrathoracic stomach

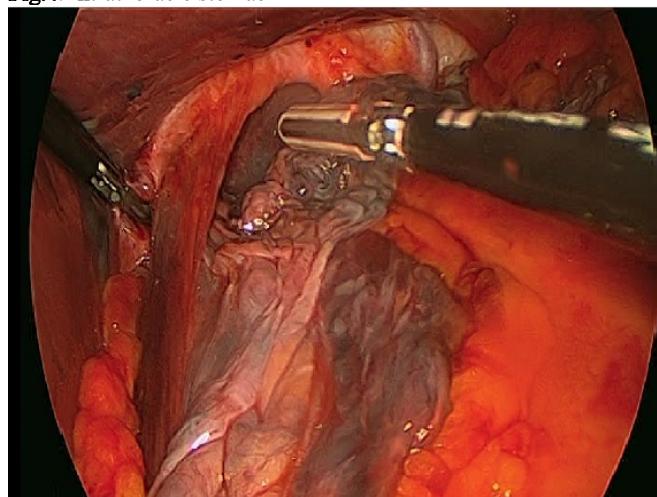


Fig.5. Hernial sac resection

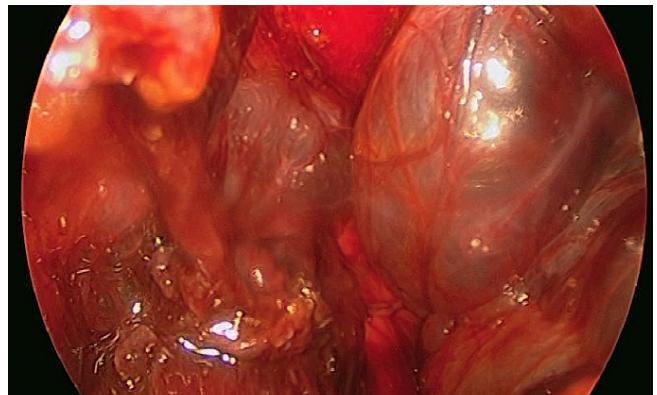


Fig.6. Valsalva-proof expansion



**Fig.7.** Postoperative chest radiography 48 hours after surgery

respiratory physiotherapy during 48 hours, a control radiograph was performed showing left lung re-expansion, she was discharged due to improvement (Fig.7).

### Discussion

The term "giant" paraesophageal hernia appears frequently in literatures, although its definition is inconsistent. Multiple authors have suggested that giant paraesophageal hernias are defined as type III and type IV, but most limit this term to those paraesophageal hernias that have more than 30% or 50% of the stomach in the thorax<sup>9</sup>. Our patient had more than 50% of the stomach inside the thoracic cavity, classifying our hernia as type IV with colon and stomach inside. The evolution of the laparoscopic technique has allowed that in recent years most of the procedures faced by the surgeon are not only feasible, but also safe in this way<sup>10</sup>.

Most of the hernias are discovered as an incidental finding on chest x-ray or computed tomography without any significant symptoms. Giant hernias with an intrathoracic stomach can manifest as mediastinal masses, and really often with air-fluid levels<sup>2</sup>. In the case presented, the patient was initially diagnosed in the emergency room due to symptoms presented, that motivated to request an X-ray and tomographic study, confirming the presence of stomach and intrathoracic colon, as reported in the literature which is of great importance for the surgical decision.

While sliding hiatal hernia can be treated non-surgically in the absence of symptoms, this is not the case for paraesophageal hernia. Very few patients with paraesophageal hernia are truly asymptomatic, they are more likely to be used to the symptoms than to being asymptomatic. The risk of progression from

asymptomatic to symptomatic in paraesophageal hernia is 14% per year<sup>9,11</sup>.

Traditionally, elective surgery was often recommended for each patient, regardless of symptoms, with the aim of preventing acute complications and avoiding significant mortality and morbidity associated with emergency surgery. However, the majority of this patient population is often elderly with extensive comorbidity, converting them on poor surgical candidates<sup>8</sup>. In multiple studies, results were compared with elective surgical treatment vs emergency surgery, operative mortality after elective surgery was 1.3% (0.5-2.0%). In contrast, postoperative mortality in emergency surgery varies between 17% and 54%<sup>12</sup>. The case presented, as the literature, is an elderly patient with a giant paraesophageal hernia, obese with mild respiratory and digestive symptoms that could be managed conservatively with non-emergency surgery; however, the patient refers to a long time evolution, affecting her quality life, avoiding activities of daily living, which is why it was decided to individualize the treatment, and manage it in a timely manner.

Other studies strove to compare watchful waiting with elective laparoscopic repair and concluded that patients would benefit more from watchful waiting. Reflecting these heterogeneous indications for surgery, the American Gastrointestinal and Endoscopic Surgeons (SAGES) guidelines suggest careful evaluation of each individual case<sup>8,9</sup>.

### Conclusion

Giant paraesophageal hernias involving the intrathoracic stomach are a rare entity, however, in the literature there are multiple published cases showing that the laparoscopic approach is currently the cornerstone of treatment with some differences in recurrence between each study. Despite this, it should be noted that this entity is most likely underdiagnosed, due to the multiple causes and insidious symptoms that it presents in each patient, and can lead to a delay in diagnosis. On the other hand, in elderly patients, their symptoms are led by their lack of appetite, weight loss, early satiety, gastroesophageal reflux, which is a symptom that in many cases is socially thought to occur naturally by aging.

In the case presented, we can realize that once the diagnosis of a giant paraesophageal hernia has been made, the literature does not present precise indications on when to intervene surgically, especially in elderly patients, who are generally considered less suitable for surgery, watchful waiting is a valuable therapeutic alternative. At this point it can be mentioned that a standard elective operation is not needed in all asymptomatic or mild symptomatic

patients, however, it is justified to consider surgical treatment, since the symptoms only get worse over time.

Finally, patients with evident respiratory and digestive disabling symptoms, incarcerated or strangulated hernias, type II paraesophageal hernias should be operated on regardless of their size whenever possible.<sup>11</sup>

As mentioned in the literature, our decision to perform a surgical procedure was emphasizing the importance of a primary clinical evaluation, accompanied by surgical advice, assessing the risk-benefit of the definitive repair versus tight observation, taking into account the type of hernia, size extension, symptoms, viscera involved, the age of the patient and the perioperative risk and the prescription of an effective and individualized treatment.

### Conflicts of interests

There was no conflict of interest during the study, and it was not funded by any organization.

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César Alberto Silva Mendoza  
Department of General Surgery  
Hospital General de Ciudad Juárez  
Universidad Autónoma de Ciudad Juárez  
Ciudad Juárez, Mexico  
[drcesarsilva92@gmail.com](mailto:drcesarsilva92@gmail.com)