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Case Report
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Intestinal Obstruction due to Broad Ligament Hernia: Laparoscopic Treatment: Case Report

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Abstract

Introduction: Intestinal obstruction due to broad ligament hernia is a serious condition with a very low frequency, which requires a rapid diagnosis and adequate treatment. The support with images, Computed Axial Tomography (CT) with intravenous contrast allows, in some cases, to confirm the diagnosis and provide an approximation of the vitality of the compromised bowel loop. The laparoscopic approach is a tool that should be considered when facing this pathology.

Case Report: A 30-year-old woman, without previous abdominal surgeries, who consulted for a 48-h history of abdominal pain associated with nausea and vomiting. A CT scan of the abdomen and pelvis was performed showing pathological dilation of the small intestine loops and a change in caliber in relation to the broad ligament. Laparoscopic abdominal exploration was performed reduction of the internal broad ligament hernia and closure of the hernial defect. Postoperative evolution without difficulties and was discharged after 24 h. Postoperative controls without evidence of complications.

Discussion: In cases of intense acute abdominal pain without a history of previous abdominal surgeries and with difficult management with usual analgesics, intestinal obstruction should be considered. Abdominal and pelvis CT with contrast is the test of choice that allows planning a treatment strategy and sometimes making a diagnosis. Laparoscopic resolution of bowel obstruction due to broad ligament hernia in this case was possible without complications and with a short hospital stay.

Conclusion: Intestinal obstruction due to hernia of the broad ligament is a clinical event that requires diagnosis and prompt treatment. The CT of the abdomen and pelvis was very useful in this case, providing information on the vitality of the compromised loop and an accurate diagnosis. The laparoscopic approach and resolution was successful, but there is insufficient evidence to recommend it for all patients.

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Introduction

Intestinal obstruction due to hernias is a common condition, however when it occurs due to internal hernias it is very rare, with an incidence of less than 1% [1]. Internal hernias are produced by the introduction of hollow viscera, most commonly the small intestine due to its great mobility, through natural or caused defects in the abdominal cavity [2]. They can also be caused by intestinal malrotation or peritoneal adhesions, but are less frequent [3]. The most common internal hernia is the paraduodenal hernia, which corresponds to approximately 50% of all internal hernias [4], while broad ligament hernias account for 4% to 7%. Broad ligament hernia was first described by Quain in an autopsy in 1861 [5], it is considered a serious condition due to the risk of strangulation and perforation of the viscus.

Case Presentation

A 30-year-old female patient with a history of depression under treatment, with no other medical or surgical history. Presents to the emergency service of Clínica Alemana of Santiago with a story of 48-h of abdominal pain, colicky, diffuse, of progressive intensity with maximum intensity, associated with nausea and vomiting, without diarrhea, fever or urinary symptoms. She was admitted hemodynamically stable, afebrile, alert, well hydrated and perfused. The physical examination highlights a soft, distended, depressible abdomen, diffusely painful, with signs of peritoneal

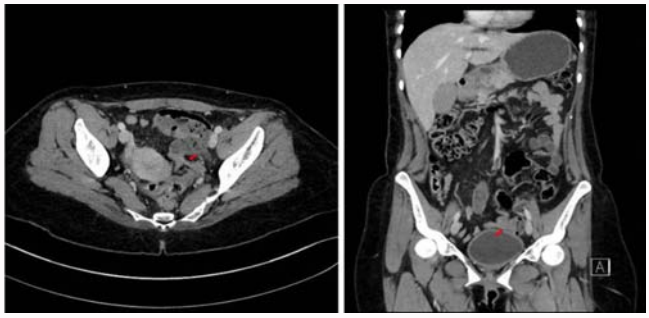

Figure 1: Abdominal and pelvic CT with contrast that shows the passage of small intestine and adipose tissue through the broad ligament with proximal dilatation of the small bowel and distal collapse.

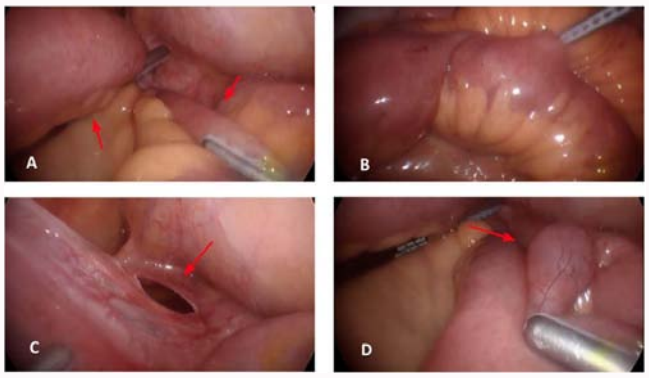

Figure 2: Images during laparoscopic surgery. A) Change of caliber in the small bowel. B) Vital and ecchymotic loops. C) 20 mm defect in broad ligament. D) Meckel's diverticulum.

irritation, the rest of the physical examination without alterations. In the hospital admission laboratory, mild leukocytosis (10,100) without elevated CRP, slightly elevated amylase (126) and normal lipase stand out. Due to the persistence and intensity of pain, a computed tomography was performed, which revealed dilated loops of the small intestine containing "pseudo-feces" and distal collapse. It is possible to identify the passage of a group of loops and mesenteric adipose tissue through the left broad ligament (Figure 1). Surgical management was decided for laparoscopic abdominal exploration. With the informed consent given by the patient, under general anesthesia and in the Trendelenburg position pneumoperitoneum is established through the umbilical access with installation of three trocars (umbilical, left flank and right flank). The examination revealed dilated loops of the small intestine with a change in caliber (Figure 2A) associated with herniation of the intestine through a defect in the broad ligament. The hernia is reduced, finding vital and ecchymotic loops (Figure 2B), in addition to a 20-mm broad ligament defect (Figure 2C). As an incidental finding, a small Meckel diverticulum within the hernia stands out, uncomplicated and with a broad base (Figure 2D). Then, the defect in the broad ligament is repaired with a PDS suture with a continuous stitch, cleaning the cavity and closing the umbilical access. Patient evolves favorably, stable, without pain, nausea or vomiting, with restoration of intestinal transit and good oral tolerance. She is discharged 24 h after surgery, without complications.

Discussion

An Internal Hernia (IH) is the protrusion of the abdominal viscera through an opening in the organs, mesenteries or ligaments of the peritoneal cavity, which can be congenital or acquired [2]. Of all internal hernias, the broad ligament is rare, however it is the most common internal pelvic hernia (4% to 7% of all internal hernias) [6]. Among the causes of broad ligament hernia are surgical interventions, pelvic inflammatory disease, obstetric trauma, and birth defects. 80% of internal broad ligament hernias are seen in multiparous women, and the most common is hernia of the small intestine (90%) [2]. Hunt AB describes three types of broad ligament hernias [7] (Table 1). In this case, a fenestrated hernia is observed. Although Computed Tomography (CT) with contrast is the first-line imaging technique for the diagnosis of internal hernias, the diagnosing this remains a challenge. To recognize IH of the broad ligament, a closed loop small bowel obstruction must be detected, associated with a convergence zone of intestinal loops, mesenteric fat and vascular structures (tubal, ovarian, uterine branches and venous plexus) penetrating through the broad ligament. Finally, the displacement of neighboring structures and vessels around the hernia opening and hernial sac should be analyzed. The proper treatment for a broad ligament hernia is surgical. The hernia must be reduced, the viability of the incarcerated intestine evaluated, and the defect closed. The first case report of laparoscopic resolution of a broad ligament hernia was described by Guillem P in 2003 [8]. Since then, this approach is preferred. In uncomplicated cases and when the intestinal loops are not excessively dilated, the first approach may be laparoscopic, since the reduction and closure of the defect is feasible, with less risk of infection, better aesthetic impact and shorter recovery time than open laparotomy [9]. Regarding the closure of the defect, it has been described by suturing or performing a division of the ligament [10-12]. However, there is not enough evidence to decide which type of repair is best.

Conclusion

Bowel obstruction due to hernia of the broad ligament is a rare entity. It must be resolved immediately due to the high risk of strangulation, perforation of the viscus and greater complications, its treatment is always surgical and it is important to evaluate the viability of the compromised intestine and the need to resect it if it is found to be necrotic. Abdominal pain is the main symptom of intestinal obstruction, and this diagnostic should be considered even in those patients without a history of previous abdominal surgeries, since maintaining this suspicion in the presence of intense diffuse abdominal pain will allow prompt surgery to be indicated. In cases of intestinal obstruction, CT with intravenous contrast is the imaging test of choice as it allows evaluating the viability of the bowel loop involved in the obstruction and the cause of the obstruction. In the reported case, the persistence of pain, despite the usual analgesic measures, and the images obtained from the CT scan allowed adequate surgical planning.

Although the laparoscopic examination allows a very good abdominal examination, the distention of the small bowel loops can be a difficulty that requires special care during the time of the pneumoperitoneum. The reduction of the herniated bowel loop in the

Table 1: Types of broad ligament hernias according to Hunt AB.

Type	Characteristics	Frequency
Fenestrated	Complete defect of the broad ligament that allows the passage of bowel loops through fenestrations with potential for strangulation	Most frequent
Hernial sac	Only anterior or posterior defect that allows herniation and loop entrapment in the parametrium	Rare

ligament must be delicate and careful, so that once the viability of the compromised loop has been verified; laparoscopic repair of the hernia defect can be performed. The adequate clinical and imaging diagnosis in this case, together with the programming and execution of the surgical technique, allowed a good laparoscopic resolution, but a medical team familiar with the details of this technique and more evidence is required to recommend it for all patients.

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