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Case Report

An unusual case of left para-duodenal hernia as a cause of recurrent intestinal obstruction-managed with laparoscopic approach

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ABSTRACT

Left para-duodenal hernia (PDH) makes for around 40% of all internal hernias. It is due to the prolapse of the bowel through the fossa of Landzert, an anatomic variant that is found in around 2% of the population. This hernia is presumed to be spontaneously reducible in many patients with recurrent symptoms. The present report shows the case of this condition in a 27-year-old female presenting with recurrent abdominal pain and subacute intestinal obstruction who was managed conservatively initially. She has been operated on with a laparoscopic approach. A proper diagnosis with an immediate surgical intervention is necessary for achieving the patient's cure and preventing complications in the future. The laparoscopic approach is usually suitable for patients with or without small bowel obstruction and hemodynamically stable.

Keywords: Para-duodenal, Hernia, Laparoscopy, Obstruction, Surgery

INTRODUCTION

Internal hernias are rare. But incidence of internal hernias has increased in the last decade with the invention of bariatric and metabolic surgery. They are found in 0.2% to 0.9% of autopsies, however, a major proportion of these cases remain asymptomatic. Approximately 4% of intestinal obstructions can be caused by internal hernias. Internal hernias are more common in adults. Para duodenal hernia (PDH) occurs due to an error in the midgut's rotation, through a normal or abnormal opening in the colonic mesentery.[1,2] Para duodenal hernias can present up to half of the developmental internal hernias and ≤1% of all cases of intestinal obstruction are caused by para duodenal hernias.[3,4] Few cases of acute intestinal obstruction caused by PDH have been reported. PDH can present in childhood but commonly occurs between the 3rd and 6th decades of life. Most (75%) para duodenal hernias occur on the left side, they are more common in males than in females.[4,5] Left para duodenal hernias (left PDHs) occur as the manifestation of prolapse of the proximal jejunum or parts of the duodenum through the para duodenal fossa or Landzert's fossa.[7] Landzert's fossa is formed by the junction of the transverse mesocolon, the descending mesocolon, and the small bowel mesentery at the level of the duodeno-jejunal junction behind the descending mesocolon and the left half of the transverse mesocolon. The proximal limb enters the hernia sac posteriorly, at the point where the duodenum emerges from its fixed retroperitoneal position so that only the distal limb passes through the hernia opening.

CASE REPORT

A 27-year-old female presented to our hospital in western India with complaints of pain in the abdomen, and decreased appetite for 3 days. She had associated abdominal distension and two episodes of vomiting with no passage of stools over this period. An intermittent passage of flatus was present on the first day but not present for the last two days. She had a history of similar complaints before 3 months and 7 months, which was

managed conservatively. There was no history of fever, weight loss, previous major surgery, trauma, or chronic abdominal diseases. Family and travel history were not contributory.

A general examination showed vital parameters were within normal range. Abdominal examination showed moderate abdominal distension and diffuse tenderness throughout the abdomen, with no guarding or rigidity and absent bowel sounds. A few air-fluid levels were there in a plain radiograph of the abdomen done in a standing position. However, bowel loops were near normal in caliber. There was free gas under the diaphragm suggestive of pneumoperitoneum. An ultrasound of the abdomen and pelvis was normal except few dilated bowel loops with sluggish motility. There were mild leukocytosis and anemia in routine hematological and biochemical investigations.

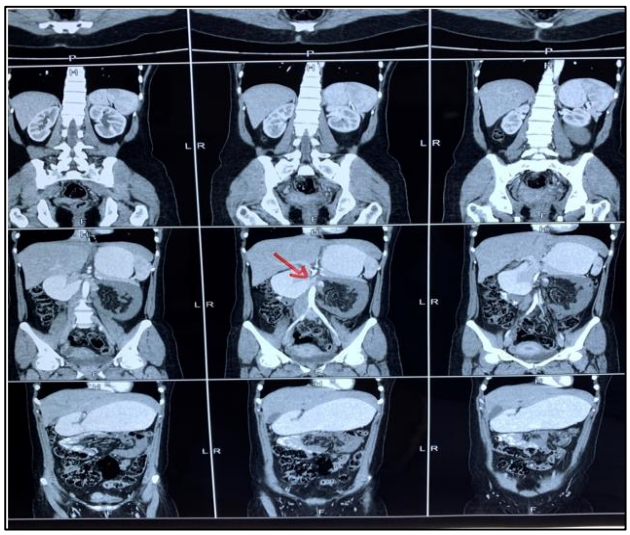

Figure 1: CECT abdomen of clusters of small bowel loops in left upper quadrant of abdomen.

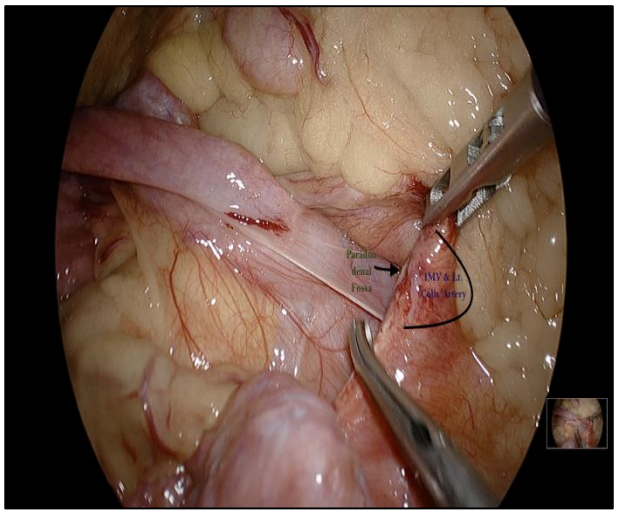

Figure 2: Intraoperative image of Landzert's fossa with mesenteric vessels forming anterior wall of it.

For further evaluation, a contrast-enhanced computed tomography (CECT) scan of the abdomen and pelvis was performed for suspected subacute/acute intestinal obstruction. The CECT abdomen (Figure 1) revealed abnormal clusters of small bowel loops left of the midline converging slightly posterior and lateral to the inferior mesenteric vessels are noted. There is also resultant dilatation of the stomach and 1st, 2nd, 3rd, and 4th parts of the duodenum noted and the above findings suggested a possibility of internal herniation. After a detailed assessment patient was advised to have surgery and all the treatment options were explained to the patient. Laparoscopic surgery is always preferred in high-volume centers where expertise in laparoscopic is available. The laparoscopic procedure has a speedy post-operative recovery, but long-term results are almost the same for both open and laparoscopy.[4-6]

The patient was operated on with laparoscopic Para duodenal hernia repair. Intra-operatively findings showed the small bowels were trapped between the thin layer of the left mesocolon and post abdominal wall (Figure 2). IVM, left colic artery, 4th portion of the duodenum were forming the free edge of the hernial sac. Finally, after reducing nearly half of the total length of the patient's small bowel loops, the fossa of Landzert was identified. The fossa of Landzert was obliterated by non-absorbable sutures to prevent any future bowel incarceration. The mesenteric vessels, which were to the left of the hernial sac, were preserved. The patient recovered uneventfully.

DISCUSSION

PDH is also popular as mesocolic hernias, congenital in nature, and derived from embryological peritoneal anomalies with associated abnormal intestinal rotation. The jejunum forms the proximal limb close to the fourth portion of the duodenum, and the distal limb can extend up to the proximal ileum if extensive herniation occurs.[9-11] The surgeon must be aware of the vascular anterior border of the aperture during the repair of the left PDH to prevent the injury. In the study by Schizas et al, the mean age of onset of para duodenal hernia is 44.1 years, and it is between the ages of 40 and 60 in Muneer et al. Women have three times more incidence than men.[8-12] The most common complaints are subacute to chronic pain in the abdomen and vomiting with or without signs of intestinal obstruction. Overall >50% increased risk of strangulation and intestinal infarction making it necessary to investigate radiological signs of decreased perfusion and bowel wall ischemia.[13] The high mortality related to delayed diagnosis and treatment makes early identification necessary and justifies the role of abdominal CT (sensitivity 95-100%) in the early pre-operative diagnosis of Para duodenal hernia. The high resolution and multiplanar images associated with multislice CT provide a precise and early diagnosis, very convenient for surgical treatment planning.[9,13,14] CT findings usually show a cluster of dilated small bowel loops with engorged and displaced mesenteric vessels at the hernial orifice in PDH.[8,9] Early surgical treatment is

necessary to avoid future complications as patients with PDH have a higher (20-50%) mortality for acute presentations, due to strangulation and sequential bowel wall perforation. After analyzing data in previous cases, several advantages of the laparoscopic approach have been seen as a significant reduction in post-operative pain, reduced morbidity, early food resumption (1.52 average vs 1-3 days), and shorter hospital stay (2.50 average, range 1-10 days). The same benefits have been observed in different studies regardless of the type of procedure (elective or emergency), method of repair (closure of the hernial defect with continuous or interrupted suture, enlargement of defect or resection of the sac), and type of material used (adsorbable or not adsorbable, monofilament or poly-filament).[10,13-16] We opted for the laparoscopic approach for our patient who shared the same benefits as described by other authors.

CONCLUSION

In our case report, a 27-year-old female patient with left PDH with recurrent intestinal obstruction presented with the recurrent attacks of abdominal pain, nausea, and obstipation. A detailed diagnostic evaluation of the patient showed the diagnosis of the left PDH. A laparoscopic approach was decided for this case, which confirmed the presence of LPDH, with a traditional approach we released the trapped loops of the small intestine and closed the hernia orifice. The laparoscopic approach is usually suitable for patients with or without small bowel obstruction and hemodynamically stable. Hence, a proper diagnosis with an immediate surgical intervention is necessary for achieving this patient's cure and preventing complications in the future. The >20% mortality rate of PDH was observed in a retrospective analysis. CT abdomen has a definite role in making the definitive diagnosis and performing timely surgery, which was also demonstrated in our patient. Computed tomography is the gold standard modality for diagnosis at an early stage. Timely diagnosis and surgery can improve the outcome of the disease.

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