

Laparoscopic repair of the left paraduodenal hernia: A rare case of an internal hernia

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ABSTRACT

Paraduodenal hernia (PDH) is a rare congenital anomaly, the most common cause of internal hernia. The left-sided PDHs (LPDHs) are more common than the right-sided and are common in male patients at the 4th and 6th years of life. LPDH is been often clinically asymptomatic and often detected by chance in surgical patients. Abdominal computed tomography is the gold standard in diagnosis. PDH can cause ischemia with the high mortality rates due to intestinal obstruction. Therefore, surgical repair should be done as soon as possible after diagnosis. Here, we present a case of LPDH that was laparoscopically diagnosed and repaired early.

Keywords: Internal hernia; laparoscopic hernia repair; paraduodenal hernia.

INTRODUCTION

Internal hernia is a pathological condition caused by an abnormal displacement of one or more intra-abdominal structures (the most often small intestine or omentum, but sometimes colon or stomach) from a natural or newly formed intraperitoneal opening of the abdominal cavity. This hernia is 3 times more common in men than in women.^[1-4] Paraduodenal hernias (PDH) are the most common congenital internal hernia.^[5] Clinical diagnosis can challenge because of a wide variety of symptoms. It may be asymptomatic for a lifetime. Patients usually present with chronic abdominal pain and vomiting with or without symptoms of intestinal obstruction. However, it can be noticed incidentally in abdominal computed tomography (CT) scans. It is often seen between the 4th and 6th decades of life.^[6-9] PDH can cause obstruction, ischemia, and perforation due to bowel compression. Therefore, its mortality rate is higher.^[10]

PDH can be effectively and safely repaired with traditional open surgery or less invasive laparoscopic surgery. We describe the pre-operative radiological diagnosis and successful laparoscopic repair of the left-sided PDH (LPDH) in a young man.

CASE REPORT

A 28-year-old male patient applied to the clinic with a complaint of recurrent abdominal pain. The pain was paroxysmal without nausea and vomiting. It got worse after meals. He has a medical history of dyspepsia treated with a proton pump inhibitor. The results of complete blood count, serum, and urine amylase were within normal limits. CT scans of the abdomen showed that a part of the small intestine and its mesentery was folded together on the left side of the abdomen (Fig. 1).

After pre-operative radiological findings and diagnosing abdominal hernia, we performed laparoscopic surgery. We found it that approximately 100 cm of the small intestine, which was caught from a defect in the mesocolon, was within the Landzert's fossa. We diagnosed the patient with a left PDH (Fig. 2a-f).

We started the fluid regimen on the same post-operative day, and the watery-soft regimen started the next day. On the second post-operative day, abdominal CT with oral contrast showed that PDH was repaired successfully (Fig. 3). On the

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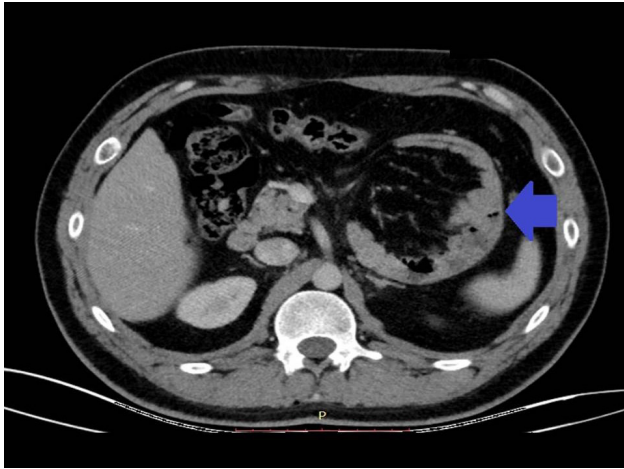


Figure 1. Pre-operative abdominal computed tomography image of the left paraduodenal hernia.

same day, the patient tolerated the oral regimen well, and he was discharged. We found no abnormal presentation during follow-up in a month.

DISCUSSION

PDHs also known as mesocolic hernias are congenital abnormality caused by abnormal bowel rotation. Most commonly, they are asymptomatic and incidentally found at the time of surgery. The high mortality rate in patients with PDH makes early diagnosis critical. Multi-slice and high-resolution abdominal CT is vital for early diagnosis of PDH and can help plan surgery.^[10,11] There are two types of PDH: Left-sided and right-sided. LPDH = Landzert hernia is a congenital pathology with an incidence of 2% of the population. It is 3 times

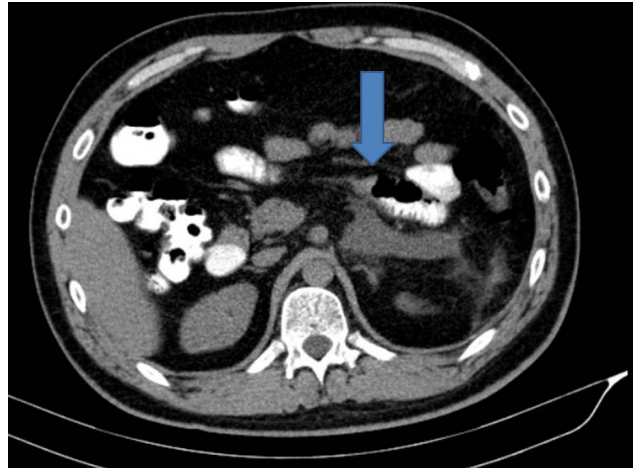


Figure 3. Image of repaired hernia defect after surgery with abdominal computed tomography.

more common than the right-sided PDH = Waldayer's hernia. LPDH originates from the Landzert fossa located behind the left branch of the inferior mesenteric vein and the middle colic artery and to the left of the fourth part of the duodenum. The small intestines (often jejunum) can move into this fossa and get stuck here. The total number of the left PDH cases reported in the literature is <500. Patients with PDH have a 50% lifetime risk of strangulation and bowel ischemia. When intestinal ischemia is suspected, radiological imaging is required for diagnosis.^[12] The characteristic image of the PDH on abdominal CT is the dilated intestinal segments with a mesenteric defect and displaced mesenteric vessels.^[13] Early surgical intervention is essential because the mortality rate is 20–50% for acute intestinal ischemia in PDH patients.^[14,15]

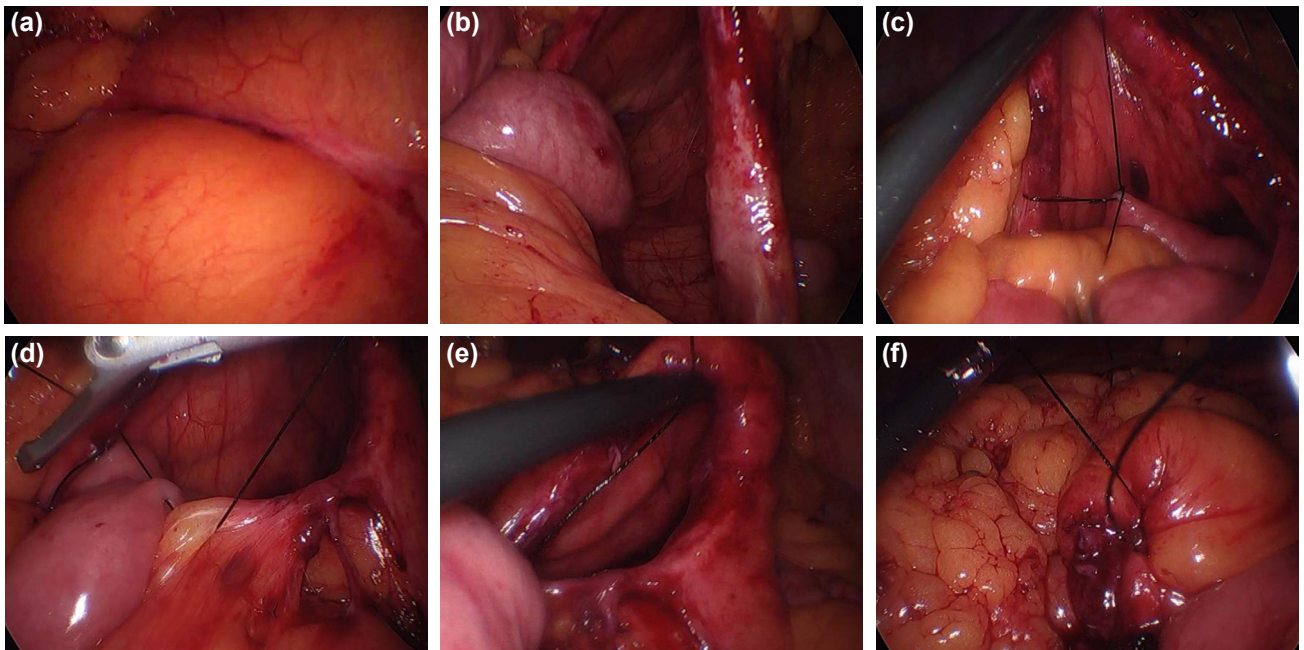


Figure 2. Laparoscopic view of the left paraduodenal hernia. (a) Hernia orifice, (b) Landzert's fossa, (c) fixing the distal part of the entrapped jejunum to the left crus of defect, (d) fixing the distal part of the entrapped jejunum to the right crus of defect, (e) hernia defect after jejunum fixation, (f) closure of the hernia orifice with intracorporeal sutures.

The standard surgical approach includes reduction of hernia content resection of the intestinal segments with ischemia and repairs the hernia defect by closing or expanding.^[16,17] In the left PDH, it suffices to cover the hernia hole with sutures. If the intestinal segments are difficult to reduce, the hernia defect is expanded by an incision along the descending mesocolon avascular plane or IVM division. Excision of the hernial sac is usually not mandatory. Mesh repair can be performed in PDH recurred after the first operation.^[16]

PDH could be repaired using traditional open surgical techniques or less invasive laparoscopic techniques.^[17] The first successful laparoscopic PDH repair was made by Uematsu et al. in 1998.^[18]

The laparoscopic approach provides a safe and effective treatment for these cases, regardless of the elective or emergency surgery, the repair procedure (closing the defect with continuous or intermittent suturing and enlarging the defect or resection of the sac), and the material used in this repair. According to the recent literature, PDH is successfully treated by the laparoscopic approach has several advantages compared to open techniques including less post-operative pain, low morbidity, earlier oral feeding (1.33 mean, 1–3), and shorter hospital stays (3.60 mean, range 1–10), just as in our case.^[18–26]

Conclusion

The laparoscopic approach can be beneficial in the treatment of the cases of PDH with small bowel obstruction. CT remains the gold standard imaging for early detection of this clinical condition. Pre-operative diagnosis is difficult because there are no specific symptoms and physical examination findings. The laparoscopic approach in the treatment of PDH is the safest and the most appropriate treatment strategy.

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OLGU SUNUMU - ÖZ

Sol paraduodenal fitiğin laparoskopik onarımı: Nadir bir internal herni olgusu

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Paraduodenal fitik, iç fitiğin en yaygın nedeni olan nadir bir doğuştan anomalidir. Sol taraflı paraduodenal herniler (LPDH) sağ taraflıdan daha yaygındır ve yaşamın dördüncü ve altıncı yıllarındaki erkek hastalarda yaygındır. LPDH sıklıkla klinik olarak semptomsuzdur ve sıklıkla cerrahi hastalarda tesadüfen saptanır. Abdominal bilgisayarlı tomografi (BT) tanıda altın standarttır. Paraduodenal herni, bağırsak tıkanıklığına bağlı olarak yüksek mortalite oranlarına sahip iskemiye neden olabilir. Bu nedenle, tanıdan sonra mümkün olan en kısa sürede cerrahi onarım yapılmalıdır. Burada laparoskopik tanı ve erken tamir edilen bir LPDH olgusunu sunuyoruz.

Anahtar sözcükler: İnternal herni; laparoskopik herni tamiri; paraduodenal herni.

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