

Acute Intestinal Obstruction Secondary to Left Paraduodenal Hernia: A Case Report

Sol Paraduodenal Herniye İkincil Akut İntestinal Obstrüksiyon: Olgu Sunumu
Genel Cerrahi

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Özet

Paraduodenal herniler, internal abdominal herniasyonun en sık rastlanan tipi olup akut intestinal tıkanıklığın nadir bir sebebidir. Sol paraduodenal herni, sağa göre 3 kat daha fazla izlenir. Preoperatif dönemde nadiren tanınmakla birlikte semptomatik dönemde yapılan abdominal görüntüleme sayesinde tanı konulabilir. Tanı ve cerrahi tedavideki gecikmeler yüksek morbidite ve mortaliteye neden olabilir. Bulantı, kusma ve karın ağrısı şikayetleri ile başvuran ve yapılan abdominal bilgisayarlı tomografi incelemesinde internal herniasyon öntanısı ile ameliyata alınan, peroperatif olarak sol paraduodenal herni saptanan bir olgu sunulmaktadır.

Anahtar kelimeler: *Paraduodenal herni, İntestinal obstrüksiyon, Gastrointestinal motilite*

Abstract

Paraduodenal hernias are the most common type of internal abdominal herniation and it is a rare cause of acute intestinal obstruction. The left paraduodenal hernia is monitored 3 times more than right paraduodenal hernias. Although, it can rarely be diagnosed in the preoperative period but it can easily be diagnosed during the symptomatic period by abdominal imaging. Delays in diagnosis and surgical treatment, can lead to high morbidity and mortality. We report a case of left paraduodenal hernia who was admitted to hospital with nausea, vomiting and abdominal pain. The patient was operated with the preoperative diagnosis of internal herniation detected on abdominal computed tomography.

Keywords: *Paraduodenal hernia, Intestinal obstruction, Gastrointestinal motility*

Introduction

Paraduodenal hernia (PDH) is an internal herniation type that occurs as a result of the malrotation of the midgut during embryonic development through herniation of the small intestine into the retroperitoneal space towards the caudal space through the cavities around the Treitz ligament¹. It was first described by Treitz in 1857². Although, PDH is a rare cause of small bowel obstruction, it is the most common form of congenital internal hernias with 25.53%³. The left PDH is located within the paraduodenal fossa of the Landzert and is responsible for 40% of all congenital internal herniation cases⁴. PDHs are most commonly seen in the fourth and sixth decades of life^{5,8}. The findings and symptoms are generally nonspecific⁶. The superior mesenteric artery forms the free edge of the left PDH pouch mouth. Ischemia may occur in the intestine due to compression to the superior mesenteric artery in the acute period of herniation. Strangulation and prolonged ischemia may cause intestinal necrosis in cases with delayed diagnosis and results in a mortality rate of more than 50%^{1,7}. Here, the diagnosis and treatment of a case of PDH is presented with literature data.

Case Report

A 25-year-old female patient was admitted to the emergency room with the complaints of abdominal pain, bloating, nausea and vomiting that started three days ago. On the day of admission, she also complained of inability to pass gas and stool for the last one day. There was no history of systemic disease and previous

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abdominal operation. All vital parameters were normal. On physical examination; abdominal distension, tense left upper and lower quadrant pain and tenderness were present, there was a defense, but no rebound. On rectal examination, the ampulla was empty. Direct abdominal X-ray revealed multiple air fluid levels. Laboratory analyses were: white blood cell 12.026×10^3 L, CRP: 1,10mg / dl except that the other parameters were normal. Abdominal computed tomography scans revealed mesenteric edema and encapsulated loops of small bowel located in the upper left quadrant. With these findings internal herniation was considered and urgent exploratory laparotomy was decided to be performed (Figure 1-2) after obtaining "The Patient Consent Information Form".



Figure 1

Paraduodenal hernia axial section (CT)

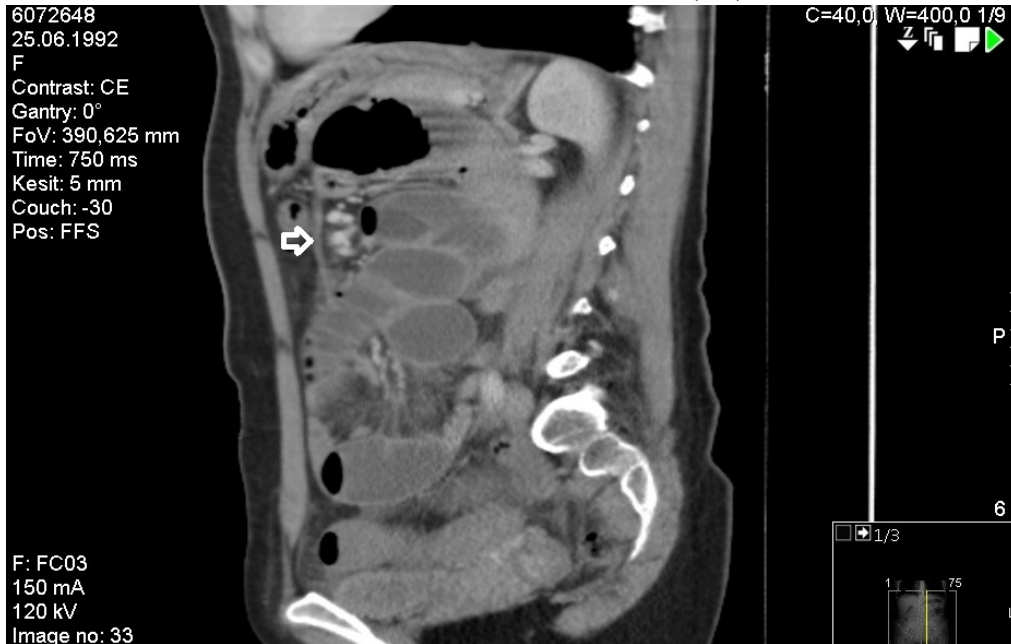


Figure 2

Paraduodenal hernia saggital section (CT)

In the exploration, a paraduodenal peritoneal hernia sac was observed on the left side of the Treitz ligament and it was observed that small bowel loops entered and stuck into this hernia sac (Figure 3-4).

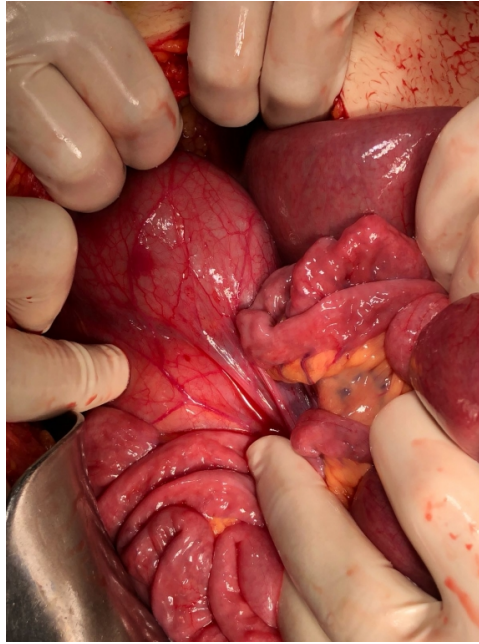


Figure 3
Hernia sac in the left paraduodenal area

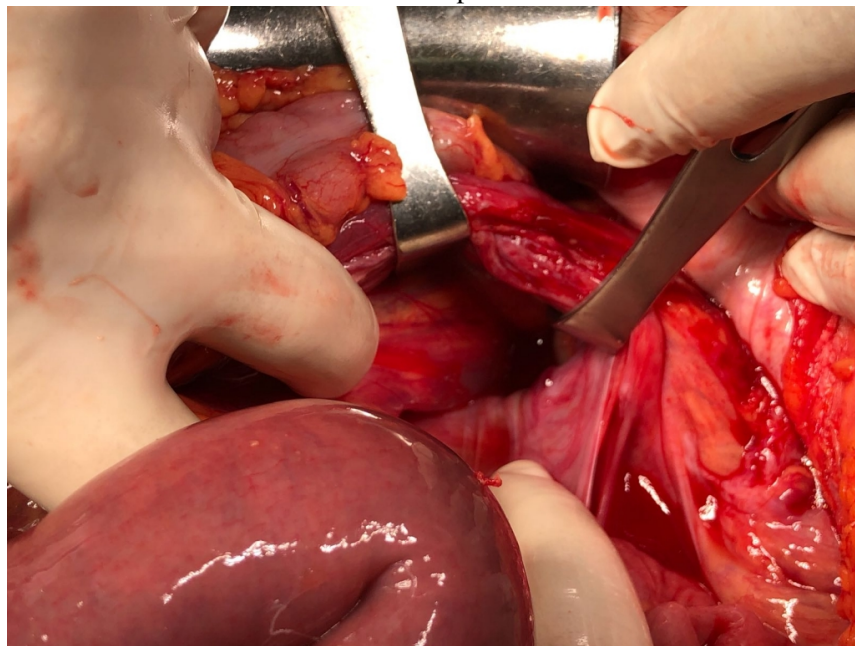


Figure 4
Peritoneal defect due to left PDH

Small bowel loops were reduced from the retroperitoneal area and brought to normal anatomic positions. There was no malnutrition in the small bowel loops and the mouth of the left paraduodenal hernia sac was repaired and closed (Figure 5).

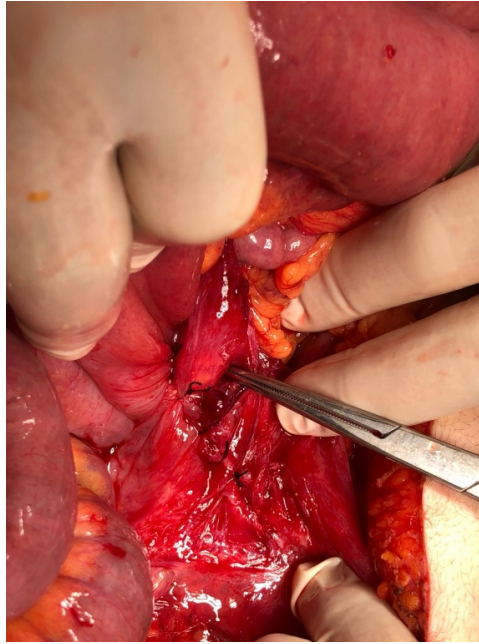


Figure 5
Repair of peritoneal defect

Oral intake was started on the first postoperative day and the patient was discharged from the hospital on the third postoperative day after gas and stool. The patient was observed to have normal anatomic position of the small bowel loops at the 45th postoperative day.

Case Discussion

Internal herniations may be congenital or acquired. Internal herniations are responsible for approximately <2% of small bowel obstructions¹. Of the internal hernias, 53% are PDH, 13% are percutaneous hernia, 8% are foramen Winslow, 8% are trans mesenteric-mesocolic hernias, 6% are intersigmoidal hernias and 5% are retroanostriological hernias⁴. PDH occurs by herniation of the small intestine into the retroperitoneal space from caudal to the caudal space between the 5th and 11th weeks of embryonic development of the midgut as a result of the malrotation of the Treitz ligament^{1,9}. It was first described by Treitz in 1857². Although, PDH is rarely seen as the cause of small bowel obstruction, it is the most common form of congenital internal hernias with 25-53%^{3,4}. PDHs are most commonly seen in the fourth and sixth decades of life. Left PDHs are three times more common than right PDHs and PDHs are three times more common in men^{5,8}. The left PDH is located within the paraduodenal fossa of the Landzert and is responsible for 40% of all congenital internal herniation cases⁴. Patients with PDH often have unclear and recurrent abdominal pain, nausea, vomiting and weight loss. Dilatation and ileus-subileus may occur due to malnutrition and decreased peristalsis in the small bowel loops in the hernia sac. In patients with no previous abdominal surgery and acute intestinal obstruction, the PDH should be considered. On physical examination, there is usually unclear tenderness the abdomen and no typical distension. Direct abdominal radiography can show localized air-fluid levels in the left quadrant. Abdominal computed tomography is the first imaging modality to be selected. The encapsulated clustering of intestinal loops, the dilatation of the intestinal margins, the air-fluid level, left displacement of the inferior mesenteric vein detected in the left upper quadrant, on the left side of Treitz's ligament or in the duodenojejunal junction between the stomach and the pancreas are the most important descriptive imaging features^{5,6}. Laparotomy should be planned to prevent incarceration and strangulation in patients with acute intestinal obstruction. Surgical treatment of left PDH is the reduction of herniated bowel loops to normal anatomic positions following the basic principles of hernia surgery

and primary or mesh repair of hernia defect⁷. When the peritoneal defect is closed with non-absorbable sutures, attention should be paid to the inferior mesenteric vein adjacent to the defect.

In conclusion, PDH should be considered in cases of acute obstructive bowel obstruction in young patients who have no previous history of abdominal surgery. Timely planned laparotomy reduces the mortality and morbidity rates.

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Information Presentation

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