



“RARE PARADUODENAL HERNIA COMPLICATED BY MESENTERIC ISCHEMIA”: A CASE REPORT

Radiology

**Dr. Muhammed
Ashiq***

Junior Resident, Department Of Radio-Diagnosis, Travancore Medical College, Kollam,
Kerala. *Corresponding Author

ABSTRACT

Paraduodenal hernias, which are internal abdominal hernias linked to intestinal obstruction, often lead to complications such as volvulus and ischemia, and diagnosing them remains difficult due to the nonspecific symptoms like abdominal pain, distention, nausea, and vomiting; if the condition worsens, it can result in severe outcomes like intestinal necrosis, perforation, and potentially death. Here I present a case report of patient presented with complaints of acute abdomen, USG abdomen revealed dilated, edematous bowel loops with sluggish peristalsis and suspected closed bowel loops obstruction on CECT abdomen. Exploratory laparotomy with distal jejunum and proximal ileum resection and anastomoses. Intra-operatively revealed para-duodenal hernia with jejuno-ileal ischemia.

KEYWORDS

USG (ultrasonography), CECT (contrast enhanced computed tomography), para-duodenal hernia (PDH).

INTRODUCTION

An internal hernia occurs when an organ protrudes through an opening in the peritoneal or mesenteric fold. Paraduodenal hernia (PDH) accounts for nearly 50% of all internal hernias and is a rare congenital condition resulting from an error in midgut rotation, creating a normal or abnormal opening in the colonic mesentery. While PDH often presents with nonspecific abdominal symptoms, if not promptly addressed, it can lead to severe complications such as acute small bowel obstruction, ischemia, and bowel perforation.

PDH can be classified based on its location: right-sided or left-sided. In right-sided PDH, the organ herniates into the fossa of Waldeyer, whereas in left-sided PDH, it occurs in the paraduodenal Landzert's fossa. Left-sided PDH is three times more common than the right-sided variety. Right-sided PDH predominantly affects males, with a male-to-female ratio of 3:1, while left-sided PDH does not show a gender preference.

CASE REPORT:

A 40-year-old man came in with a one-day history of epigastric pain and two episodes of vomiting, with the vomit being non-projectile, non-bilious, and without blood. There were no episodes of diarrhoea or blood in the stools, and he had no prior surgical history. On examination, his abdomen showed diffuse tenderness in the epigastric region with guarding, and bowel sounds were sluggish. Blood tests were generally normal, except for an elevated C-reactive protein level and a borderline increase in the total white blood cell count. On USG abdomen showed dilated bowel loops with sluggish to absent peristalsis. Few of the bowel loops appears mildly edematous with mild to moderate fluid in abdomen (Figure 1).

A contrast-enhanced CT scan of the abdomen showed smooth transition points in both the proximal and distal jejunum, along with dilation of the jejunal loop and moderate fluid accumulation (Figure 2). These findings suggested a possible closed-loop obstruction. The patient was then scheduled for exploratory laparotomy, which revealed a right para-duodenal hernia accompanied by jejuno-ileal ischemia. Surgical intervention involved resecting the distal jejunum and proximal ileum, performing an anastomosis on the viable segments, and repairing the hernia.



Figure 1: Ultrasound images (A) Dilated bowel loop (B & C) Dilated and thickened bowel loop



Figure 2: (A) – Axial CECT abdomen showing smooth transition point in the proximal jejunum, (B) - coronal CECT abdomen showing entire dilatation and mildly edematous jejunal loops with moderate ascites and (C) – Axial CECT abdomen showing smooth transition point in the distal jejunum. **Features consistent with closed loop obstruction.**



Figure 3: Intraoperative images (A) Paraduodenal hernial defect (B) Gangrenous bowel loops (distal jejunal and proximal ileal loops)

DISCUSSION

Paraduodenal hernia is a rare condition where a segment of the small intestine becomes trapped behind the ascending or descending mesocolon near the duodeno-jejunal junction. It can be classified as right or left paraduodenal hernia, with the left type occurring approximately three times more frequently. Accurate incidence rates are difficult to determine due to the high number of asymptomatic cases. Paraduodenal hernias constitute 50–66% of all internal hernias and 0.2–1.28% of small bowel obstructions. Males are affected two to three times more often than females, with an average diagnosis age of around 35 years. The condition is very rare in children and is often associated with poorer outcomes. The exact cause of paraduodenal hernias remains unclear and may differ between the right and left types.

The true frequency of asymptomatic paraduodenal hernias remains unknown, as they are often discovered incidentally during autopsies or procedures conducted for other conditions. Clinically, they can present as anything from recurrent abdominal cramps and occasional vomiting to acute intestinal obstruction. A distinctive symptom reported is postprandial pain or discomfort that worsens when lying down and improves when upright. Additionally, a tender mass may be felt in the right or left abdomen, especially during acute episodes. These symptoms are often persistent, with exacerbations leading to hospitalization.

The non-specific nature of these symptoms can delay diagnosis,

raising the risk of strangulation and bowel necrosis, which leads to emergency hospitalizations in up to 20% of cases. Radiological imaging can help expedite surgery, but recognizing the characteristic signs can be challenging without a strong clinical suspicion and understanding of peritoneal abnormalities. In our case, the radiologists had difficulty interpreting the ultrasound (US) and computed tomography (CT) findings, resulting in reports that were largely descriptive and not particularly helpful for decision-making. The US revealed a fluid collection all peritoneal spaces with dilated and edematous bowel loops. CT, remains the most effective tool for identifying the specific features of a paraduodenal hernia, such as small bowel configuration, mesenteric changes, and orifice boundaries.

Despite the clarity of CT findings, there is a risk of misinterpretation, such as confusing them with an abdominal mass, malrotation, or a generic internal hernia. In such situations, laparoscopy can be valuable for confirming the diagnosis and enabling immediate corrective surgery. In this case, exploratory laparoscopy identified a right paraduodenal hernia with ischemic bowel segment.

CONCLUSION

Due to the rarity of right paraduodenal hernia (RPH) and its nonspecific clinical symptoms, achieving an accurate preoperative diagnosis can be challenging for both clinicians and radiologists. However, RPH should be considered in young adults presenting with recurrent abdominal pain or intestinal obstruction, particularly if they have no history of abdominal surgery. While CT remains the most reliable imaging technique, a thorough understanding of peritoneal anatomy and its variations is essential for accurate interpretation of the results. Given that the lifetime risk of incarceration and subsequent intestinal obstruction is about 50%, all paraduodenal hernias, whether incidental or asymptomatic should be surgically addressed.

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