ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 11, Issue – 2, March – 2026, Page No. : 07 – 14

Left Paraduodenal Hernia Presenting as Acute Small Bowel Obstruction in a Virgin Abdomen: A Case Report

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Citation this Article: Dr. Nanneboina Gangarao, Dr. Mukesh Sangwan, Dr. Ashu Swami, Dr. Ajender Singh, Dr. Praveen Kumar, Dr. Shashi Bhushan Pandey, Dr. Prashant Kumar, Dr. Sherin Tom Kurivilla, Dr. Kumar Naveen, "Left Paraduodenal Hernia Presenting as Acute Small Bowel Obstruction in a Virgin Abdomen: A Case Report", IJMSIR - March – 2026, Vol – 11, Issue - 2, P. No. 07 – 14

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Internal hernias are a rare etiology of intestinal obstruction, contributing to approximately 0.2–0.9% of all cases[1]. Paraduodenal hernia is the most common type of internal hernia, yet it remains a rare and frequently overlooked cause of small bowel obstruction[2]. Although many patients experience intermittent abdominal pain for years, acute

presentation with intestinal obstruction or strangulation is the commonest type of presentation[1]. We report a case of 46 Y old male who presented with acute intestinal obstruction secondary to left paraduodenal hernia, diagnosed radiologically on computed tomography (CT). The patient was managed surgically with favourable clinical improvement. This case highlights the diagnostic challenge and importance of recognising paraduodenal hernia as a potential but a rare cause of bowel obstruction.

Keywords: Left paraduodenal hernia, internal hernia, fossa of Landzert, small bowel obstruction, Indian case reports.

Introduction

Internal hernias are an uncommon but clinically significant cause of intestinal obstruction, accounting for approximately 0.2–0.9% of all cases.[1] Among the various types of internal hernias, paraduodenal hernias are the most frequent, constituting more than 50%of all reported internal hernias.[1] Based on their anatomical location, they are classified as left-sided, occurring through the fossa of Landzert, and right-sided, occurring through the fossa of Waldeyer.[2] Left paraduodenal hernias are significantly more common, occurring nearly three times more frequently than right-sided hernias, and demonstrate a marked male predominance with a male-to-female ratio of approximately 3:1.[2] We present a case of left paraduodenal hernia presenting as small bowel obstruction in an middle aged male, successfully managed surgically.

Case presentation

A 46 year old male presented with complain of swelling in left upper abdomen since 1.5 months which was associated with colicky type of pain insidious in onset, progressive in nature with no aggravating and relieving factor. Patient also complained of pain since 2 days which was sudden in onset, colicky in type, moderate severity, associated with nausea and 1 episode of vomiting which was non projectile, bilious, non-foul smelling. No history of blood in vomitus. Non passage of flatus & stool since 1 day. History of similar episodes 2 times (1 and 3 yr back-took treatment from private hospital). The patient had no prior abdominal surgeries or significant comorbidities prior to this hospital visit and now found to be hypertensive incidentally and is started on anti-hypertensive treatment. On examination, the

abdomen was distended with a palpable bowel in left hypochondrium, epigastric and lumbar region. Bowel sounds were sluggish. Rest P/A examination including hernial sites, scrotum and Digital rectal examination were with in normal limit. Vital signs of patient are: 178/104 mmhg, pulse 104/min, SpO2 99% on room air.

Laboratory investigations revealed Hb 14.5 g/dL, TLC 9000/mm^3, Platelets 1.4 lakh 10^3 /mm^2. Serum sodium 138 mEq/L, potassium 4.0 mEq/L, Blood urea 24 mg/dL, creatinine 0.7 mg/dL, LFT, RBS, RFT were within normal limits. X-ray abdomen (erect) showed multiple dilated small bowel loops with air–fluid levels, which are centrally placed, suggestive of small bowel obstruction. Ultrasonography demonstrated Grade 2 fatty liver and thickened bowel loops with sluggish peristalsis. Patient was resuscitated with decompression of gut by nasogastric tube and foleys cather insertion and IV fluids. There was around 1L bilious output from nasogastric tube in 12 hrs. Contrast-enhanced CT (CECT) abdomen revealed left paraduodenal hernia with ectopic small bowel loops in the left hemiabdomen encapsulated within a hernia sac, associated with mesenteric vessel stretching. Prominence of ileal loops up to 2.7 cm with faecal content for closed loop. Collapsed and anterolaterally displaced descending colon secondary to mass effect from the hernial sac, with inferior mesenteric and left colic vessels draped anteromedially. No evidence of bowel ischemia. Patient was taken up for emergency exploratory laparotomy with intra operative findings of a defect of 3*3 cm in the left side of root of mesentery. Small bowel (Jejunum) of 60cm was herniated into the sac and was coiled upon itself. Both the herniated and remaining bowel appears to be normal. No evidence of ischemia seen. Post operative period was uneventful. Nasogastric tube was removed on POD 3 and patient was started on liquids followed by semisolids on the same day. Pelvic drain was removed on POD 5.

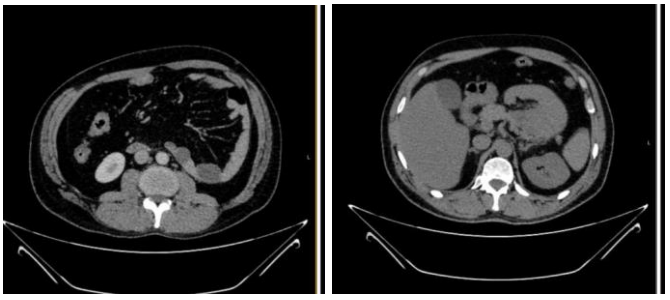

Figure 1:Axial Section Of Ct Showing Ectopic Small Bowel Loops In Left Hemiabdomen, Encapsulated Within A Hernia Sac.

Figure 2: Sagital Section of CECT WA

Figure 3: Coronal Section of CECT WA

Figure 4: Intra OP Pics of Left Para Duodenal Hernia with Small Bowel as Content.

Discussion

The most prevalent kind of congenital internal hernia, paraduodenal internal hernia (PDH), continues to be a significant but sometimes overlooked cause of small bowel obstruction (SBO). While just 0.2–0.9% of intestinal obstructions are caused by internal hernias, PDH makes up over half of these instances.[1] Clinical manifestation usually happens in maturity, usually in the fourth to sixth decades, and is more common in men than women, despite its congenital basis. The condition's infrequent occurrence and vague symptoms frequently lead to a delayed diagnosis, which raises the risk of intestinal ischemia and strangulation.

Midgut malrotation in embryos is the pathophysiology of PDH. The midgut undergoes mesenteric fixation after rotating 270° counterclockwise around the superior mesenteric artery (SMA) during normal development. Potential peritoneal recesses that are prone to herniation are created when adequate fusion is not achieved. According to Hans Landzert, the fossa of Landzert is where left paraduodenal hernias occur, accounting for about 75% of cases. Vascular damage is a major intraoperative worry since the anterior boundary of the hernial orifice is usually formed by the left colic artery and inferior mesenteric vein. [3,4] According to Waldeyer, a right paraduodenal hernia happens through the fossa of Waldeyer and is frequently linked to an incomplete rotation of the midgut. Treitz was the first to identify the syndrome in the eighteenth century, and his anatomical studies provided the groundwork for comprehending congenital internal hernias[4.] Similar to the observations of Tavasolizadeh and Dalili (2024), our case also represents a congenital mesenteric defect resulting from incomplete fusion during midgut rotation.[5] Consistent with the findings of Jatal et al. (2023), the hernia occurred through the fossa of Landzert, which accounts for the majority of paraduodenal hernias.[6] Previous studies have suggested a lifetime risk of incarceration approaching 50%, emphasizing the importance of early surgical intervention even in incidentally detected cases. [5,6]

Clinically, PDH manifests as a wide range of symptoms, from acute intestinal blockage to sporadic, nebulous abdominal pain. Because of temporary herniation and spontaneous decrease, many patients experience repeated postprandial

pain. stomach distension, bilious vomiting, colicky stomach discomfort, and constipation are examples of acute presentations. Crucially, while assessing SBO, the majority of patients have no history of previous abdominal surgery, which should raise suspicions of an internal hernia. Imprisonment can lead to venous congestion, arterial compromise, strangling, and gangrene if left untreated; in complex situations, the mortality rate has been reported to be as high as 20–50% in the past. The clinical presentation in our patient is comparable to the cases reported by Jatal et al. (2023), where patients commonly presented with intermittent abdominal pain and features of small bowel obstruction without a previous surgical history. [6].

The preoperative diagnosis of PDH has been completely transformed by radiological imaging. While air-fluid levels or clustered small bowel loops may be visible on plain radiographs, contrast-enhanced computed tomography (CECT) is the preferred test. The inferior mesenteric vein at the anterior border of the sac, crowding and engorgement of mesenteric arteries, displacement of neighbouring viscera, and an encapsulated cluster of jejunal loops in the left upper quadrant (in left PDH) are typical CT findings. Volvulus patients may exhibit the "whirlpool sign." Because early CT-based diagnosis allows for timely surgical intervention before ischemia occurs, it greatly lowers morbidity. The CT findings in our case, including clustered jejunal loops in the left upper quadrant and displacement of adjacent viscera, are consistent with the radiological features described by Devi et al. (2024) and Akçay et al. (2024). [7,8]

Even in those who are asymptomatic, surgical correction is advised after diagnosis because of the significant lifetime risk of incarceration, which is believed to be close to 50%. Reduction of the herniated bowel, thorough viability assessment, removal of nonviable parts where required, and closure or expansion of the hernial defect to prevent recurrence are the management principles. It is crucial to preserve nearby vascular structures. In stable patients, minimally invasive techniques have become more popular because of their quick recovery, shorter hospital stays, and decreased postoperative pain. Open surgery is still suitable, nevertheless, in patients who are unstable or when intestinal ischemia is suspected. The operative strategy in our patient—reduction of the herniated

bowel with closure of the defect—aligns with the surgical principles described by Al-Darwish et al. (2026) and Vel et al. (2025). [9,10]

To sum up, small bowel obstruction can be caused by a rare but clinically severe paraduodenal internal hernia. It is crucial to have a high index of suspicion, particularly in individuals who have never had surgery before and arrive with SBO.

Conclusion

Paraduodenal hernia, though rare, represents the most common type of congenital internal hernia and should be considered in the differential diagnosis of small bowel obstruction, particularly in patients with a virgin abdomen. The condition is often associated with delayed diagnosis due to non-specific clinical presentation; however, contrast-enhanced computed tomography plays a crucial role in early and accurate identification. Given the substantial lifetime risk of bowel obstruction and strangulation, surgical repair is recommended once the diagnosis is established. Laparoscopic repair, when feasible, offers favourable outcomes with reduced postoperative morbidity and shorter hospital stay. Increased awareness and reporting of cases, especially from the Indian subcontinent, are essential to facilitate early diagnosis and promote minimally invasive management.[1,2,13,14]

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