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An uninvited guest in the landzert's mansion

Geeta Avadhani K and Arun Kumar Shirshetty

Abstract

Paraduodenal internal hernia is a rare type of congenital anomaly resulting from incomplete rotation or malrotation of the midgut during fetal development. It is recognised as most frequent of all the internal hernias (50%). We report a case of left paraduodenal hernia in a 39 years old male patient who had presented to emergency department with complaints of pain abdomen. The final diagnosis was made after CECT abdomen. Patient underwent laparotomy which confirmed the CECT finding. Herniating bowel loops were reduced and defect closed. It is important to consider the diagnosis of internal hernias in the differential diagnosis for a young patient with recurrent small bowel obstruction with no past history of any surgical intervention. CECT scan is the most specific imaging technique to acquire a diagnosis preoperatively. Future complications can be prevented by timely surgical intervention

Keywords: Hernia, abdominal; abdominal pain; rotation; intestinal obstruction

1. Introduction

Paraduodenal internal hernia is a rare type of hernia resulting from incomplete rotation or malrotation of the midgut [1]. This type of hernia may lead to intestinal obstruction or it may be accidentally detected at laparotomy [2, 3]. These are more frequently seen on radiological imaging. Paraduodenal hernias always carry the risk of bowel obstruction, ischemia, and perforation with a high mortality. In this article we discuss the clinical presentation of a case of left paraduodenal hernia and review the literature.

2. Clinical Case Report

A 39 years old male patient presented to emergency department with a history of pain abdomen, acute in onset, located in left lateral region of the abdomen and also had history of vomiting two episodes, the vomitus contained food particles only. There was no bowel and urinary disturbances. Patient was not a known diabetic or hypertensive. There was no past h/o similar complaints. On examination vitals were normal, per abdomen examination revealed no significant abnormality except for mild tenderness in the left lumbar area. There was no distension of abdomen and bowel sounds were normal. A provisional diagnosis of left obstructive ureteric calculus was made and patient was investigated. On Ultrasonography of the abdomen/ pelvis, there was no evidence of calculi and was unremarkable. Patient had relief of pain following intravenous analgesics but recurred soon with severe colicky pain. So a CT KUB was done and subsequently a suspicious mass of bowel was seen on CT after which the patient underwent a complete CECT Abdomen/ Pelvis. It was reported as Internal Hernia of Left Paraduodenal type (Fig.1, 2& 3: Cluster of small bowel loops herniating into a mesenteric sac located behind pancreas and posterior wall of the stomach with crowding of mesenteric vessels at the entry point of the sac and with anteriorly located inferior mesenteric vein). There were no signs of obstruction. Laboratory studies were significant for an elevated total count of 14,300. During this period patient was kept on liquid diet and was asymptomatic. Elective laparotomy was carried out. The per-operative findings were: crowded bowel loops in left paraduodenal area through an abnormal recess in the mesentery inferior to the duodenojejunal junction and the entry point of the sac had mesenteric vessels (Fig. 4, 5& 6). There was no evidence of any gangrenous bowel loops intra operatively. Careful dissection was carried out in the region of neck and bowel loops were reduced. Closure of the defect was carried out and abdomen was closed. Post operatively patient recovered well and was discharged on post-operative day 10.



Fig 1: Computed tomographic scan showing incarcerated loops of small bowel in the left paraduodenal area.



Fig 2: Computed tomographic scan showing anteriorly located inferior mesenteric vein at the entry point of the hernia.

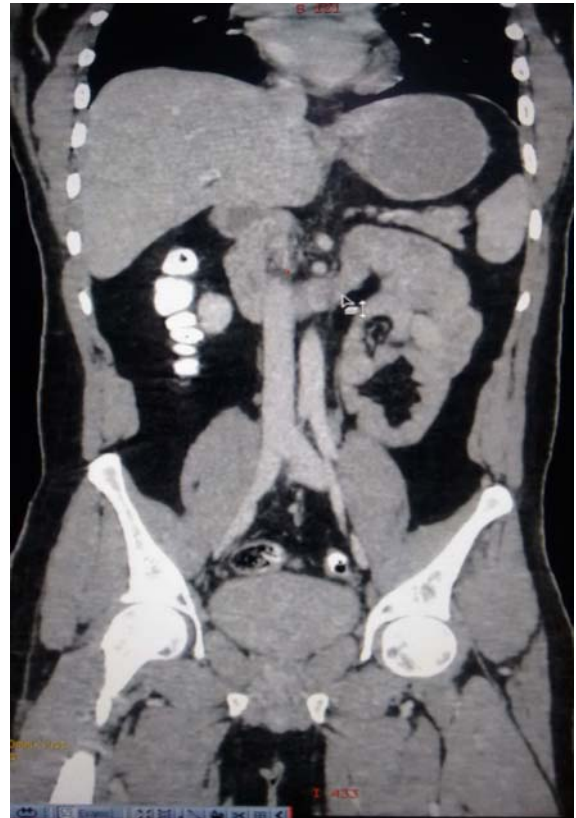


Fig 3: Axial enhanced Computed Tomographic picture demonstrates a cluster of small bowel loops located in the Landzert's fossa (Left paraduodenal hernia).

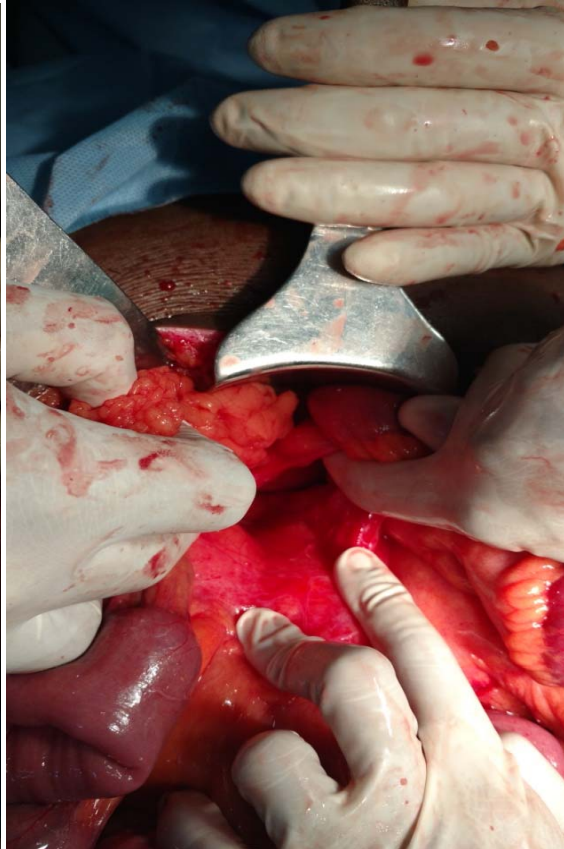
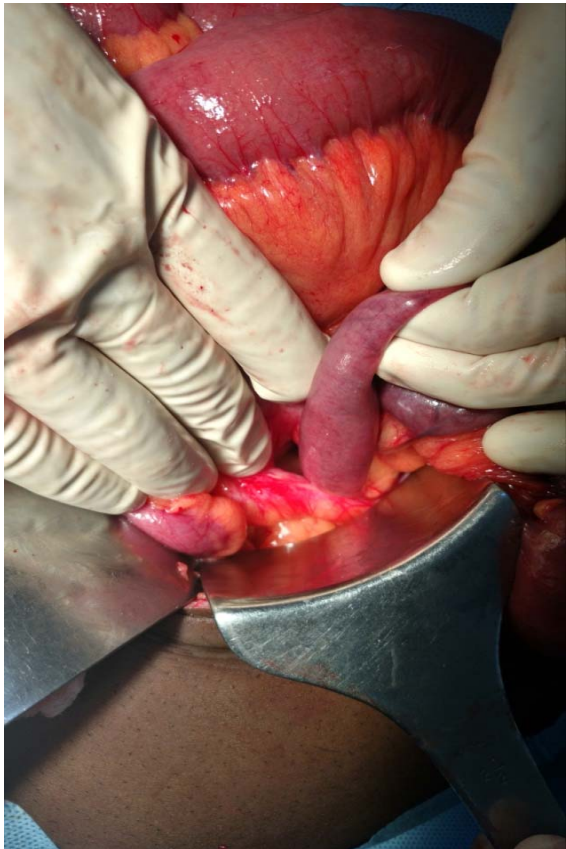


Fig 4, 5: Intra operative findings: The left paraduodenal hernia with incarceration of the small bowel loops. A potential space in the large bowel mesentery was seen (Fig.4). There was no evidence of any gangrenous bowel loop.

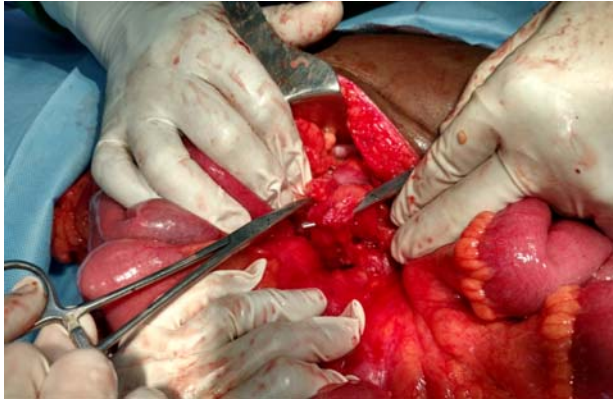


Fig 6: Hernial orifice seen intra operatively.

3. Discussion

Paraduodenal hernias comprise less than 1% of the cases of intestinal obstruction but comprise 50% of internal hernias [2]. An internal hernia is defined as the protrusion of a viscus through a normal or abnormal opening within the confines of the peritoneal cavity. Internal hernias are either congenital or acquired [3, 4]. These develop as a result of small intestine getting trapped beneath the mesentery of the colon.

Paraduodenal hernias are more common in males (M: F ratio is 3:1) [5]. Seventy five percent of the paraduodenal hernias are known to occur on the left side, while twenty five percent occur on the right [5, 6]. They are characterized by the abnormal fixation of the duodenum and jejunum.

Left paraduodenal hernia arises from the fossa of Landzert (therefore also known as "Hernia of Landzert"), which is a congenital defect presenting in about 2% of the general population, located to the left of the fourth part of the duodenum, posterior to the inferior mesenteric vein and left branches of the middle colic artery [5]. Jejunal loops prolapsed posteroinferiorly through this fossa to the left of the fourth part of duodenum into the left portion of the transverse mesocolon. Therefore the herniated small bowel loops may become trapped within this mesenteric sac. It is very important to recognize the inferior mesenteric vein as this marks the duodenojejunal flexure. These borders are also important surgically, as the inferior border of the hernia opening is the safest place to incise to widen the neck and allow reduction without the risk of damage to the vital structures [5, 7]. The inferior mesenteric vein and the left ascending colic artery displaced anteriorly by a cluster of jejunal loops is the most important sign on CT of left paraduodenal hernia.

The right counterpart is known as Waldeyer's hernia. The right paraduodenal hernias protrude into the ascending mesocolon, involving the fossa of Waldeyer, behind the superior mesenteric artery and inferior to the third portion of the duodenum [2].

The imaging studies like the plain abdominal film and the CT scan are the methods of choice for making the diagnosis of internal hernia [8]. On a plain abdominal film there may be a finding of dilated small bowel loops. CT scan can reveal a sac like mass of small bowel loops suggestive of paraduodenal hernia. Radiologically, left paraduodenal hernias present as an ovoid conglomeration of jejunal loops in the left upper quadrant, often displacing the stomach superiorly and the transverse colon inferiorly. Right

paraduodenal hernias are similarly ovoid but are located on the right, displacing the ascending colon anterolaterally [8]. Usually internal hernias are mildly symptomatic or totally asymptomatic, with symptoms rising over time due to the sac growth and further extension [3, 4]. The symptoms can appear at any age, but are rare in the first two decades and the median age of diagnosis is 4th to 6th decades [5]. Paraduodenal hernia presents dramatically, and can cause a non-specific clinical picture, and often it reduces spontaneously, leading to diagnostic difficulties.

With a significant life time risk of intestinal obstruction, elective repair is usually recommended [9]. Operative repair involves the reduction of the hernia contents and closure of the paraduodenal defect. Sometimes, the paraduodenal defect may need to be enlarged to reduce the engorged loops of bowel. Incising the mesocolon through an avascular section distal to the lower edge of the paraduodenal defect avoids injury to the vessels in the mesocolon [9].

4. Conclusion

Paraduodenal hernias are the most common type of internal hernias. Left paraduodenal hernia is a rare congenital anomaly arising from an error of rotation of the midgut. They can be asymptomatic, can cause abdominal pain or may present with acute intestinal obstruction. CECT scan is the most specific imaging technique to come to a diagnosis preoperatively. It is important to consider the diagnosis of internal hernias in the differential diagnosis for a young patient with recurrent small bowel obstruction with no past history of any surgical intervention, however high degree of suspicion is required. Future complications can be prevented by timely surgical intervention.

5. References

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