COMPLICATED RIGHT PARADUODENAL HERNIA - A CASE REPORT

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ABSTRACT
Paraduodenal hernia, a rare congenital anomaly that arises from an error of rotation of the midgut, is the most common type of intra-abdominal hernia. There are two types, right and left paraduodenal hernia, the right being less common. We report the case of a 41-year-old patient with a right paraduodenal hernia who presented with two days history of continuous pain abdomen with multiple episodes of vomiting. Patient was decided to undergo laparotomy in view of increasing abdominal pain and development of peritonitis. In a planned laparotomy, herniation of the small bowel loops through the fossa of Waldeyer, behind the ascending mesocolon was found which was gangrenous with prolapse of a few gangrenous loops into the peritoneal cavity. The gangrenous bowel resected, and an end to end jejunoileostomy performed.

KEYWORDS
Paraduodenal hernia; Internal hernia; Intestinal obstruction

Case Report
A 41-year old male patient referred to our Department of General Surgery from a peripheral hospital with two days history of continuous and progressively increasing abdominal pain with multiple episodes of vomiting.

There was no history of previous abdominal surgery.

Physical examination revealed mild distension and tenderness of the upper abdominal quadrants, which appeared tympanic at percussion with a visible and palpable bulge in the right upper quadrant of the abdomen. Blood analysis was unremarkable.

USG abdomen showed free fluid in the peritoneal cavity, rest unremarkable. An abdominal CT scan with intravenous contrast demonstrated clustering of small bowel loops in the right upper quadrant, lateral to the duodenum, with the transverse colon located inferiorly.

The patient underwent a laparotomy, in view of increasing abdominal pain and signs of peritonitis. A large sac containing dilated gangrenous small bowel loops was identified behind the ascending mesocolon with prolapse of a few loops into the general peritoneal cavity, terminal ileum being intra-peritoneal was, however, normal. The ascending colon found, and the duodenojejunal flexure was present on the right side along with the SMA pedicle.

Surgical correction accomplished by resecting the entire gangrenous ileum after dividing the lateral attachment of the ascending colon. The hernia sac opened widely and rotated the right colon medially, respecting the entire gangrenous small bowel and performing an end to end jejunoileal anastomosis.

The colon was fixed back to the posterior peritoneum with the closure of the hernia defect. There were no other associated abnormalities at abdominal exploration.

Discussion
The term ‘paraduodenal hernia’ refers to a hernia of the entire small bowel, or part of it, into a sac derived from folds of peritoneum and fossae.

It commonly found at the terminal or fourth portion of the duodenum. No less than ten such peritoneal fossae have de-
The most frequently encountered are:

- inferior paraduodenal fossa of Treitz (60%)
- combined superior and inferior paraduodenal fossae (30%)
- superior paraduodenal fossa (5%)
- paraduodenal fossa of Landzert (2%)
- duodenojejunal or mesocolic fossa (2%)
- fossa of Waldeyer (1%) [1,2]

Approximately 75% of paraduodenal hernias occur on the left side of the abdomen and involve the paraduodenal fossa of Landzert. A 25% develop on the right, involving the fossa of Waldeyer, located in the mesojejunum, beneath the SMA and immediately below the duodenum. Their presence is more frequent in men than women, with a ratio of 3:1 [1].

Hernia symptoms can occur at any age, but the most typical age of presentation is in the 4th to a 6th decade of life. The period of our case falls in the most common range reported [3,4].

A person may be asymptomatic or present with non-specific symptoms of abdominal discomfort with undefined postprandial heaviness and weight loss.

These symptoms are commonly misdiagnosed and misattributed to other GI tract diseases like IBS, GERD, and biliary diseases [5] or the patients may present with small bowel obstruction initially uncomplicated which may later progress to complicated obstruction.

Physical examination is usually not revealing unless the hernia is large enough to produce an abdominal mass. Palpation may then confirm a vague soft to firm mass.

Our patient had the classic history of non-specific upper abdominal discomfort on and off for a long time. He presented with progressively increasing pain abdomen for two days with persistent vomiting, clinical examination revealing mild distension and tenderness of the upper abdominal quadrants with a vague lump palpable in the right upper abdomen.

Plain X-ray abdomen and ultrasonography were unremarkable in our patient. CECT abdomen however revealed a few classical findings of a right paraduodenal hernia in our patient: clustering of small bowel loops in the right mid abdomen with features of small-bowel obstruction with dilated loops containing air-fluid levels. Vascular findings include jejunal branches of the SMA and superior mesenteric vein looping posteriorly and to the right to supply the herniated loops were not evident in our case. [Figure 1] Additional classic CT findings include the presence of the SMA, ileocolic artery, and right colic vein in the anterior margin of the hernial sac neck, displaced anteriorly [3,6]. [Figure 2]

The surgical treatment of a right paraduodenal hernia, as reported in the literature, is to replace the pre- and post-arterial intestinal segments to their normal positions. At the end of the first stage of rotation, with the duodenum, jejunum and most of the ileum to the right, and the terminal ileum, cecum and colon on the left of the midline. It is their relation in the non-rotation of the intestine and accomplished by dividing the right lateral attachments of the colon and transferring it to the left side of the abdomen. Therefore, the hernia sac is widely opened, and the small opening through which the ileum passes eliminated. The hernia sac is now being part of the general peritoneal cavity.

The mortality rate associated with the condition is not clear but approximates 20-50%, due to the large proportion of patients with intestinal obstruction and ischemia requiring emergency surgery. There is a poorer prognosis if strangulation occurs, and a long segment of small bowel is rendered ischemic. Moreover, this may result from delay in intervention, as signs of peritonitis may masked by the retroperitoneal position of the hernia [7,8].

Conclusion

We report our experience of diagnosing and treating a case of right paraduodenal hernia. The condition is difficult to diagnose because being a rare pathology with a low incidence and because of the relative retroperitoneal position of the gut, the condition remains undiagnosed despite being complicated. We found CECT a particular investigation for suspecting the condition preoperatively.

Therefore despite being a rare disease, it should always be suspected in all obstructive syndromes and non-resolving persistent non-specific abdominal symptoms, and appropriate investigations done to identify the condition preoperatively. The surgical approach is the preferred treatment and is mandatory if features of complicated obstruction develop.

Authors’ Statements

Competing Interests

The authors declare no conflict of interest.
References


