

Transmesenteric Intraabdominal Hernia: A Case Report

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Abstract We present a case report of a rare condition called transmesenteric intraabdominal hernia. A 66-year old patient presented with severe abdominal pain without radiologic evidence of gut obstruction. The finding on CT scan led to the diagnosis of left side paraduodenal hernia (a congenital malformation). The report points out the key clinical symptoms and CT findings which lead to the decision for surgery on this patient. The correct diagnosis was made during surgery. In the report we also describe clinical and CT findings of transmesenteric intraabdominal hernia.

Keyword : Abdominal hernia, transmesenteric hernia

INTRODUCTION

Intraabdominal or internal hernia is defined as an abnormal protrusion of intestines through a normal or abnormal gap or hole in the peritoneum or mesentery. These are rare conditions in adults. The conditions can be either congenital or acquired. Internal hernias account for 1% to 5.8% of all intestinal obstructions¹⁻³. Internal hernias are divided into distinct subgroups based on their location, such as transmesenteric or paraduodenal. Paraduodenal hernias are responsible in nearly half of the patients who have internal hernias⁴.

Transmesenteric hernia is a rare cause of abdominal pain. It can lead to bowel obstruction, ischemia, and perforation with a high mortality. A timely and correct diagnosis with appropriate diagnostic tool is mandatory. A clinical diagnosis of transmesenteric hernia is difficult because of nonspecific

symptoms. In this study, we present a 66 year-old male patient with a transmesenteric hernia.

CASE REPORT

An obese 66 year-old Thai man presented with acute epigastric pain for six hours. He developed abdominal pain one day prior to arrival at our hospital. He went to another hospital previously and was diagnosed as having gastroenteritis. Six hours prior to arrival, his symptoms worsened. He did not have any gastrointestinal symptoms such as diarrhea or vomiting. He had benign prostatic hyperplasia. He was currently treated with an alpha-adrenergic receptor blocker for his urinary symptoms. He never had abdominal surgery. On the physical examination, there was epigastric tenderness with soft abdomen. He did not have inguinal hernia. Peripheral blood examination revealed mild

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leukocytosis, 10,400 per cumm, with 92% neutrophils. Serum electrolytes, liver enzyme and bilirubin levels, as well as urine examination were all normal. Acute abdomen radiographs (Figure 1) revealed focal small bowel dilatation and air-fluid levels at the left upper abdomen, with a soft tissue mass below.

The patient was treated with intravenous anti-spasmodic and intravenous morphine. His symptoms persisted. He had palpitation, sweating and severe abdominal pain. At this point, we decided to perform a CT scan of the whole abdomen (Figure 2). The provisional diagnosis on CT scan was left paraduodenal hernia. The patient was sent to operating theatre for abdominal laparotomy and was found to have a transmesenteric internal hernia.

On laparotomy, under general anesthesia, we found a well-formed transmesenteric hernia at mesentery of transverse colon. The contents of the hernia sac included small bowels, which were found to be viable. There was a small amount of reactive fluid. We reduced the contents of the sac and repaired the hernia defect using silk 3-0 simple sutures. There was only minimal blood loss.

The patient's symptoms were much improved on the second day after surgery. He was discharged home uneventfully after removal of the stitches, seven days after surgery. At one month follow-up, he was in excellent health.

DISCUSSION

Internal hernias are named according to their location. Commonly seen internal hernias include paraduodenal, transmesenteric, pericecal, intersigmoid, supravesical, foramen Winslow, retroanastomotic, and omental hernias. Paraduodenal hernia was first described by Treitz in 1857. Paraduodenal hernia is the most common form of internal hernias, accounting for 30% to 53% of all cases.

Paraduodenal hernias result from abnormal rotation of the midgut during embryonic development and can be divided into two subtypes, left and right paraduodenal hernias, according to their distinct pathogenesis and the resultant anatomical derangement. Approximately 75% are located on the left side, in Landzert's paraduodenal fossa. Around 50% of

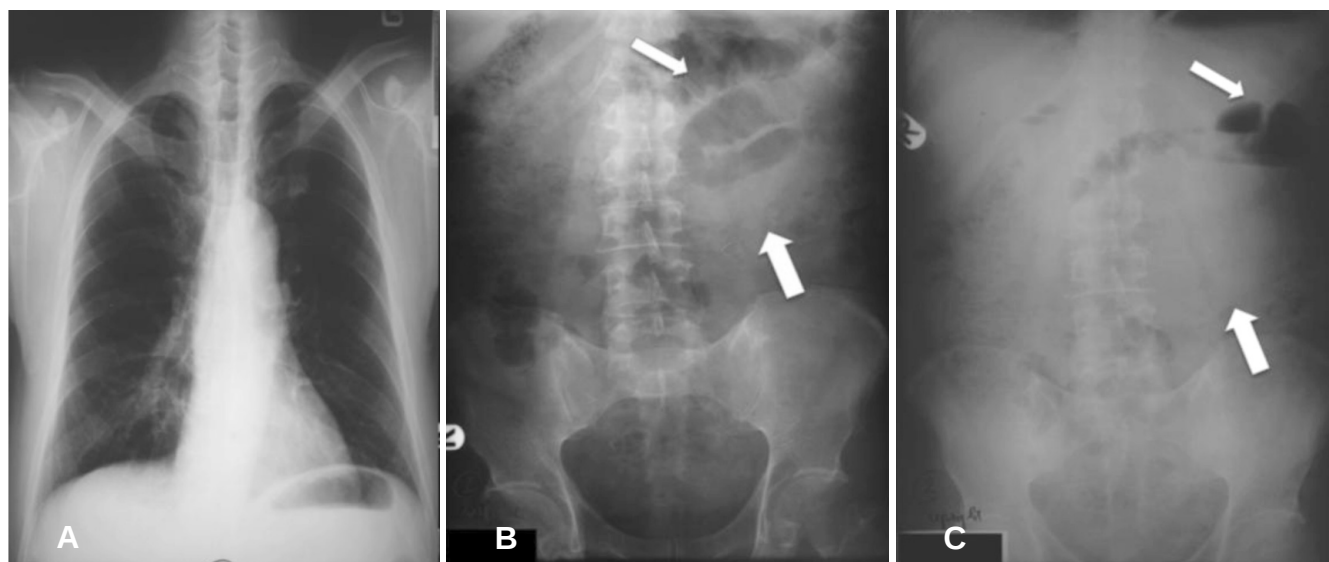


Figure 1 Acute abdomen radiographs

- Chest radiograph shows suboptimal study due to poor inspiration. However, no obvious cardiopulmonary abnormality can be seen.
- Supine anteroposterior abdominal radiograph shows focal dilatation of small bowel loops (small arrow) at left upper abdomen and a soft tissue density just below and overlying focal bowel loops dilatation (large arrow).
- Upright anteroposterior abdominal radiograph shows air-fluid level at peripheral part of focal dilatation of small bowel loops at left upper abdomen (small arrow), and a large soft tissue opacity in left upper to mid abdomen below focal bowel loops dilatation (large arrow) is seen.

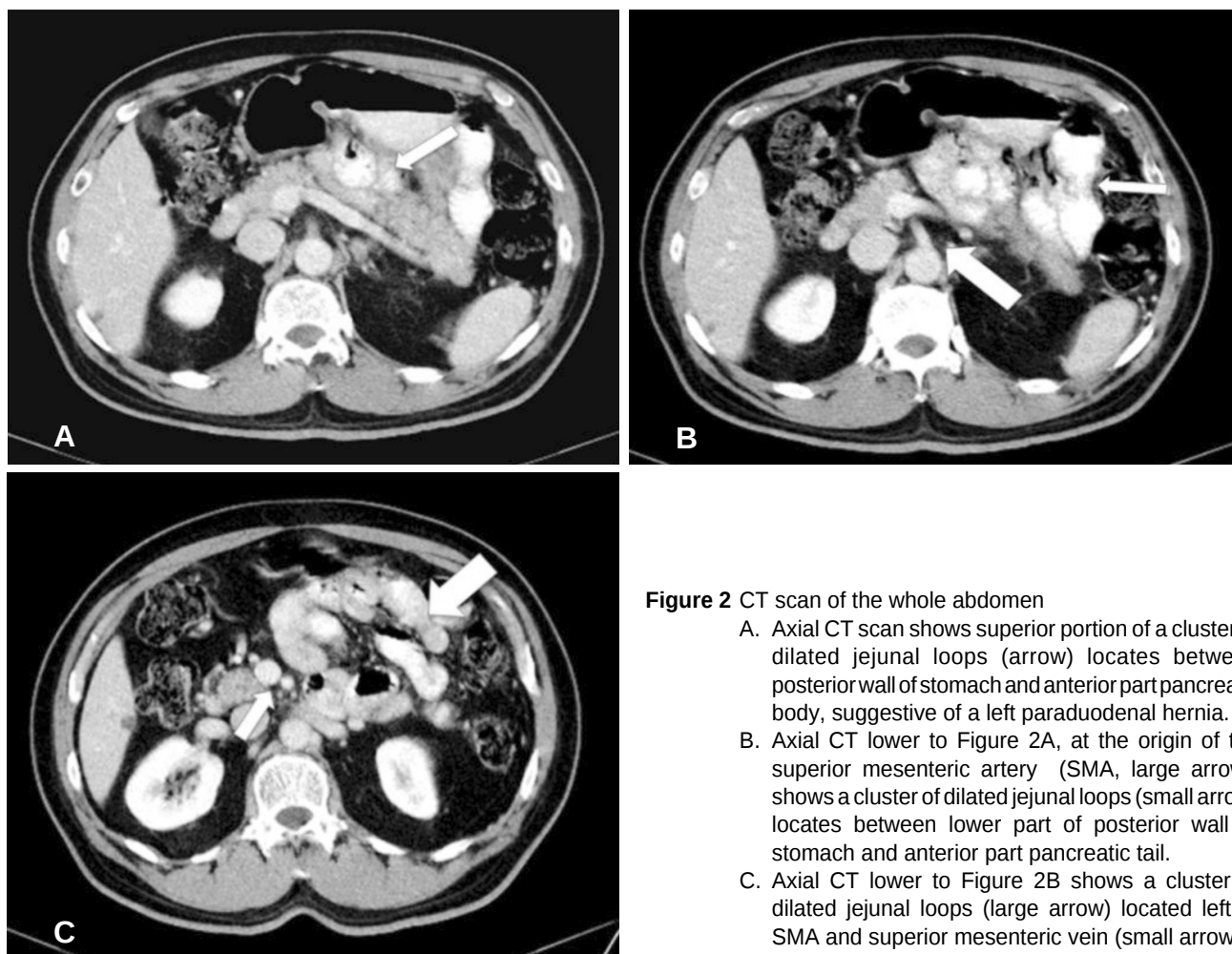


Figure 2 CT scan of the whole abdomen

- A. Axial CT scan shows superior portion of a cluster of dilated jejunal loops (arrow) locates between posterior wall of stomach and anterior part pancreatic body, suggestive of a left paraduodenal hernia.
- B. Axial CT lower to Figure 2A, at the origin of the superior mesenteric artery (SMA, large arrow), shows a cluster of dilated jejunal loops (small arrow) locates between lower part of posterior wall of stomach and anterior part pancreatic tail.
- C. Axial CT lower to Figure 2B shows a cluster of dilated jejunal loops (large arrow) located left to SMA and superior mesenteric vein (small arrow).

patients with paraduodenal hernias have episodes of intestinal obstruction during certain periods of their lives. Symptoms seen in these cases can range from transient colicky abdominal pain to those of intestinal obstruction. The remaining 50% of the cases follow an asymptomatic clinical course and are diagnosed incidentally¹.

Imaging methods play a pivotal role in the diagnosis of internal hernias. Plain X-rays can yield information regarding the intestinal segment from which the herniation stems and the extent of intestinal obstruction, while abdominal CT shows dislocated, distended, expanded, and gathered small intestinal segments^{1,5}. Moreover, the CT can also show displacements of mesenteric vascular structures. Diagnostic laparoscopy can provide both verification of the diagnosis and simultaneous surgical intervention, especially in cases that could not be diagnosed by radiological methods.

The basic principles in the treatment of any type of hernia also hold true in the treatment of paraduodenal hernia. These are the repair of the defect and the resection of the hernial sac at times when reduction of incarcerated intestinal segments is necessary. Treatment of left and right paraduodenal hernias may require cutting the sac which may be a part of small bowels mesentery in order to free the hernia contents. Surgeons should be aware of this fact to reduce complications from mesenteric vascular injuries.

Transmesenteric hernias are intraperitoneal hernias which have no sac and consist of the protrusion of a loop of bowel through an aperture in the mesentery⁵. Transmesenteric hernia is a rare cause of small bowel obstruction and is seldom diagnosed preoperatively partly because of unfamiliarity with this type of internal hernia. A number of publications have recommended CT as a useful tool for diagnosis of the

lesion^{6,7}. The operative treatment is easier than that of paraduodenal hernias. This simply consists of reduction and closure of the mesenteric defect.

CONCLUSION

We presented a case of transmesenteric internal hernia. Transmesenteric internal hernia is a rare cause of small bowel obstruction. Clinical symptoms include repeated severe abdominal pain and gut obstruction, but without definite radiologic evidence. The condition can lead to serious complications such as bowel ischemia. Because of the difficulty in diagnosis, transmesenteric internal hernia should be in the differential diagnosis of patients with no prior abdominal surgery who frequently have recurrent clinical of gut obstruction.

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