

Case Report

Internal hernia through dual defects: defects in transverse mesocolon and lesser omentum a rare presentation: case report

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ABSTRACT

Internal hernias have the potential to cause small bowel obstruction. Congenital internal hernias are impossible to diagnose clinically and radiologically in asymptomatic patients. We presented a case of 36 years male with complaints of pain abdomen abdominal distension and vomiting, contrast-enhanced CT showed an internal hernia with small bowel obstruction. On exploration, small bowel loops were identified near the lesser curvature and they are congested an edema was present, a defect of 5×1 cm was identified in the transverse mesocolon and was managed by reducing the hernia sac and closure of the defect in the mesentery of the transverse colon. If the intervention was delayed internal hernia might lead to ischemia, gangrene increasing morbidity and mortality. Early intervention is the key to decrease morbidity and mortality.

Keywords: Internal hernia, Trans-mesenteric defect, Laparotomy

INTRODUCTION

Internal hernias are a rare cause of intestinal obstruction and have the potential to cause bowel ischemia, gangrene leading to high morbidity and mortality.¹ Diagnosis is elusive even in the acute setting and can be diagnosed only during surgery.^{2,3} Of the internal hernia's trans-mesenteric hernia is a rare entity and is seen in 5-10% of the internal hernias. Timely identification and management are important to prevent strangulation, ischemia, and gangrene.⁴ A 36-years male presented to a tertiary health care center with internal hernia where the defect was identified in the mesentery of the transverse colon and lesser omentum, with timely intervention we could able to decrease the morbidity.

CASE REPORT

A 36-years male presented with complaints of pain abdomen for 15 days, the patient also had complaints of

vomiting and abdominal distension for 2 days. There was no relevant family history that could affect diagnosis and management. On clinical examination, upper abdominal distension was noted without tenderness. His biochemical investigations were within the normal range. There was no history suggestive of previous surgery. Radiological features of the X-ray erect abdomen were suggestive of small bowel obstruction. Clustering of the small bowel loops in the lesser sac and inferior to the undersurface of the left lateral segment of the liver were seen in contrast-enhanced CT abdomen (Figure 1A and B). These non-specific features raised suspicion of internal hernia, the patient was optimized with intravenous fluids and planned for immediate laparotomy. On laparotomy small bowel loops were identified near the lesser curvature area inferior to the left lobe of the liver, some of the loops were identified in the lesser sac. A 5×3 cm defect was identified to the right of transverse colon mesentery with small bowel as the content (Figure 1C). Another defect was noted in the lesser omentum through which the small bowel was

herniating without the sac (Figure 1D). After opening the lesser sac hernia contents were reduced and the mesenteric defect and omental defect were closed using 3-0 polypropylene sutures in a continuous fashion (Figure 1E). The post-operative course was uneventful and the patient was discharged on post-operative day 3. The patient had no complaints in the follow up period.

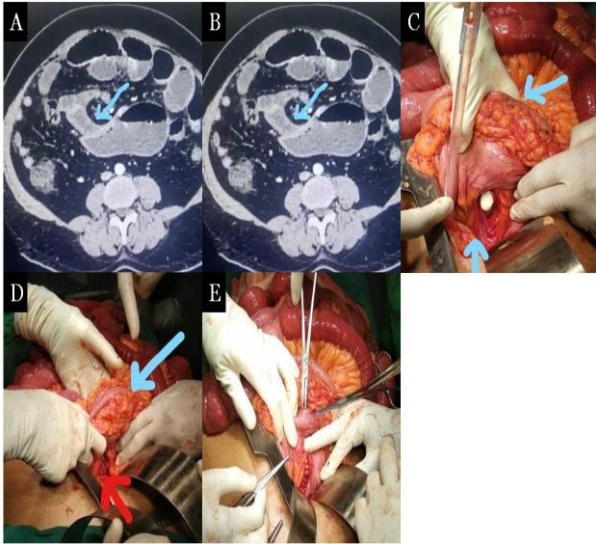


Figure 1: (A) Contrast-enhanced images in axial and sagittal sections showing herniated small bowel loops near lesser curvature; (B) axial section of contrast-enhanced CT showing small bowel loops herniating through the lesser omentum; (C) defect in the transverse colon mesentery to the right of middle colic vessels, blue arrow showing the transverse colon and red arrow shows defect in the mesocolon; (D) defect in the lesser omentum, near meso pyloric region; and (E) herniated bowel loops were reduced and omental, mesocolic defects were closed using 3-0 polypropylene sutures.

DISCUSSION

Protrusion of the viscus through intra-abdominal apertures leads to small bowel obstruction, strangulation, or bowel gangrene.¹ Internal hernia, might be congenital or acquired and the most common are para-duodenal hernias seen in around 53% of the patients.^{1,5,6}

Trans-mesenteric hernias are a rare entity with a bimodal distribution, occurring in both adults and pediatric populations.² One popular theory relates the cause to prenatal thinning of mesenteric leaves due to prenatal intestinal ischemia and other causes would be intraperitoneal inflammation, trauma, fenestration of the mesentery by colon during embryological displacement into the umbilical cord.²

In adults, iatrogenic trans-mesenteric are more common than spontaneous hernias. Iatrogenic trans-mesenteric hernias are more commonly associated with gastric bypass

surgeries. Undetected or when the diagnosis is delayed, small bowel obstruction might lead to gangrene, ischemia leading to increased morbidity and mortality.^{3,4} Strangulation and gangrene were reported in around 30-40% of the patients with the trans-mesenteric hernia.⁴ Index case has no history of surgery/trauma and the symptoms are due to spontaneous/congenital trans-mesenteric hernia with the defect in the colonic mesentery.

Pre-operative diagnosis is difficult to make because of nonspecific radiological findings. Radiological features suggestive of small bowel obstruction might be noted in plain X-ray of the abdomen. Contrast-enhanced CT of the abdomen has an essential role in diagnosis and surgical planning, common indicators for an internal hernia include engorgement, stretching, crowding, or twisting.^{4,7,8} Blachar et al reported a sensitivity of 63% and specificity of 76% in diagnosing a trans-mesenteric hernia.⁹ Even though abdominal CT shows the hernia sac with its relations to surrounding vasculature and organs, there are no well-established CT criteria for transmesenteric hernia.¹⁰

Sacculations and crowding of small bowel loops within the sac and distributed arrangement with the abnormal location of small bowel loops might be suggestive of internal hernias.^{11,12}

One should not delay emergent laparotomy/laparoscopy given the increased risk for ischemia and gangrene. Lack of herniation sac or pouch which allows considerable length was associated with a high complication rate with mortality ranging from 38-73%.^{10,12,13} Transmesenteric hernias can be through small bowel mesentery which is more common in children or through the transverse colon mesentery.^{12,14}

In the index case, the small bowel was herniated through a defect in the transverse colon without the mesenteric sac which was rare compared to herniation through small bowel mesentery.¹⁵

A high index of clinical suspicion is required for internal hernias when there are no signs of inguinal hernia or a history of previous abdominal surgeries.¹⁶⁻¹⁹ All the patients require timely intervention with reduction of herniated bowel loops, closure of the defect, and if required intestinal resection.²⁰ Morbidity and mortality depend on the time of onset, vascular compromise of the bowel.

CONCLUSION

To conclude trans-mesenteric hernia with protrusion of small bowel through transverse colon mesentery is a rare entity. Timely intervention prevents morbidity and mortality.

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