CASE REPORT

Left-sided transmesocolic herniation of small bowel in an otherwise unaffected abdomen

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SUMMARY

Transmesocolic hernia is an uncommon type of internal hernia with incidence ranging from approximately 5–10%. To the best of our knowledge, this is the first reported case of a transmesocolic hernia through a gap within the descending mesocolon presenting clinically as an intestinal obstruction. A 75-year-old man was admitted with clinical features of intestinal obstruction. An abdominal X-ray showed multiple small bowel loops with air fluid levels. Contrast-enhanced CT of the abdomen revealed small bowel obstruction not only on the right, but also on the left side of the collapsed descending colon. Emergency surgery was performed. Strangulated bowel loops with gangrenous changes were resected and double-barrel ileostomy was carried out. The postoperative period was uneventful. Restoration of bowel was performed after 6 weeks. Preoperative diagnosis of bowel obstruction caused by a transmesocolic hernia remains difficult despite the currently available imaging techniques. Prompt surgery can prevent serious complications such as peritonitis and sepsis.

BACKGROUND

Preoperative diagnosis of internal herniation of the small bowel in an emergency setting is seldom made. Transmesocolic hernia is an uncommon type of internal hernia in which the intestine prolapses through a slit in the large bowel mesentery with incidence ranging from approximately 5–10% of all internal hernias.^{1–4} Acute intestinal obstruction is the most common presentation of internal herniation.⁵ These slits usually result from antecedent surgery or trauma, and are occasionally congenital.^{4–6} As in the vast majority of hernias, displaced and often strangulated bowel segments have to be resected.^{2–7} Transmesocolic hernias of the ascending colon, which are rare, have been documented in the literature. However, this is the first reported case of transmesocolic hernia of the descending colon, to the best of our knowledge.

CASE PRESENTATION

A 75-year-old otherwise healthy man was admitted to the surgical emergency of our university hospital due to vomiting, increasing abdominal distension and progression to obstipation over the past 5 days. He had no comorbidities and no antecedent history of abdominal trauma or surgery. Abdominal examination revealed generalised distention and peritonitis. Bowel sounds were sluggish and rectal examination revealed an empty, collapsed rectum.

INVESTIGATIONS

Laboratory investigation on admission revealed a normal haemogram and liver function tests. An erect abdominal X-ray showed multiple dilated small bowel loops with air fluid levels with no free air under the dome of the diaphragm. Contrast-enhanced abdominal CT (CECT abdomen) (*figure 1*) showed small bowel dilation not only on the right, but also on the left side of the descending colon, and dilation of the oral small bowel. Hence a provisional diagnosis of left-sided internal hernia was made.

TREATMENT

After preoperative diagnosis of left-sided transmesocolic hernia, our patient was hospitalised for exploratory laparotomy. Intraoperatively, there was internal herniation of ileal loops through a defect in the descending mesocolon, with strangulation and 30 cm of non-viable small bowel approximately 10 cm proximal to the ileocolic junction (*figure 2*). The contents were reduced, non-viable bowel loops resected and a double barrelled intestinal stoma was created. The slit in the descending mesocolon was approximated.

OUTCOME AND FOLLOW-UP

The postoperative course was uneventful; the patient was allowed an oral diet on postoperative day (POD) 2 and discharged on POD5 with no residual complications of surgery and without anaesthesia. Restoration of the bowel was performed after 6 weeks. To date, our patient is doing well.

Figure 1 CT of the abdomen reveals collapsed descending colon (red arrow) with dilated small bowel (green arrow), which has herniated through the mesocolon (blue arrow) to occupy the left paracolic gutter.

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Figure 2 Herniated bowel showing gangrenous changes.

DISCUSSION

Abdominal hernias can be classified into external hernias, internal hernias and diaphragmatic hernias.⁸ Internal hernias are protrusions of abdominal content through an aperture, mesentery or peritoneal ligament, leading to impaction within another compartment of the otherwise intact abdominal cavity. These hernias may be congenital or acquired, intermittent or persistent. The classification of internal hernias is based on anatomic regions with distinctive clinical and radiographic features: paraduodenal (left>right) (53%), foramen of Winslow (8%), pericecal (13%), intersigmoid (6%), transmesenteric and transmesocolic (8%), transomental (1–4%), and retroanastomotic, supravescical and pelvic (6%).⁶ Transmesenteric hernias are of three main types: transmesocolic, through a small bowel mesenteric defect and Peterson's hernia.⁹ In adults, common causes of mesenteric defects include prior abdominal surgery, abdominal trauma or intraperitoneal inflammation.^{10–11} Our case was unique in that an elderly patient presenting with transmesocolic hernia of descending colon without an antecedent history of trauma or surgery was affected. Compared to other subtypes, transmesocolic hernias more often develop complications such as volvulus and strangulation, or ischaemia. The reported incidence of these complications is as high as 30% and 40%, respectively, with mortality rates reaching 50% for treated groups and 100% for non-treated subgroups.^{12–13} A transmesocolic hernia is difficult to diagnose preoperatively and often requires resection of the affected intestine during surgery.^{2–7} While some patients with internal hernias are asymptomatic, others have non-specific symptoms such as intermittent colicky abdominal pain and vomiting, with or without abdominal distension. As hernia orifices are small, mechanical small bowel obstruction usually occurs in cases with transmesocolic herniation.

The CECT diagnosis of transmesocolic hernias is even more challenging compared with other subtypes, because of the lack of a confining sac resulting in a more variable appearance.¹³ However, the CT findings considered to be specific for these internal hernias include engorgement of the mesenteric vascular structures, right or left displacement of the descending colon and dilation of prestenotic small bowel loops.^{13–15} However, differentiation of the aforementioned types of internal hernias based on clinical and radiological findings is often impossible.⁶ In our case, abdominal CT demonstrated pathognomic findings as dilated small bowel loops were not only found on the right, but also on the left side of the compressed descending colon.

Although there are anecdotal reports of transmesocolic hernias of the ascending colon^{16–18} in the PubMed search engine, this entity has not been reported affecting the descending colon.

In patients suspected of having an internal hernia, early surgical intervention is advisable due to high rates of complications, and high morbidity and mortality rates. Early CT diagnosis in patients suffering from symptoms of intestinal obstruction provides unequivocal diagnosis, and thus can reduce morbidity and mortality.

Learning points

- ▶ The rare occurrence of internal hernias and the absence of specific clinical features make the preoperative diagnosis difficult.
- ▶ In this case, we describe a transmesocolic hernia of the descending colon with intestinal obstruction, which was diagnosed preoperatively.
- ▶ Contrast-enhanced CT of the abdomen provides preoperative diagnosis of transmesocolic hernias, supporting the decision for early surgical intervention. Morbidity and mortality can be reduced effectively.

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