Early intervention in intersigmoid hernia may prevent bowel resection—A case report

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A B S T R A C T

INTRODUCTION: Intersigmoid hernia is a rare internal hernia presenting with symptoms of bowel obstruction. Preoperative diagnosis is uncommon but computerised tomography (CT) may show signs to suggest internal hernia.

PRESENTATION OF CASE: A 63-year-old female presented with abdominal pain, vomiting and absolute constipation. Examination revealed a tense distended abdomen. A plain abdominal radiograph showed features of small bowel obstruction. Conservative management was initiated without success and a CT scan was performed which showed a dilated distal oesophagus, stomach and small bowel with a non-dilated length of distal ileum and large bowel. Internal hernia was suggested as a possible cause and the patient underwent a laparotomy where a loop of small bowel was found to be strangulated and gangrenous within the intersigmoid fossa. The gangrenous bowel was resected, an end-to-end anastomosis was performed and the fossa was closed. The patient made an uneventful recovery.

DISCUSSION: Hernias of the sigmoid mesocolon account for 6% of internal hernias with internal hernias themselves causing between 0.2 and 4.1% of intestinal obstruction. This report presents a case of intersigmoid hernia, a rare internal hernia which should be suspected in patients presenting with acute obstruction, no past surgical history and no external hernia. Patients with these symptoms should receive an urgent CT scan to facilitate early surgery and minimise strangulation and prevent bowel resection.

CONCLUSION: Intersigmoid hernia presents with acute obstruction, no past surgical history and no external hernia. Urgent CT scanning and early surgery may minimise strangulation, conserve bowel and reduce patient morbidity and mortality.

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1. Introduction

The intersigmoid hernia is part of a rare group of three internal hernias known as sigmoid mesocolon hernias. Clinically they present with small bowel obstruction and are rarely diagnosed preoperatively. However, absence of previous surgery with no external hernia should raise suspicions of the diagnosis. Computerised tomography (CT) diagnosis can identify internal hernias and may be suggested by the presence of a sac-like mass or cluster of diluted small bowel loops at an abnormal anatomic location, and observation of an engorged, stretched, and displaced mesenteric vascular pedicle and of converging vessels at the hernial orifice. Features specific to intersigmoid hernia include a U- or C-shaped cluster of small bowel posterior and lateral to the sigmoid colon. Early CT and surgical intervention is critical as mortality exceeds 50% when strangulation is present. Case reports of intersigmoid hernia are infrequent in the literature. This report presents a case of intersigmoid hernia in a small district general hospital.

2. Presentation of case

A previously fit and well 63 year-old female was admitted with a three day history of cramping lower abdominal pain, vomiting, bloating, anorexia and absolute constipation. Past medical history included hypercholesterolaemia, gastro-oesophageal reflux disease, tubal ligation and right total hip replacement. There was no family history of note. Medications at presentation included Pravastatin and Ezetimibe. She was a non-smoker and did not drink alcohol.

General examination was unremarkable. Abdominal examination revealed a tense distended abdomen with marked tenderness in the left iliac fossa. Percussion was resonant, with scanty tinkling bowel sounds on auscultation. The initial impression of the admitting team was small bowel obstruction.

Conservative management was initiated with a ‘drip and suck regime’. Initial bloods revealed a white cell count of 14.0, neutrophil count of 12.6, CRP of 234. All other haematological parameters

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Fig. 1. Scanning CT (frontal view) of the patient demonstrating dilated stomach and small bowel loops.

Fig. 2. CT scan showing dilated loops of proximal small bowel (A) with normal distal small bowel (B).

Fig. 3. Strangulated and adjacent normal bowel loop entering the intersigmoid fossa.

Fig. 4. Strangulated loop of bowel with constriction ring seen superiorly after delivery from the intersigmoid fossa.

Fig. 5. The location of the intersigmoid fossa at the base of the sigmoid mesentery. Source: Author’s impression.

were within normal limits. Erect chest X-ray was unremarkable. Abdominal X-ray demonstrated a dilated stomach and small bowel consistent with small bowel obstruction (see Fig. 1).

The patient showed little sign of improvement and a CT abdomen and pelvis with intravenous contrast was ordered. This showed a dilated distal oesophagus, stomach and small bowel with a non-dilated length of distal ileum and large bowel (see Fig. 2). The appearances were consistent with distal small bowel obstruction although no external hernias, intussusception, gallstone or biliary gas could be identified to suggest a cause. Internal hernia or fibrous bands were suggested as possible causes.

She underwent a laparotomy during which a loop of small bowel was found to be strangulated and gangrenous within the intersigmoid fossa (see Figs. 3 and 4). The small bowel was resected, an end-to-end anastomosis was performed and the fossa was closed.

The post-operative period was uneventful and the patient was discharged on the 8th post-operative day.
3. Discussion

Hernias of the sigmoid mesocolon as defined by Benson and Killen\(^1\) include intersigmoid, transmesosigmoid and intramesosigmoid hernias and together they represent around 6% of all internal hernias. Other causes include Paraduodenal (53%), Pericaecal (13%), Foramen of Winslow (8%), Transmesenteric (8%) and Transmesocolon (1–4%).\(^5\) Internal hernias are the cause of intestinal obstruction in between 0.2 and 4.1% of cases,\(^1,2\) although the incidence is considerably higher in patients who have undergone liver transplant or gastric bypass surgery (>50%).\(^6,7\) With the exception of these patients approximately 1/800 cases of obstruction will be due to any sigmoid mesocolon hernia, with a lower incidence of intersigmoid hernia itself.

The pathogenesis of intersigmoid hernia involves herniation of a viscus, usually small bowel, through the intersigmoid fossa, a recess located at the level of the iliac crest where the descending colon becomes the sigmoid colon and acquires a mesentery. The sigmoid colon is described as having two portions: iliac (fixed) and pelvic (mobile). The average length of the attachment is 7.9 cm and the average breadth of the mesentery is 5.6 cm. The left ureter passes through the base of the sigmoid mesocolon through the intersigmoid fossa (see Fig. 5). It is the abnormal passage of abdominal contents through this orifice that produces the intersigmoid hernia.

We present a case of intersigmoid hernia with bowel strangulation requiring resection. Conservative management was unsuccessful. Subsequent CT scanning facilitated the differential diagnosis of small bowel obstruction secondary to internal hernia and prompt surgical intervention following this diagnosis prevented further morbidity or mortality.

Conservative management should be abandoned early or avoided if the patient’s symptoms are suggestive of internal hernia. These patients must receive CT scanning early to aid diagnosis and timely surgical intervention thus minimising the time-dependent risk of bowel strangulation, ischaemia and infarction.

4. Conclusion

Intersigmoid hernia is a rare internal hernia which is uncommonly diagnosed preoperatively, but should be suspected in any patient presenting with acute obstruction, no past surgical history and no external hernia. Patients presenting with these features should have an urgent CT scan and undergo early surgery to minimise strangulation, conserve bowel and reduce patient morbidity and mortality.

Conflict of interest statement

None to declare.

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Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contributions

Oliver Harrison—writing and illustration.
Rishaba Sharma—photography and manuscript review.
Mohammed Niayesh—manuscript review.

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