

Case Report

Small bowel obstruction caused by transmesosigmoid internal hernia

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Received: 08 February 2024

Accepted: 06 March 2024

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ABSTRACT

Internal hernia is an uncommon occurrence contributing to intestinal obstruction, posing diagnostic challenges. Among the infrequent manifestations, one noteworthy type is associated with the sigmoid colon, categorized into three subtypes: inter-sigmoid, trans-mesosigmoid, and intra-mesosigmoid. We present a case of a 48-year-old female who presented with small bowel obstruction as an emergency. CT showed intestinal obstruction with translational point at mid jejunum without any mass identified. At laparotomy we identified an internal hernia in the sigmoid mesocolon with full thickness mesentery defect (transmesosigmoid), bowel was viable and reduced where the defected was closed. Early identification of internal hernia and early management prevent mortality and morbidity; sigmoid related hernia is rear type of internal hernia. Most internal hernia diagnosed during laparotomy searching for case of acute intestinal obstruction.

Keywords: Small bowel obstruction, Internal hernia, Sigmoid related hernia, Transmesosigmoid internal hernia

INTRODUCTION

Internal hernia, characterized by the protrusion of a visceral organ through a peritoneal or mesenteric opening, represents a seldom-encountered etiology of small bowel obstruction in the adult population. The predominant clinical presentations manifest as acute symptoms in 75% of cases or intermittent symptoms in 22% of cases indicative of small bowel obstruction. Typically, internal hernias are diagnosed during surgical intervention. early identification and management of internal hernia prevent complication and preserve the bowel.^{1,2}

Internal hernia constitutes a causative factor in up to 5.8% of instances of small bowel obstruction. Existing literature reports an overall mortality rate exceeding 50% in the absence of surgical intervention. Notably, hernias related to the sigmoid related hernia are particularly uncommon, contributing to 6% of all internal hernias.³⁻⁴

Clinical diagnosis of internal hernias proves challenging due to their manifestation as intestinal obstruction without external protrusion. Consequently, preoperative evaluation is crucial, with computed tomography (CT) scans playing an important role in excluding other pathologies. computed tomography scans can reveal intestinal obstruction, hernia orifice and sac characteristics, intestinal dilatation, collapse, or twisting. The clinical presentation of internal hernias typically involves obstructive symptoms, including abdominal pain, nausea, vomiting, constipation, and distention. As a result, internal hernias are predominantly identified intraoperatively during emergency laparotomies. A preoperative diagnosis is rarely confirmed in an emergency setting.⁵

CASE REPORT

A 48 years old female not known to have any medical illness with surgical history previous bilateral inguinal

hernia repair 20 years ago, presented to emergency department with colicky abdominal pain for the last one week, associated with multiple times vomiting, constipation, abdominal distention, with history for chronic abdominal pain for the last one year which resolve spontaneously. on examination, vital signs, tachycardic 120\bpm, normal blood pressure. abdominal distended, tenderness all over, per-rectum examination revealed, empty rectum. labs test showed elevated WBC 20.

X-rays showed multiple air fluid level, therefore computed tomography done and showed distended small bowel loops with transition point at mid jejunum, with completely collapsed distally, no mass was identified (Figure 1).

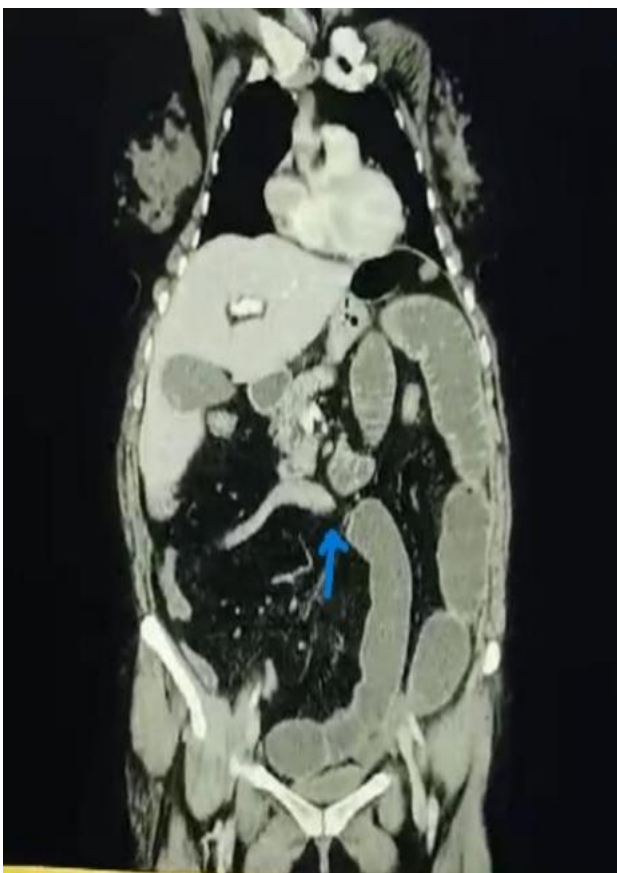


Figure 1: Blue arrow shows site of obstruction, dilated small bowel proximally and collapsed distally.

After stabilization of the patient laparotomy was done and the result was, internal hernia in the mesocolon (transmesosigmoid hernia, full thickness defect) of the sigmoid colon, which small bowel herniate through with dilated small bowel loops proximally and completely collapsed distally, the bowel was viable therefore no resection was needed, the defect was closed (Figure 2 A-C).

Recovery was uneventful and discharged home day four post operation.

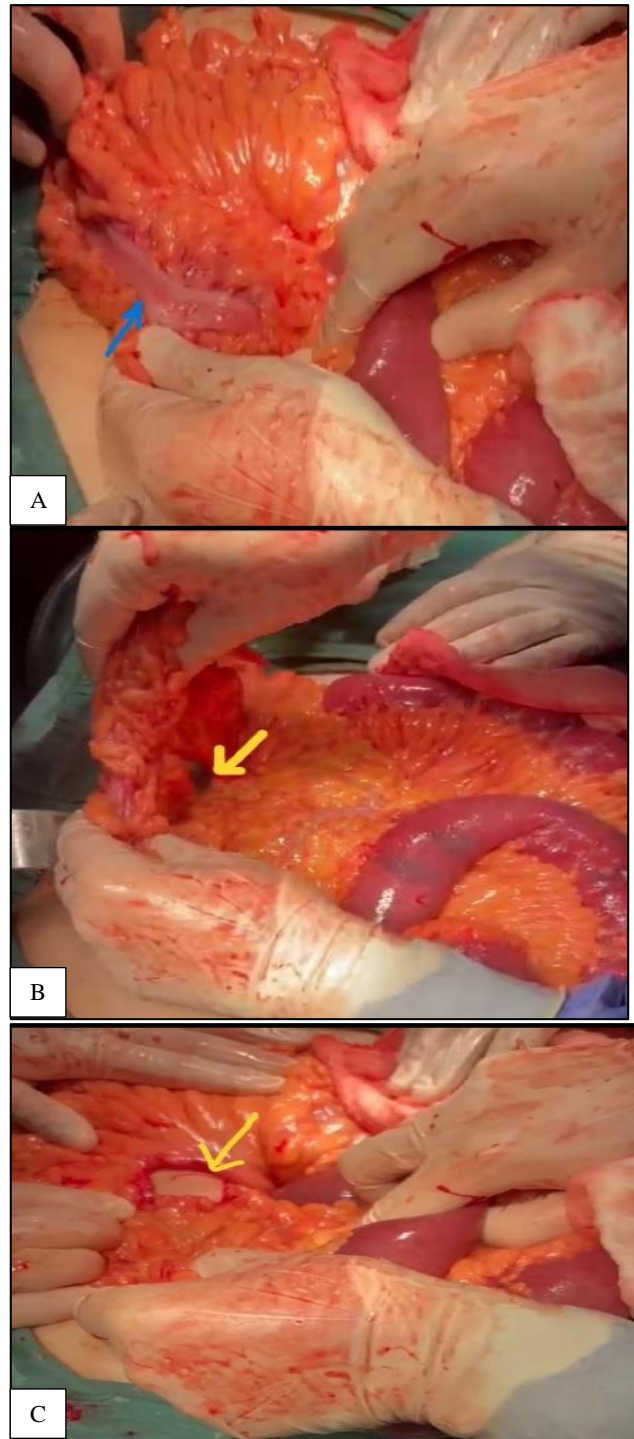


Figure 2 (A-C): Blue arrow shows taenia of sigmoid colon, yellow arrow shows site of mesenteric defect (full thickness).

DISCUSSION

Internal hernia represents a relatively uncommon etiology of intestinal obstruction.

Diagnostic modalities for internal hernia include plain abdominal radiography, barium examination, and abdominal computed tomography (CT) scan. Notably,

although abdominal CT scans exhibit a sensitivity and specificity of 63% and 73%, respectively, in the diagnosis of internal hernia, these hernias are often identified intraoperatively in patients experiencing acute intestinal obstruction during emergency laparotomies.⁶ Sigmoid-related internal hernias are infrequent occurrences that may be managed through both laparoscopic and open approaches. The open approach provides enhanced bowel manipulation and facilitates ease of manipulation, while laparoscopic intervention, though more challenging, is associated with a quicker recovery period.⁷

Internal hernia which related to sigmoid mesocolon classified to three types and described by Benson and Killen in 1964: (1) intersigmoid hernia involves herniation into the inter-sigmoid fossa, situated at the attachment point of the lateral side of the sigmoid mesocolon. The inter-sigmoid fossa is formed by the fusion of the parietal peritoneum of the posterior abdominal wall and the left peritoneal surface of the sigmoid mesentery; (2) transmesosigmoid hernia is characterized by the incarceration of intestinal loops due to a full-thickness defect in the sigmoid mesocolon; and (3) intramesosigmoid hernia pertains to a singular leaf (more commonly on the lateral side) of the sigmoid mesocolon, affected by a congenital oval defect adjacent to the colon. This defect is independent of the intersigmoid fossa and leads to herniation.

The internal hernia in this report is a transmesosigmoid hernia since mid-part jejunum was obstructed sigmoid mesocolon with full-thickness defect. Early identification of internal hernia and early management prevent mortality and morbidity.^{7,8}

CONCLUSION

Early identification of internal hernia and early management prevent mortality and morbidity; sigmoid related hernia is rear type of internal hernia. Most internal hernia diagnosed during laparotomy searching for case of acute intestinal obstruction.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Ghaith AM, Al-Kharabsheh AA, Al-Sakarne MI, Ghaith OM. Small bowel obstruction caused by transmesosigmoid internal hernia. *Int Surg J* 2024;11:652-4.