Internal Hernia through Paraduodenal Recess with Acute Intestinal Obstruction: A Case Report

Ayanat Husain · Sanjay Bhat · Akhilesh K. Roy ·
Vijay Sharma · Saurabh A. Dubey ·
Mohammad S. Faridi

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Abstract Internal hernia is a rare cause of small bowel obstruction. It may account for 0.2 to 0.9 % of cases of intestinal obstruction. Intestinal obstruction due to internal hernia is very dangerous and lethal because it may be silent or may present as severe acute abdominal pain. We describe a case of acute intestinal obstruction which presented in our emergency department.

Introduction

Internal hernia results from protrusion of one or more abdominal viscera through an intraperitoneal opening with the herniated viscera remaining inside the peritoneal cavity. Intraperitoneal openings may be normal (Foramen of Winslow) or abnormal (Paraduodenal fossa, Ileocecal fossa, Supravisceral fossa, transomental & transmesenteric opening). Internal hernias are infrequent, accounting for 0.2 to 0.9 % cases of intestinal obstruction and 0.5 to 4.1% cases of acute intestinal obstruction caused by hernia. Internal hernia may be congenital or acquired and has a high risk of strangulation of bowel loops. Types of internal hernia and their relative incidence is as follows:

- (i) Paraduodenal - 53% left is more common
- (ii) Foramen of Winslow - 8%
- (iii) Transmesenteric - 8%
- (iv) Transomental - 1–4%

- (v) Pericecal - 13%
- (vi) Intersigmoid - 6%
- (vii) Supravesical and Pelvic - 6%

Case Report

A 55 year old male patient was admitted to emergency department with complaints of repeated episodes of vomiting, absolute constipation, colicky abdominal pain and abdominal distension for last 12 hours. On clinical examination patient was dehydrated, abdomen was soft and distended with no scar marks suggesting any history of previous abdominal operation. Hematological and biochemical investigations were normal. Plain X-ray abdomen shows multiple air fluid levels. Ultrasound abdomen was done which did not reveal any significant information.

Provisional diagnosis of acute intestinal obstruction was made and patient underwent exploratory laparotomy that revealed a small segment of ileum had herniated through an opening in ascending mesocolon (Fossa of Waldayer) with right colic vein anteriorly. On reduction bowel was having mild ischemia which reverted a few minutes after the loop was released. For reduction we had to widen the orifice laterally.

Post operative period was uneventful and patient recovered well. He was discharged on 12th post operative day. At the followup 2 months later he was completely recovered.

Discussion

Paraduodenal fossa originates at the congenital anomalies owing to failure of mesenteric fusion with parietal

A. Husain (✉) · S. Bhat · A. K. Roy · V. Sharma · S. A. Dubey ·
M. S. Faridi
Era's Lucknow Medical College,
Lucknow, Uttar Pradesh, India
e-mail: ayanathusain@gmail.com

peritoneum and abnormal rotation of intestine [1]. Right paraduodenal hernia involves fossa of Waldayer located immediately behind the superior mesenteric artery and inferior to the transverse segment of duodenum with or without rotational anomaly. The superior mesenteric artery and right colic vein are located at the anteromedial border of encapsulated small bowel loop which is a landmark for the right paraduodenal hernia [2].

The literature on internal hernia [3–5] published during last decade emphasizes that a hypothesis of internal hernia should be considered for patient with signs and symptoms of intestinal obstruction, particularly in absence of inflammatory intestinal disease, external hernia or previous laparotomy. There is extreme difficulty in making diagnosis of internal hernia preoperatively whether incarcerated or strangulated [6]. The overall management of acute intestinal obstruction require appropriate initial resuscitation and naso-gastric decompression, followed by immediately laparotomy. A median laparotomy incision, followed by upper or lower extension when needed is usually adequate for accessing the unpredictable site of obstruction and for any procedure required.

A finding of herniation through an intraperitoneal orifice makes a diagnosis of internal hernia. Next a careful examination of abdominal cavity is done to identify other structures involved. The surgical management of internal hernia includes reduction of herniated structures, resection of ischaemic intestinal segments and closure of hernial orifice [5]. Widening of the orifice has the risk of vascular lesions which can be avoided through knowledge of anatomy of peritoneal fossa and the regional vessels. Mild ischaemia is reverted back a few minutes after the loop is released. In the presence of necrosis, perforation or irreversible ischaemia intestinal resection is performed [5]. Closure of hernial orifice is generally indicated for prevention of recurrence of hernia through abnormal orifice.

In conclusion when a case of acute intestinal obstruction is reported after ruling out the known causes of obstruction a hypothesis of internal hernia can be made. The task on exploration is to confirm the provisional diagnosis of internal hernia. The policy of a surgeon is to have a suspicion of internal hernia reducing the risk of intestinal ischaemia, necrosis and perforation thus decreasing the postoperative morbidity and mortality [7].

Fig. 1 Photograph showing the opening of waldayers fossa

Fig. 2 Photograph showing the obstructed loop of small bowel

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