

# Strangulated Internal Hernias Presenting as Acute Abdomen - A Case Series

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**Abstract:** *Hernia is an abnormal protrusion of an organ or tissue through a defect in its surrounding walls. It can be divided into internal, external and diaphragmatic hernias. Most of them can be asymptomatic. If they become symptomatic they can present with features of intestinal obstruction, incarceration or strangulation. In this case series we compare the incidence of these rare presentations of hernias with world literature and to warn surgeons not to cut the obstructing band in cases of internal hernias. In this case series, we review the clinical details of 6 rare presentations of hernia, who presented with various types of hernias to JSS Hospital Mysore over a period of 3 years(2014-2016). Of these 6 cases there were 4 left paraduodenal hernias, 1 right paraduodenal hernia and 1 foramen of Winslow hernia. All of them presented as acute abdomen in the emergency department. Emergency laparotomy was done in all the cases which prevented complications of bowel gangrene.*

**Keywords:** internal Hernias, Acute abdomen, emergency, obstructing band

## 1. Case Series

**Case 1:** A 40yrs patient came with complaints of pain abdomen and multiple episodes of bilious vomiting since one day. Per abdomen Examination revealed Abdomen to be grossly distended, guarding present, rigidity present. Bowel sounds were absent. Per rectal examination revealed rectum to be empty and collapsed. Erect X ray abdomen showed dilated small bowel and ascending colon with no air under diaphragm. CT abdomen showed features suggestive of small bowel obstruction secondary to mid gut volvulus with early bowel ischaemic changes suggestive of mesenteric ischaemia. He was posted for emergency exploratory laparotomy. Intraoperatively, dilated gangrenous bowel loops extending from distal 1/3rd of jejunum till hepatic flexure of colon were seen herniating into the left paraduodenal space through fossa of Landzert (Figure 1). Resection of gangrenous bowel segments and jejuno transverse colon anastomosis was done. The defect between the inferior mesenteric vein and posterior abdominal wall was closed with continuous absorbable suture and the peritoneal sac was excised and plicated.

**Case 2:** A 19 year old male presented with features of intestinal obstruction. He was dehydrated and tachycardia was present. Abdomen was distended with diffuse tenderness and guarding. X ray abdomen showed multiple air fluid levels and dilated bowel loops (Figure 2). He was posted for emergency exploratory laparotomy. Intraoperatively, Small bowel loops were seen herniating into the retroperitoneal space behind the third part of duodenum, malrotation of gut was seen with caecum and appendix lying in the midline. There was a gangrenous bowel extending from proximal jejunum to distal ileum with a constriction band seen at the neck of the sac (Figure 3). Stricture segment was excised along with gangrenous segment of bowel and jejuno-ileal anastomosis done, appendectomy was done. The defect between the inferior

mesenteric vein and posterior abdominal wall was closed with continuous absorbable suture and the peritoneal sac was excised and plicated.

**Case 3:** A 32 year old male presented with features of intestinal obstruction. There was history of similar complaints previously. Patient was dehydrated and tachycardia was present. Abdomen was distended with diffuse tenderness and guarding. X ray abdomen showed multiple air fluid levels and dilated bowel loops (Figure 4). He was posted for emergency exploratory laparotomy. Intraoperatively, ileum was found herniating through the left paraduodenal fossa with constricting band formed by inferior mesenteric vein and the proximal small bowel was found dilated (Figure 5). Contents of hernia were reduced and the inferior mesenteric vein was preserved. Defect was closed with free peritoneum to lateral border of duodeno-jejunal flexure, retroperitonealising the inferior mesenteric vein.

**Case 4:** A 65 year old male presented with features of intestinal obstruction, he was febrile and dehydrated, tachycardia was present. Abdomen was distended, with diffuse tenderness, guarding and rebound tenderness. X ray abdomen showed multiple air fluid levels and dilated small bowel loops (Figure 6). He was posted for emergency exploratory laparotomy. Intraoperatively, ileum was found herniated in the left paraduodenal fossa with 50 cm of ileum found gangrenous within it and proximal segment dilated, the constriction band was formed by inferior mesenteric vein (Figure 7). The contents were reduced, gangrenous bowel was resected and an end to end ileo-ileal anastomosis was done in two layers. The defect was closed with peritoneum to the DJ flexure after preserving the inferior mesenteric vein.

**Case 5:** A 30 years patient presented to our casualty with features of intestinal obstruction. He was febrile, dehydrated

Volume 6 Issue 3, March 2017

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and tachycardia was present. Abdomen was distended with rebound tenderness. X-ray abdomen showed gas containing intestinal loops high in abdomen and medial & posterior to stomach associated with SBO. CT showed air fluid collection in the lesser sac with a beak directed toward the foramen of Winslow, bowel loops in the high subhepatic space, presence of mesentery between IVC & PV, absence of ascending colon in Rt. Gutter. Patient was taken for emergency laparotomy. Intraoperatively, an internal herniation of the caecum and the entire ascending colon through the foramen of Winslow was seen (Figure 8). After hernia reduction, multiple patchy areas of caecal necrosis were observed. A formal right hemi-colectomy was therefore performed.

**Case 6:** A 60 year old male patient presented with history of abdominal distension, constipation & vomiting of 7-8 episodes of 3 days duration. Vomitus was bilious in nature. Vital signs were normal. There was uniform distension of abdomen with generalized tenderness & guarding with absent bowel sounds. Naso-gastric aspiration showed 600ml of bile stained fluid. Erect abdominal X-ray showed multiple air fluid levels in distended small bowel loops. USG abdomen showed prominent bowel loops with sluggish peristalsis with minimal ascites. Patient was taken up for emergency laparotomy. Intraoperatively, there was haemorrhagic peritoneal fluid with congested and distended loops of ileal coils leading to retroperitoneal region. There were collapsed coils emerging from infraduodenal area (Figure 9). The constricting lower border of hernia window was incised to reduce the herniated small bowel & an area of circumferential strangulated ileal loop identified. The congested bowel loops regained its pink colour after correction of partial mesentery twist.

## 2. Discussion

A hernia is a bulging of part of the contents of the abdominal cavity through a weakness in the abdominal wall [1]. Hernia can occur in all areas, when there is congenital or acquired defects in the walls of body cavities in a case of external hernia or inside the abdominal cavity in a case of internal hernia through which the bowel prolapses [2]. Hernias are common diseases of the abdomen with a global incidence of approximately 4%- 5% [3] and are the most common reason for surgery in patients more than 50 years of age [4]. Of these, inguinal hernias are the most common with prevalence of 75%, followed by femoral (15%), and umbilical (8%) [3]. The male: female ratio is as high as 8:1. In the case of femoral hernia; females are the more commonly affected [4]. Hernias have a wide range of presentation. Mostly they are asymptomatic or may present with non-specific symptoms. But in some cases, the patients can have pain or nausea and, in some cases they can develop acute complications (incarceration, obstruction, volvulus & strangulation) that need prompt diagnosis and treatment [4]. Diagnosis is almost always clinical, but can be difficult in patients with obesity, pain or in rare presentations of hernias; where preoperative imaging may help in the diagnosis. Sometimes it can be an accidental finding intra operatively.

In 1857, Treitz defined an internal hernia as a retroperitoneal protrusion of an abdominal organ through a peritoneal fold [5]. Internal hernia is a rare type of hernia in which the

abdominal content herniates through the defect in the peritoneal cavity, which is found either congenitally or is acquired. Congenitally they may be pre-existing anatomical structures like recesses, foramina, or fossa [2]. Internal hernias account for < 1% of all abdominal hernias worldwide. Most of these patients may have nonspecific symptoms, until they present to the casualty with features of intestinal obstruction, abdominal pain, or distension. They mostly present with features of intestinal obstruction, which account for 5.8% of all small bowel obstruction cases [2]. It is classified by Ghahremani into 6 groups [6]. They are: 1) Paraduodenal hernias (50-55%); 2) Hernias through foramen of Winslow (6-10%); 3) Transmesenteric hernias (8-10%); 4) Pericaecal hernias (10-15%); 5) Intersigmoid hernias (4-8%); 6) Paravesical hernias (<4%). Paraduodenal hernias are mainly congenital, due to malrotation of the small bowel and entrapment of the small intestine beneath the mesocolon [7-9]. Two types are seen, left and right. Of these, left paraduodenal hernia is more common. This occurs through the Landzerts fossa [2,9]. Preoperative diagnosis by radiography, oral contrast study or CECT abdomen shows encapsulated bowel loops, at the duodeno-jejunal junction between the stomach and pancreas to the left of the ligament of Treitz in a case of left paraduodenal hernia with or without features of obstruction. The free edge of the defect in the right and left paraduodenal fossa are formed by colonic vessels and usually these structures form the obstructing band. So in these cases we need to be cautious in cutting the obstructing band. Internal herniation through the foramen of Winslow accounts for 6-10% of the internal hernias. The predisposing factors are larger than a normal opening at the foramen of Winslow and, also redundant small bowel with large mesentery [10]. Transmesenteric variety of internal hernia accounts for 8-10%, and its incidence is seen to be increasing. It is mainly acquired, occurring due to herniation of bowel loops through defects in the mesentery, following previous surgeries. Other rare varieties are pericaecal, intersigmoid, and paravesical hernias [2]. Even though the treatment for obstructed hernia is release of the obstructing band and reducing the contents, it is not normally done in case of internal hernias as the obstructing band could be major vessels. Here the dilated loops are decompressed and reduced, and the defect is closed either by retroperitonealising the fossa or by approximating the peritoneal bands [10-12].

## 3. Conclusion

Though internal hernias are rare, in a previously non operated abdomen presenting as intestinal obstruction, especially when there is a history of similar episode subsiding by itself, we should have a differential diagnosis of internal hernia and we should always be cautious of cutting the obstructing band in internal hernias as it may hamper important vascular supplies. In a case of internal hernia; early intervention prevails better survival.

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