



## INTERNAL HERNIA – CONGENITAL DEFECT AT THE ROOT OF SMALL BOWEL MESENTERY

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**ABSTRACT** Congenital internal hernia is a rare cause of bowel obstruction in adults and often presents with complications. A high clinical suspicion is needed, occasionally aided by appropriate radiological imaging, should lead to early surgical intervention and thus reduce morbidity and mortality. We describe a case of a 17-year-old young male who presented with upper abdominal pain and nonspecific abdominal signs. On exploratory laparotomy, he was found to have a large mesenteric defect at root with herniating ileum and ascending colon to the left side through defect. The mesenteric defect was repaired. The patient made an uneventful recovery.

**KEYWORDS :** Internal hernias, mesenteric defect, Intestinal obstruction

Internal hernias are a rare cause of small bowel obstruction.[1] Transmesenteric hernia is a type of internal hernia.[2] These mesenteric defects can be congenital or acquired. Patients can present with intestinal obstruction at any age. Most of the documented cases of congenital mesenteric defects as a cause of internal hernias are described in the pediatric population. We present a case of a 17-year-old young male with recurrent abdominal pain since 2 years and a mesenteric defect involving almost all root of small bowel mesentery. With superior mesenteric artery passing like an arch above the defect. (figure 4)

### CASE REPORT -

An otherwise healthy 17-year-old young male presented with severe upper abdominal pain, multiple episodes of vomiting and absolute constipation for the previous 12 - 24 hours. The pain was acute in onset, severe and continuous. It was initially located in the epigastrium and abdominal distension gradually progressed with time. The pain was associated with multiple episodes of bilious vomitings. He had no other comorbid conditions and had not undergone any operations in the past.

On examination, he was wincing in pain with a pulse of 110/minute, blood pressure of 110/70 mm Hg, temperature of 37°C and respiratory rate of 23 cycles / minute. He was dehydrated. Abdominal examination revealed diffuse abdominal tenderness and voluntary guarding in the right lower quadrant. Bowel sounds were sluggish. Hernial orifices are normal. Per rectal examination is normal. Breath sounds in both lungs were equal and vesicular. Results of laboratory investigations were normal except for a borderline elevated white blood cell count [figure 1]. X ray erect abdomen shows dilated small bowel loops (figure 2). Computed tomography showed features of bowel dilatation with obstruction with minimal free fluid collapsed colon which require surgical intervention. [Figure 3].

After initial resuscitation, the abdomen was explored through a midline incision. Dilated small bowels are noticed with minimal free fluid. The peritoneal cavity explored from fore gut, where we noticed the proximal ascending colon and two thirds of small intestine had herniated through a 10 – 12cm defect at the root of small bowel mesentery extending from duodeno-jejunal junction to 3 – 4cm proximal to ileocecal junction (figure 4,5). Bowels are healthy and pink. Pulsations of mesenteric vessels were intact. The arcades in the mesentery were intact running in close proximity to the mesenteric edge of the bowel. With warm pads and 100% oxygen bowel content were milked beyond IC junction. Remaining parts are explored, all seems to be normal. Defect is closed with absorbable sutures (figure 6)

### DISCUSSION –

In about 0.2% to 0.9% of cases of small bowel obstruction, the obstruction is due to internal herniation. Herniation can be congenital or acquired. Common sites of internal hernias are paraduodenal (50%), supra- and/ or peri-vesical, intersigmoid, foramen of Winslow,

omentum, postoperative mesenteric defects and congenital mesenteric defects.[3,4]

Mesenteric defects are an established cause of internal herniation in non operated abdomens and provide a potential site for intestinal incarceration or strangulation. Congenital mesenteric defects most often occur in the small bowel mesentery and less commonly in the colonic mesentery. The vast majority of these cases have been reported in infants or children, often with an associated intra-abdominal anomaly. Murphy found that of the 11 infants presenting with herniation through a mesenteric defect of the small intestine, 10 had an associated anomaly, the most common being intestinal atresia.[5] In adults, defects are most commonly acquired as a result of either blunt abdominal trauma or surgical manipulation of the bowel and mesentery. However, in the case we are reporting, the mesenteric defect was congenital and not associated with an intestinal anomaly.

The most common location of mesenteric defects is in the region of the small bowel (70% of cases), with 53% of these being in the ileocecal area of the mesentery.[6] These defects are typically small, although there are rare reports of large defects, as seen in our patient.[2]

Mesenteric defects present with a spectrum of clinical features — from being asymptomatic to being a cause of unexpected death. A high index of suspicion for congenital mesenteric defects is warranted in patients who present with features of intestinal obstruction in the absence of obvious external hernia or previous abdominal surgery. Operative management consists of timely laparotomy, reduction of hernia, resection/ anastomosis of devitalized bowel and closure of the defect.[7] The hernia ring may require manual dilatation or enlargement to assist in reduction of the hernia. The mesenteric defect or rent should always be closed. A defect near the root of mesentery may pose a challenge to closure due to limited exposure.

### CONCLUSION –

Severe unexplained abdominal pain in adults can be due to transmesenteric hernia. Diagnosis requires high index of suspicion, urgent surgical exploration and correction of the mesenteric defect. The innovation described is suggested for the management of patients with large mesenteric defects.

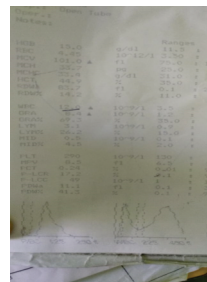


Figure 1 – complete blood picture



Figure 2 – x ray erect abdomen with dilated small bowel loops



Figure 3 – CT abdomen showing dilated small bowel with air fluid levels

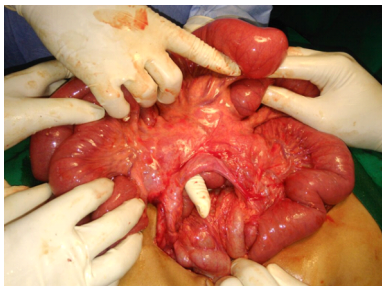


Figure 4 – showing defect in the root of mesentery extending from DJ to 3 - 4 cm proximal to IC junction and the superior artery is passing just above the defect (above gloved finger)



Figure 5 – showing small bowel and ascending colon herniating through defect. (gloved finger passed from right side to left through defect)



Figure 6 – defect closed with 2-0 vicryl round body in interruption with care not to injure superior mesenteric artery

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