

## Transmesenteric hernia in a peripartum patient: An unusual diagnosis

Gopala Krishnan Ravi<sup>1</sup>, A K Ajith Kumar<sup>2</sup>, Sunil Karanth<sup>2</sup>, Nagaraj Palankar<sup>3</sup>, Shilpa Ramachandra<sup>4</sup>

From <sup>1</sup>Specialist, <sup>2</sup>Consultant, Department of Critical Care Medicine, <sup>3</sup>Consultant, Department of Surgical Gastroenterology, <sup>4</sup>Consultant, Department of Radiodiagnosis, Manipal Hospital, Bengaluru, Karnataka, India

**Correspondence to:** Dr. Gopala Krishnan Ravi, Department of Critical Care Medicine, Manipal Hospital, No. 11, Ibrahim Sahib Street, 2<sup>nd</sup> Cross, Bengaluru - 560 001, Karnataka, India. E-mail: gkrccm@gmail.com

Received - 08 January 2020

Initial Review - 24 January 2020

Accepted - 14 February 2020

### ABSTRACT

Congenital transmesenteric hernia is a very rare cause of intestinal obstruction in adulthood. We report a patient who came to the emergency with persistent abdominal pain post-emergency cesarean section and subsequently diagnosed to have acute pancreatitis based on computed tomography findings and elevated pancreatic enzymes. The pain was disproportionate to the diagnosis of pancreatitis and her condition rapidly got worsened requiring multiorgan support. Reimaging revealed obstructed transmesenteric hernia. The patient required immediate surgical intervention. A high index of the suspicion of internal hernia as one of the differential diagnoses of any atypical acute abdomen and early intervention could be lifesaving.

**Key words:** *Adult intestinal obstruction, Internal hernia, Pancreatitis, Peripartum acute abdomen, Transmesenteric hernia*

**I**nternal hernia is a rare cause of intestinal obstruction in adults. Congenital transmesenteric hernia is a type of internal hernia where the bowel loops are strangulated after they protrude through the defects in the mesentery. They constitute 5–10% of internal hernias [1]. They most commonly present in neonates and children. Very few cases of transmesenteric hernias have been reported in adults in the available literature [2].

We report a rare case of obstructed transmesenteric hernia in a peripartum patient. Timely diagnosis, a high index of suspicion, a multidisciplinary approach, and early intervention are important in this life-threatening condition.

### CASE REPORT

A 28-year-old female, primigravida with twin pregnancy, had complained of sudden abdominal pain and vomiting at 32 weeks of gestation. She underwent a lower section cesarean section the next day due to fetal distress. Given persisting disproportionate abdominal pain, a contrast-enhanced computed tomography (CECT) abdomen was done, which showed evidence of acute pancreatitis (CT severity index is 8/10), also supported by elevated amylase and lipase levels. She was shifted to our center due to persistent abdominal pain.

Over the next 12 h, her general condition rapidly deteriorated requiring mechanical ventilation and vasopressor support. The repeat CECT abdomen at our center (almost 10 days after diagnosis of pancreatitis) was initially reported as unremarkable. A further review by the radiology team due to atypical acute pain with rapid clinical deterioration resulted in the suspicion of radiological features of small bowel obstruction, probably

secondary to a transmesenteric hernia in the left paramedian upper abdomen (Fig. 1).

Emergency laparotomy and resection of gangrenous small bowel were done (Fig. 2). The patient subsequently developed secondary bacterial peritonitis requiring appropriate therapies. She was taken up for reexploration after 4 days and inspection of continuity of resected bowel and hence underwent anastomosis of resected ends. Gradual improvement was noted in her general condition and she was liberated from the ventilator in the coming days. She required long-term hospitalization due to secondary sepsis. After discharging to home in a stable condition, she had again presented to the surgical department with repeated episodes of abdominal pain which was attributed to recurrent pancreatitis.

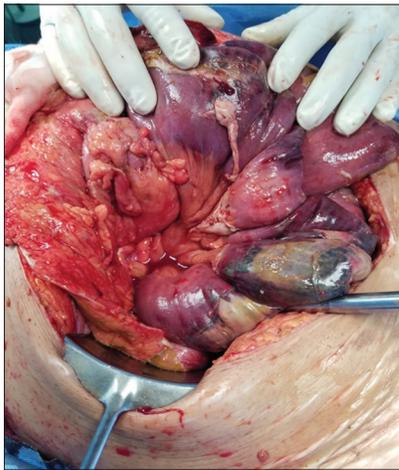
Further, investigation with magnetic resonance cholangiopancreatography revealed features of pancreatic divisum. She underwent endoscopic retrograde cholangiopancreatography, pancreatic sphincterotomy, pancreatic duct stricture dilatation, and stenting. Post-procedure, she improved symptomatically and discharged. On follow-up after 4 weeks, she remained asymptomatic and resumed her activities of daily living.

### DISCUSSION

Internal hernias are protrusions of a viscus through a foramen (congenital or acquired) or retroperitoneal fossa within the abdominal cavity. Majority of the internal hernias are paraduodenal (53%) [3]. Other types of internal hernia are foramen of Winslow (8%), pericecal (13%), intersigmoid (6%), transmesenteric (8%), transomental (1–4%), and retroanastomotic, supramesic, and pelvic (6%) [4].



**Figure 1:** Contrast-enhanced computed tomography scan of the abdomen shows a (a) sac-like cluster of ileal loops (thick arrows). Engorged, stretched, and crowded mesenteric vascular pedicle is seen at the defect in the mesentery (thin arrows); (b) coronal reconstruction demonstrating, dilated fluid-filled jejunal loops (thick arrows) protruding through the mesenteric defect (thin arrows)



**Figure 2:** Intraoperative findings showing gangrenous bowel protruding through mesenteric defect

Transmesenteric hernias are hernias through small bowel mesentery or colonic mesocolon constituting 4–8% of all internal hernias. In 1836, Rokitansky reported the first case of transmesenteric hernia in an autopsy, which was a herniated cecum through an orifice near ileocolic angle [4]. Defects often manifest in the pediatric populations and are usually located close to the ligament of Treitz proximally or close to the ileocecal valve distally [5,6]. In adults, most defects are due to surgically created opening, such as a Roux-en-Y procedure, inflammation, or trauma [7]. Of all internal hernias, transmesenteric hernias are most likely to involve and strangulate with reported rates as high as 30 and 40%, respectively [8].

Despite accounting for <6% of small bowel obstructions, internal hernias remain an important and often forgotten differential diagnosis of small bowel obstruction [9]. Clinical diagnosis remains challenging ranging from general symptoms of vague abdominal pain to intermittent obstructive symptoms if spontaneously reducible, progressing to acute obstruction if irreducible, and peritonism if strangulation ensues. CT scan is the mainstay of radiological investigation for an acute abdomen or unresolving small bowel obstruction [3]. Ghahremani suggested that the diagnosis of mesenteric hernia includes sacculization and crowding together of loops of small bowel contained in the

hernial sac and disturbing arrangement and abnormal location of the small intestine [4].

There are various theories for mesenteric defects. One such theory being developmental theory where two epithelial linings are opposed with a deficient intervening connective tissue or stroma, it leads to defect [10]. Treves described a similar condition in the mesentery of the ileocolic region [11]. The mechanism of the development of transmesenteric hernia is by gas trap theory, where a portion of bowel passes through the defect and by peristalsis and production of gas more bowel loops is drawn through the aperture, leading to incarceration [12].

There are interesting unique features in our patient who presented in the peripartum period. Internal hernia in a pregnant patient has been described post-laparoscopic Roux-en-Y gastric bypass [13]. However, our patient did not have any previous history of surgery or trauma. The pancreatitis was only 10 days duration, which cannot explain the formation of a mesenteric defect resulting in herniation. The presentation was completely confounded by the underlying diagnosis of acute severe pancreatitis. The persistence of symptoms and rapid worsening made us consider other differential diagnoses, though the initial CT scan at our hospital was reported as within normal limits. There are only a few case reports of congenital transmesenteric hernia in adults [2]. There are no reports of congenital transmesenteric hernia in a peripartum patient. Hence, a high index of suspicion of internal hernia in all cases of atypical abdominal pain along with prompt surgical intervention can save many more lives in such rare presentation.

## CONCLUSION

Congenital transmesenteric hernia is a rare type of internal hernia with the majority presenting in the pediatric age group. We present a rare case of transmesenteric herniation resulting in small bowel obstruction and ischemia in an adult in the postpartum period. Awareness of this condition, a high index of suspicion in all cases of atypical cases of acute abdomen, and rapid interpretation by experienced radiologists can help prevent mortality by timely intervention.

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*Funding: None; Conflicts of Interest: None Stated.*

**How to cite this article:** Ravi GK, Kumar AKA, Karanth S, Palankar N, Ramachandra S. Transmesenteric hernia in a peripartum patient: An unusual diagnosis. *Indian J Case Reports*. 2020;6(2):84-86.

<https://doi.org/10.32677/IJCR.2020.v06.i02.014>