

Spontaneous transmesenteric hernia: a rare cause of small bowel obstruction in an adult

Poras Chaudhary, Meenakshi Rao, Alok Kumar, Sachin Khandelwal, Nikhil Gupta, Moninder P. Arora

Lady Hardinge Medical College and associated Dr Ram Manohar Lohia Hospital, New Delhi, India

Abstract

The authors report a case of spontaneous transmesenteric hernia with strangulation in an adult. Transmesenteric hernia (TMH) is a rare cause of small bowel obstruction and is seldom diagnosed preoperatively, and most TMHs in adults are related to predisposing factors, such as previous surgery, abdominal trauma, and peritonitis. TMH are more likely to develop volvulus and strangulation or ischemia. A brief review of etiology, clinical features, diagnosis, and treatment is discussed.

Introduction

An internal hernia is defined as the herniation of viscera through an anatomic or pathologic opening in the confined of the peritoneal cavity. Transmesenteric hernia (TMH) is a form of internal hernia through a congenital or acquired defect in the mesentery. A 28-year-old female patient presented with features suggestive of small bowel obstruction with no previous history of surgery. On emergency exploratory laparotomy, TMH with strangulation was found, and resection and primary anastomosis was performed.

Case Report

A 28-year-old female presented to emergency department with complaints of generalized abdominal pain, non-passage of feces and flatus, and multiple episodes of vomiting of 4 days duration. There was no history of surgery and no comorbidities. On examination, there was tachycardia, hypotension, and signs of dehydration. Abdomen examination revealed generalized distension, diffuse tenderness, guarding and absent bowel sounds. Hematological and biochemical investigations revealed leukocytosis with neutrophilia, raised blood urea and serum creatinine. X-ray chest and abdomen showed no free gas under diaphragm, there

were multiple air fluid levels, and dilated small bowel loops. Ultrasonography of abdomen showed dilated small bowel loops with moderate amount of interbowel fluid. As there were signs of septic shock, and strangulation, and renal function tests were deranged, contrast enhanced computed tomography (CECT) was not performed. With the diagnosis of small bowel obstruction and a possibility of strangulation, after nasogastric decompression, aggressive preoperative fluid replacement, and correction of electrolyte disturbances, emergency exploratory laparotomy was done. On exploration, small bowel loops were dilated, and a long segment of small bowel were infarcted. The mid, distal jejunum and proximal ileal loops were found to pass through a defect in the proximal jejunal mesentery (Figure 1) with compression of vascularization of herniated bowel loops (Figure 2). Rest of the small bowel, colon and stomach were normal. After reduction of herniated bowel loops, resection of the gangrenous loops with end to end anastomosis between proximal jejunum and mid ileum was performed and mesenteric defect was closed properly. Post-operative period was uneventful and patient was discharged on postoperative day 8.

Discussion

A transmesenteric hernia is an intraperitoneal hernia that may be either congenital or acquired. TMH was first reported by Rokitsky in 1836 as an autopsy finding in which the caecum alone herniated through a hole near the ileocaecal junction. TMH accounts for nearly 5-10%¹ of all cases of congenital hernia and occurs more commonly in pediatric age group. In contrast, most TMHs in adults are related to predisposing factors, such as previous surgery, abdominal trauma, and peritonitis, or an iatrogenically created defect in mesentery. Most internal hernias occur postoperatively, resulting from incomplete closure of surgically created mesenteric defects. Majority of congenital internal hernias are paraduodenal (53%).² In a review by Janin *et al.*,³ nearly 70% of reported cases of TMHs occurred through defects in the small bowel mesentery.

Although internal hernias have an overall incidence of <1%,⁴ they constitute up to 5.8% of all small bowel obstructions, which if left untreated, have been reported to have an overall mortality exceeding 50% if strangulation is present. Congenital TMHs constitute only 8% of internal hernias, making these a rare cause of intestinal obstruction.⁵

Patients with internal hernia may remain asymptomatic or may present with acute intestinal obstruction like this patient who presented in our institute. In case of congenital TMHs,

Correspondence: Poras Chaudhary, Lady Hardinge Medical College and associated Dr Ram Manohar Lohia Hospital, 189, Deoli Road, Khanpur New Delhi 110062, India.
Tel. +91.9891.4473.358.
E-mail: drporaschaudhary@yahoo.com

Key words: internal hernia, transmesenteric hernia.

Received for publication: 19 September 2012.

Revision received: 17 December 2012.

Accepted for publication: 7 January 2013.

This work is licensed under a Creative Commons Attribution NonCommercial 3.0 License (CC BY-NC 3.0).

©Copyright P. Chaudhary *et al.*, 2013

Licensee PAGEPress, Italy

Clinics and Practice 2013; 3:e6

doi:10.4081/cp.2013.e6

despite the congenital nature of the mesenteric defect, this phenomenon can present at any age.⁶ The clinical manifestations are similar to those of any other case of small bowel obstruction. Because most mesenteric defects are small and there is no limiting hernia sac, a large portion of the small bowel can herniated through a tight opening. The resulting pressure of the herniated bowel and its thickened mesentery compresses the vessels in the free margins of the mesenteric defect and results in early incarceration and strangulation of the loop forming the margin of the defect.

TMHs are more difficult to diagnose than other types of internal hernias. CT scan may show a cluster of small bowel loops, small bowel obstruction and central or posterior displacement of colon. On CT scan, signs of mesenteric ischaemia, like twisting of the mesenteric vessels (the whorl sign), and engorged blood vessels denote a delayed diagnosis.⁷ Laparotomy is mandated in all cases of TMHs given the high incidence of incarceration and strangulation. As these hernias are rare, discovery of an internal hernia at laparotomy may be confusing to an unsuspecting surgeon who is not familiar with this abnormality. Treatment depends on viability of bowel – if the herniated bowel loops are gangrenous, resection is mandatory with or without primary anastomosis. In our patient, as there was a long segment of gangrenous bowel loops, resection with primary anastomosis was performed.

In conclusion, majority of spontaneous TMHs are congenital and they may present at any age. Risk of developing a hernia in these mesenteric defects is not known. TMHs are more likely to develop potentially disastrous complications, so rapid and proper evaluation and immediate therapy is mandated in all cases of small bowel obstruction.



Figure 1. Jejunal and ileal loops through a defect in mesentery of jejunum.



Figure 2. A long segment of distal jejunum and ileum are infarcted.

References

1. Newson BD, Kukora JS. congenital and acquired internal hernias: unusual causes of small bowel obstruction. *Am J Surg* 1986;152:279-85.
2. Hirasaki S, Koide N, Shima Y. unusual variant of left paraduodenal hernia herniated into the mesocolic fossa leading to jejuna strangulation. *J Gastroenterol* 1998;33:734-8.
3. Janin Y, Stone AM, Wise L. Mesenteric hernia. *Surg Gynecol Obstet* 1980;150:747-54.
4. Dowd MD, Barnett TM, Lelli J. Case report: A three year old boy with acute onset abdominal pain. *Pediatr Emerg Care* 1993;9:174-8.
5. Akyildiz H, Artis T, Sozuer E, et al. Internal hernia: complex diagnostic and therapeutic problem. *Int J Surg* 2009;7:334-7.
6. Ghahremani GG. Internal abdominal hernia. *Surg Clin North Am* 1984;64:393-406.
7. Blachar A, Federle MP, Dodson SF. Internal hernia: clinical and imaging findings in 17 patients with emphasis on CT criteria. *Radiology* 2001;218:68-74.