

Strangulated congenital mesenteric hernia: a case report

Orhan Kalaycı, M.D., Ahmet Yazıcı, M.D., Mustafa Yandı, M.D., Serdar Topaloğlu, M.D.

Department of General Surgery, Karadeniz Technical University Faculty of Medicine, Trabzon

ABSTRACT

Congenital mesenteric defects are rare and often recognized only in surgery or autopsy. Preoperative diagnosis of an internal hernia is quite rare. A common symptom of trans-mesenteric intestinal herniation is intermittent postprandial pain. If there is strangulation of the mesenteric internal herniation, there is often vomiting and constipation. Signs and symptoms of a bowel obstruction in a patient without previous abdominal surgery or inguinal hernia as well as without history of intra-abdominal operation and infection suggest the possibility of a congenital mesenteric defect with internal herniation. Early diagnosis and surgical treatment are important to reduce morbidity and mortality. This study aimed to present the case of a 20-year-old female patient on whom preoperative diagnosis of internal trans-mesenteric internal hernia was made.

Keywords: Congenital abnormalities; hernia; intestinal obstruction.

INTRODUCTION

Diagnosing patients with mesenteric defects and intermittent intestinal herniation is difficult since vomiting and abdominal pain occur when a bowel loop herniates. Symptoms resolve when internal hernia spontaneously reduces.^[1,2] Size of the mesenteric defect will determine if there will be symptoms. The true incidence of congenital mesenteric defects is unknown congenital defects may occur in the avascular areas of colon mesentery (Figure 1). Very small and very large defects will be asymptomatic. Some patients with internal mesenteric defects will have intermittent but self-limited symptoms. In others, the diagnosis is made at surgery or [if treatment is delayed] at autopsy. Mesenteric herniation of some patients can be diagnosed pre-operatively.^[3] This study reported the case of a patient on whom preoperative diagnosis of congenital mesenteric herniation was made by CT.

CASE REPORT

A 20-year-old woman presented to the emergency depart-

ment with a history of abdominal pain, nausea and vomiting ongoing for 24 hours. Physical examination showed abdominal distension, epigastric tenderness with rebound tenderness and referred pain to the left lower quadrant. Rectal examination revealed currant jelly stool. Except for an ED visit for non-specific abdominal pain seven days prior to readmission, she had no history of abdominal pain or abdominal surgery.

Patient's laboratory data included an elevated CRP 9 mg/dL (<0.5), white blood cell count, 14.1×10^3 UL (4.8–10.8) initially and 18.5×10^3 UL on repeat examination. Patient's plain upright abdominal film showed a single air-fluid level in an otherwise gas free abdomen as a blurred view (Figure 2a). Computed tomography revealed dilated jejunum with a thickening 7 mm intestinal wall and an increase in adjacent adipose tissue, suggesting internal herniation to the radiologist (Figure 2b and c). Preoperative diagnosis was acute surgical abdomen secondary to internal herniation. At emergency laparotomy, there was a 4x4 cm defect in the mesentery. The entire small bowel, except for the last 40 cm of the ileum, had herniated through the defect. The bowel did not appear necrotic. Although it was reddened, it was not blue or black (Figure 3a, b). Reduction of the bowel was performed, the defect in the colonic mesentery was closed with 2.0 Vicryl, and the patient recovered uneventfully and was discharged home on the fifth postoperative day.

DISCUSSION

Herniation is defined as the movement of the intestines, tissues and organs to a different area from their normal anatomical location in the abdomen. If it occurs through a con-

Address for correspondence: Orhan Kalaycı, M.D.

Karadeniz Teknik Üniversitesi Tıp Fakültesi, Genel Cerrahi Anabilim Dalı, Trabzon, Turkey

Tel: +90 312 – 577 61 38 E-mail: drok61@hotmail.com

Quick Response Code



Ulus Travma Acil Cerrahi Derg
2015;21(5):410–413
doi: 10.5505/tjtes.2015.44957

Copyright 2015
TJTES

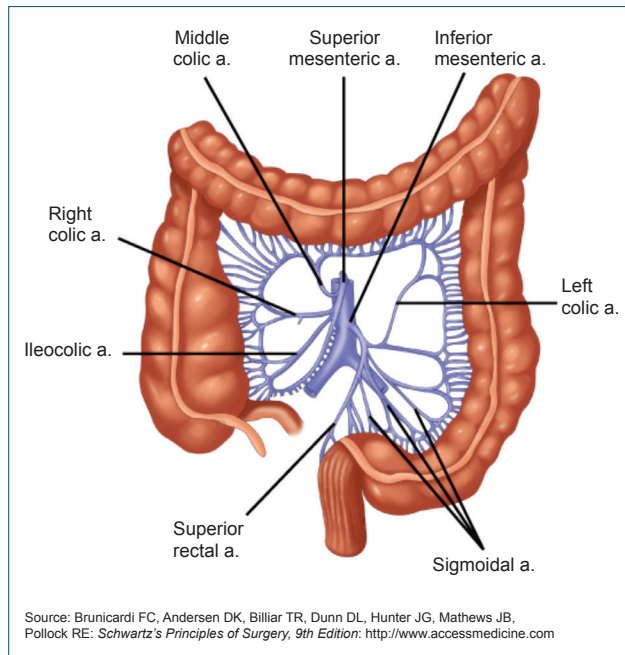


Figure 1. Congenital defects may occur in the avascular areas of colon mesentery.

genital defect of the colonic mesentery, then it is a congenital mesenteric internal hernia.

Congenital mesenteric defects occur through thin avascular areas of the mesentery. Such areas include the area of Treves, which is 15 cm proximal to the ileocecal valve and located between the superior mesenteric artery and the ileocolic artery. The mesentery of the transverse colon, between the left colic artery and the mid-colic artery is also a site of herniation, as is the mesentery of the sigmoid colon between the sigmoid arteries and the left colic artery. Congenital internal herniation (CHI) occurs when the bowel or other tissues pass through defects in these areas. Being rare, it is difficult to diagnose and can be fatal.^[5]

Mesenteric herniation was first reported in 1836 during an autopsy by Rokotanski. The incidence of mesenteric herniation is 0.5% in all autopsies and 0.5 to 6% in autopsies done in patients with intestinal obstruction.^[4] The true incidence of mesenteric defects is unknown as some are asymptomatic. Mesenteric herniation, as a cause of death, is at times discovered at autopsy.^[5] This case was remarkable because most cases of internal mesenteric hernia occur in childhood and this patient was a young adult. Most cases of CIH are diagnosed at laparotomy or autopsy. Most of the mesenteric hernias seen in adults occur after gastrectomy or Roux en Y anastomosis. These hernias are trans-mesenteric and retro-anastomotic.^[4] Preoperative diagnosis of CIH is difficult and requires collaboration between the surgeon and radiologist.

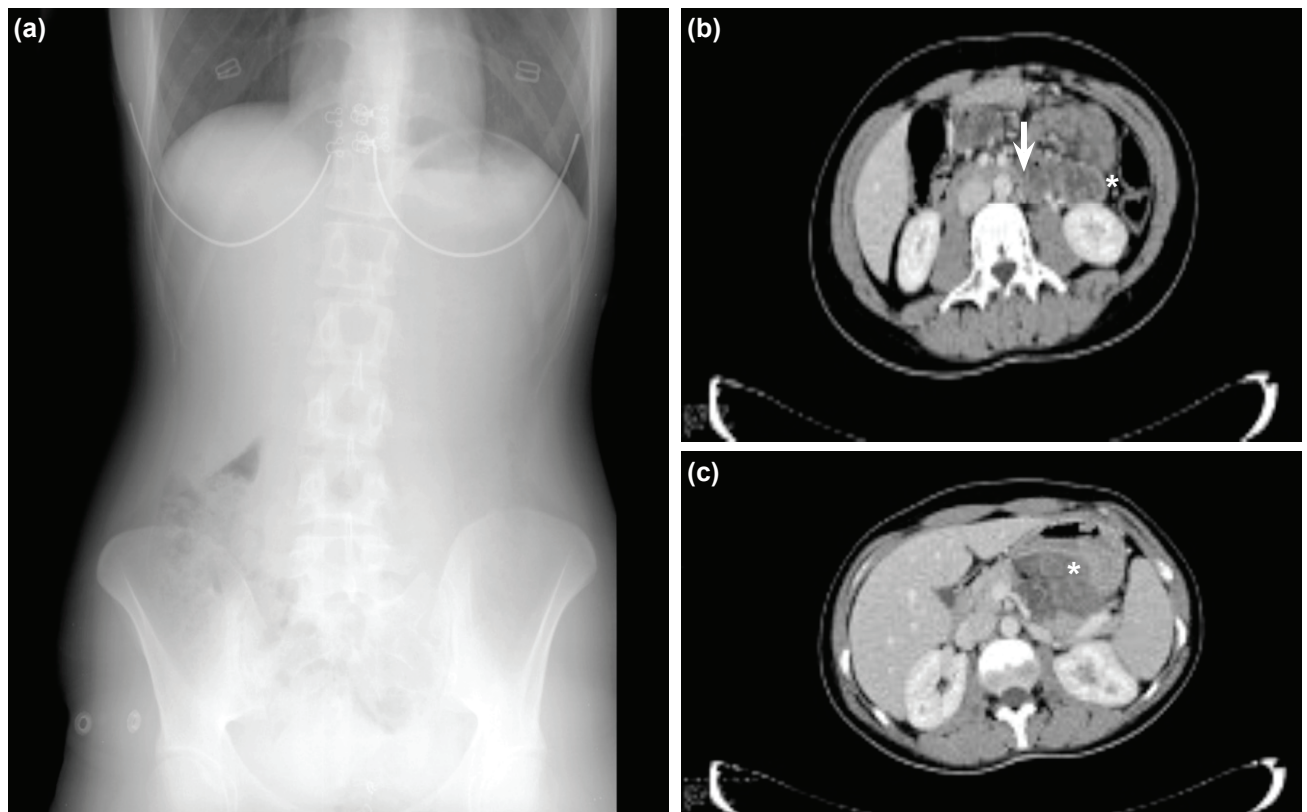


Figure 2. (a) The patient's abdomen radiograph was taken standing, localized air fluid level, no gas in the other part of the abdomen, as a blurred view. (b) Computed tomography of the patient; the thickest parts of the wall segments of (*) dilated jejunum is up to 7 mm and (↓) increased mesenteric adipose tissue adjacent defect, dilatation and pushing of the bowel suggested internal herniation. (c) Trans-mesenteric herniated small bowel in abdominal CT, "*" collected bowels as a bouquet suggested internal herniation.

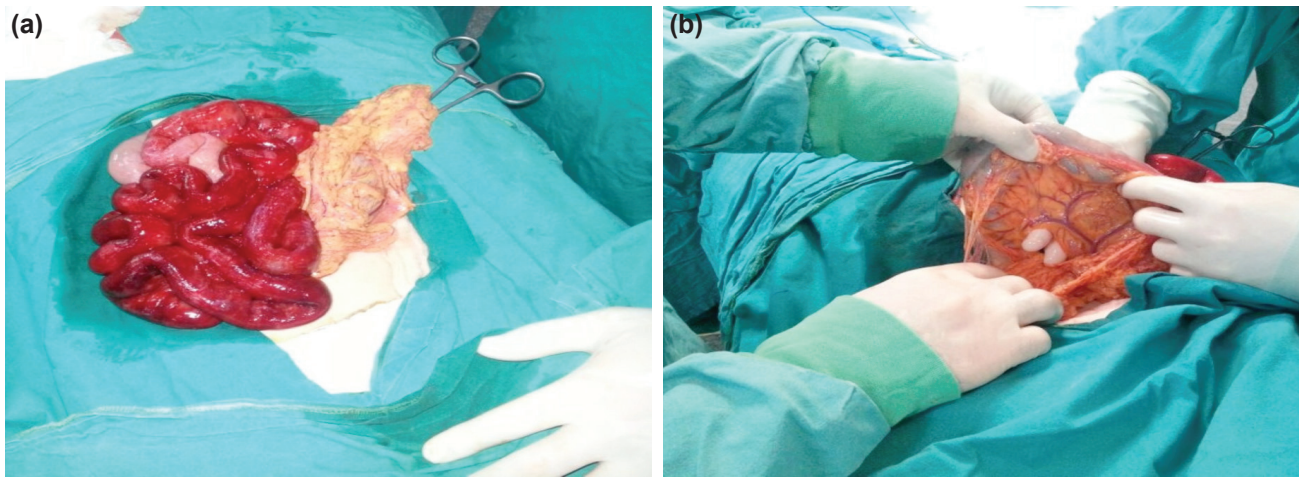


Figure 3. (a) Herniated and ischemic small bowels passed through congenital mesenteric hernia. (b) Congenital mesenteric defect after reduction of bowels.

The recognition of trans-mesenteric hernias by CT is more difficult than the recognition of other intra-abdominal hernias. Our patient had symptoms and signs of intestinal obstruction and a suspicious CT scan which allowed us to make the preoperative diagnosis of trans-mesenteric herniation and treat her surgically prior to intestinal gangrene and necrosis.

Diagnostic Initiatives

The main problem of these patients is intestinal obstruction. They have abdominal distension, constipation, hyperactive bowel sounds and air-fluid levels on plain abdominal radiography. Pathology can be recognized by radiological studies when the patient is symptomatic.^[6]

The ilial cut off sign of the superior mesenteric artery is an important angiographic finding in symptomatic patients. Plane abdominal films reveal acute intestinal obstruction in 50–60% of the patients. In our patient, there was a single air fluid level in the left, medial outer quadrant. There is no evidence in the literature of useful ultrasonographic findings.^[7]

Currently, CT radiography is frequently used to diagnose causes of abdominal pain. However, the correct diagnosis of mesenteric herniation is difficult. Pathognomonic CT findings include thickened mesentery and a bouquet of herniated loops of dilated bowel with air-fluid levels displacing colon and stomach. Ascites can also be found.

If diagnosis is missed and surgery delayed, bowel necrosis may occur. If bowel necrosis occurs, morbidity and mortality increase by 50%.^[8]

Congenital trans-mesenteric hernia is a rare cause of bowel obstruction. If a patient with signs and symptoms of a bowel obstruction has no history of surgery or previous intra-abdominal infections, congenital internal hernia should be considered. Early CT and surgery will decrease morbidity and mortality in this condition.

Acknowledgment

We thank to Robert Russel MD from USA for English redaction of this paper.

Conflict of interest: None declared.

REFERENCES

1. Barbara MK, Peter T'Z, David SK. Radiology of the Abdomen, Internal Hernia, Maingot's Abdominal operations Volume1, 10th Edition:104, 1997.
2. Duarte GG, Fontes B, Poggetti RS, Loreto MR, Motta P, Birolini D. Strangulated internal hernia through the lesser omentum with intestinal necrosis: a case report. Sao Paulo Med J 2002;120:84–6. [CrossRef](#)
3. Chan KT. Transmesenteric hernia. Singapore Med J 1963;3:34–7.
4. Vallumsetla R, Govind Rao N. Congenital transmesenteric internal hernia - A case report with literature review. Indian J Surg 2010;72:268–70.
5. Byard RW, Wick R. Congenital mesenteric defects and unexpected death-a rare finding at autopsy. Pediatr Dev Pathol 2008;11:245–8. [CrossRef](#)
6. 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. [CrossRef](#)
7. Wachsberg RH, Helinek TG, Merton DA. Internal abdominal hernia: diagnosis with ultrasonography. Can Assoc Radiol J 1994;45:223–4.
8. Hong SS, Kim AY, Kim PN, Lee MG, Ha HK. Current diagnostic role of CT in evaluating internal hernia. J Comput Assist Tomogr 2005;29:604–9. [CrossRef](#)

OLGU SUNUMU - ÖZET**Boğulmuş doğumsal mezenterik fitik: Olgu sunumu****Dr. Orhan Kalaycı, Dr. Ahmet Yazıcı, Dr. Mustafa Yandı, Dr. Serdar Topaloğlu**

Karadeniz Teknik Üniversitesi Tıp Fakültesi, Genel Cerrahi Anabilim Dalı, Trabzon

Doğumsal mezenter defektler oldukça nadir; bir kısmı ömür boyu fark edilemeyen bir kısmı ise ameliyat veya otopsi esnasında tanınabilen, ameliyat öncesi tanınma olasılığı çok düşük olan patolojilerdir. Genellikle gıda alımını takiben, zaman zaman ortaya çıkan karın ağrısı ve bağırsak tıkanıklığı bulguları veren, daha önce karın ameliyatı ve karın içi enfeksiyon geçirmemiş olgularda bu patolojinin akla gelmesi, erken tanı ve cerrahi girişim, morbidite ve mortalite oranlarını etkileyen en önemli unsurlardır. Bu yazıda 20 yaşında, ameliyat öncesi bilgisayarlı tomografi ile tanısı koyulabilmiş bir kadın olgu literatür bilgileri ışığında sunuldu.

Anahtar sözcükler: Bağırsak tıkanması; doğumsal anomaliler; fitik.

Ulus Travma Acil Cerrahi Derg 2015;21(5):410-413 doi: 10.5505/tjtes.2015.44957