Congenital Mesenteric Defect: A Rare Cause of Intestinal Obstruction: Case Report

Konjenital Mezenterik Defekt: İntestinal Obstrüksiyonun Nadir Bir Sebebi

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ABSTRACT Transmesenteric hernia is a rare form of internal herniation in which intestine herniated through a defect in the small bowel mesentery. It may be related with a primary defect that is congenital or a secondary orifice resulted from trauma or prior surgery. Here we present a 12 year old male patient underwent emergency surgery with the complaints of acute abdomen due to congenital transmesenteric hernia. We aimed to discuss the current management strategies in the light of the current literature. Intestinal obstruction due to transmesenteric herniation is a rare condition. Once the symptoms start physician should always keep in mind that ischemia and necrosis can rapidly develops and therefore a prompt surgical intervention is crucial.

Key Words: Ileus; abdominal pain; mesentery

ÖZET Transmezenterik herni, ince bağırsak mezenterindeki bir defektten ince bağırsakların fıtıklaşması şeklinde ortaya çıkan nadir bir oluşumdur. Konjenital bir defekte bağlı olarak primer şekilde ortaya çıkabileceği gibi, travmaya bağlı gelişen bir orifisten sekonder olarak da ortaya çıkabilir. Biz burada, akut karın bulgularıyla acil cerrahi girişim yapılan konjenital mezenterik hernili 12 yaşında erkek hastayı sunmaktayız. Transmezenterik herniasyon nedeniyle ortaya çıkan intestinal obstrüksiyon nadir bir olgudur. Semptomlar başladığında, klinisyen iskemi ve nekrozun hızla gelişebileceğini ve bu nedenle uygun cerrahi girişimin şart olduğunu daima akılda bulundurmalıdır.

Anahtar Kelimeler: İleus; karın ağrısı; mezenter

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Internal hernia results from herniation of abdominal organs through a defect in peritoneum or mesentery. It is a rare cause of intestinal obstruction. It can be secondary to trauma and prior surgery or it can be congenital.[1] Paraduodenal hernia with a frequency of 50% is the most frequent form of internal hernias.[2] On the other hand, herniation through mesenteric defect occurs only in 5-10% of the cases.[3] In 70% of the patients the mesentery of the small intestine; mainly the ileum; is involved.[4] Although most of the cases are asymptomatic; transmesenteric hernia is still responsible for the 0.6-5.8% cases with intestinal obstruction due to internal herniation.[5,6] In most extreme cases; obstruction may progress to strangulation and ischemia.[7] Plain abdominal radiography, small bowel series, abdominal computed tomography can be helpful in the diagnosis. Nevertheless, usually the diagnosis is mainly made intraoperatively. Time

is important because once intestinal infarction develops resection of a considerable length of bowel may be necessary. Therefore accurate diagnosis and rapid intervention is crucial.

Here we present a patient with a history of intermittent abdominal pain and ileus attacks who was diagnosed to have herniation and strangulation of small intestine through a mesenteric defect.

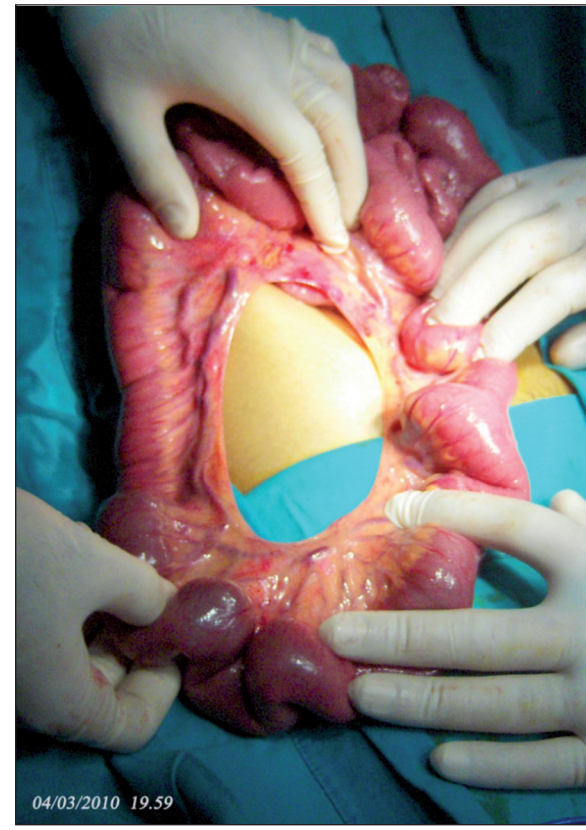
CASE REPORT

Twelve-year-old male patient was admitted to emergency room with the complaints of abdominal pain, nausea and vomiting. The patient had signs of acute abdomen and intestinal obstruction. The history revealed prior attacks of abdominal pain and vomiting that recover following supportive treatment. He suffered from these episodes 5-6 times a year. The plain abdominal film was consistent with small bowel obstruction. The abdominal ultrasonography revealed free intraabdominal fluid. Emergency operation was planned with the diagnosis of acute abdomen. Following laparotomy; the exploration revealed 5 x 10 cm defect in the ileal mesentery. Furthermore; small intestinal loops were herniated through the defect and seemed ischemic (Figure 1A and 1B). The existing ischemic discoloration in the intestine disappeared following reduction. The mesenteric defect was primarily closed. Postoperative course of the patient was uneventful. He was discharged on postoperative 5th day. Then there was no problem in the short term of follow up of 6 months.

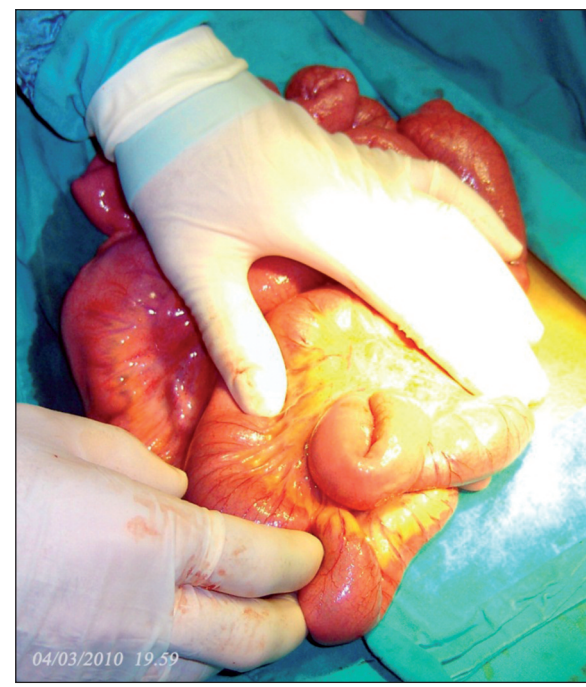
DISCUSSION

First transmesenteric internal herniation was reported in 1836 by Rokitansky. Since then it has been reported as rare cases from different centers.[3] Internal herniation can be through a natural orifice such as foramen Winslow etc. or can be through secondary orifices resulted from prior surgery or trauma. Malrotation or intraabdominal bands are congenital reasons of internal herniation.[1]

Paraduodenal hernia is the most frequent form of internal herniation. Seventy five percent is situated on the left. The symptomatology can be vague abdominal pain to acute abdomen due to



A



B

FIGURE 1: A Shows the defect in the small intestinal mesentery. **B** shows the herniated small intestinal segments.

strangulated herniation. CT or enteroclysis may aid the diagnosis.[8]

Transmesenteric herniation is responsible for 5-10% of internal hernias.[3] Absences of the hernia sac predispose the cases to massive small bowel involvement. Clinical presentation may range from obstruction to ischemia. Plain abdominal graphs usually show obstructive finding or closed loop obstruction.[2] Abdominal computed tomography can help in diagnosing signs of obstruction, volvulus or dilatation in mesenteric vasculature.[1] In our case; we didn't perform further diagnostic test because the patient presented with acute abdomen.

Thirty five per cent of the cases with transmesenteric hernia present during the childhood. Prenatal ischemia and the resultant developmental abnormality are believed to be responsible in the etiology. On the other hand; during adulthood trauma, infection, prior surgery (transplantation, Roux –NY anastomosis in gastric bypass etc.) are the most frequent causes of transmesenteric herniation.[9] Patients are usually admitted with acute symptoms in 75% of the cases. On the other hand; 22% of the patients have intermittent symptoms. If the defect is small vascular supply deteriorates very fast and ischemia supervenes. Usually the herniated segment may be involved however due to the compression of mesenteric vessels other intestinal segments may be come ischemic as well.[10] In our case; due to the huge size of the defect massive intestinal herniation was present and therefore the herniated segments were initially ischemic due to mass effect. If the defect is big then the symptoms may be vogue and the patients may suffer from intermittent abdominal pain and partial obstruction. In the present case the patient had been admitted the emergency department five to six times per year with abdominal colicky pain and vomiting. He had been conservatively treated until his final episode in which he had acute abdomen. Enteroclysis, CT, abdominal ultrasonography performed by an experienced radiologist during the episodes may be helpful.[1,11-13] Despite all the efforts; in most of the cases diagnosis is made intraoperatively. It can rarely be diagnose preoperatively. It's symptoms are usually intermittent and nonspecific.[14] In the present case; prior attacks of the patient was managed conservatively; furthermore no diagnostic imaging was performed prior to operation .We didn't need to perform further diagnosing tests for the patient had already acute abdomen during presentation.

In conclusion; intestinal obstruction due to transmesenteric herniation is a rare case. It should be suspected in patients presenting with intermittent abdominal pain and intestinal obstruction. Once the symptoms start physician should always keep in mind that ischemia and necrosis can rapidly develops and therefore a prompt surgical intervention is crucial.

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