

A left paraduodenal hernia causing bowel obstruction: a case report

Mohammad Mozaffar, Mohammad Hasani, Mahtab Fallah, Mohammad Reza Sobhiyeh, Farideh Adhami

Department of Surgery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

ABSTRACT

A 41-year old mentally retarded patient presented acutely with a 3 day history of vomiting and absolute constipation. Intestinal obstruction was diagnosed following an abdominal x ray. At laparotomy, a left paraduodenal hernia was present, without incarceration of small bowel. The herniated loops were reduced and the hernia orifice closed. The anatomy, treatment and importance of considering this uncommon diagnosis when examining a patient with acute small bowel obstruction are discussed.

Keywords: Paraduodenal hernia, intestinal obstruction, internal abdominal hernia.

(Please cite as: **Mozaffar M, Hasani M, Fallah M, Sobhiyeh MR, Adhami F. A Left Paraduodenal Hernia causing bowel obstruction: a case report. Gastroenterol Hepatol Bed Bench 2013;6(1):48-51.**)

Introduction

Paraduodenal hernias, also called congenital mesocolial hernias, are the most common type of intra-abdominal hernias accounting for half of reported cases. They are usually congenital in nature, developing as a result of small intestine becoming trapped beneath the mesentery of colon. This probably occurs due to abnormal embryologic rotation of midgut and variation in peritoneal fixation and vascular folds. Paraduodenal hernias occur more commonly on the left side than on the right (1).

Paraduodenal hernias are uncommon and account for less than 1% of all cases of small bowel obstruction. They are associated with a high lifetime risk of causing obstruction, and in cases that present with obstruction, the mortality rate is up to 20%, probably due to a delay in diagnosis. The diagnosis should be considered when

examining a patient with acute small bowel obstruction without a history of prior abdominal surgery. CT scan is the method of choice for diagnosing paraduodenal hernia of small bowel loops. If diagnosed, the herniated loops should be reduced and the hernia orifice either closed or widened (2).

In this article we report a 41-year old woman with obstruction symptoms due to left paraduodenal hernia.

Case Report

The patient was a 41 years old mental retarded patient who lived in a care and rehabilitation center for mentally disabled. The patient was brought to Shohada hospital with a 3 day history of absolute constipation. On discussion with the patient's carers, there was no history of recent abdominal pain, but the patient was noted to have suffered from anorexia and bilious vomiting prior to admission.

Received: 13 July 2012 *Accepted:* 18 November 2012
Reprint or Correspondence: Mahtab Fallah, MD.
Department of Surgery, Shahid Beheshti University of Medical Sciences, Tehran, Iran
E-mail: mahtab.fallah@gmail.com

She had no significant past medical and surgical history aside from congenital mental retardation complicated by epilepsy. Her only medication was Phenobarbital. On physical examination she was conscious with a pulse rate of 110, respiratory rate of 20, temperature of 37 degrees Celsius and blood pressure of 110/80 millimetres of mercury. Cardio-respiratory examination was unremarkable. The abdomen was symmetric distended without any obvious scars. Bowel sounds were hyperactive. The abdomen was soft and generalized tenderness was assumed as examination caused the patient to grimace. There was a soft feces in digital rectal exam. Laboratory investigations included normal cell blood count, biochemistry and urine analysis. The plain abdominal X-ray was consistent with intestinal obstruction (fig. 1).

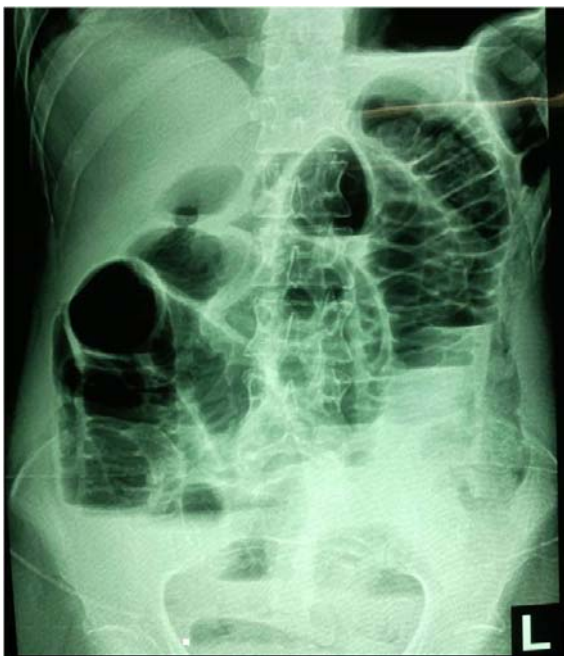


Figure 1. The plain abdominal X-ray. It was consistent with intestinal obstruction.

A laparotomy for bowel obstruction was performed and a left paraduodenal hernia with incarceration of small bowel loops was found. There was no evidence of bowel ischaemia (fig.

2). The hernia orifice was closed with non-absorbable sutures. The postoperative course was uncomplicated.



Figure 2. Left paraduodenal hernia with incarceration of small bowel loops. There was no evidence of gangrenous bowel loop.

Discussion

An internal hernia is the protrusion of a viscous through a normal or abnormal opening within the confines of the abdominal cavity. Internal hernias account for 0.2 to 0.9 per cent of all cases of intestinal obstruction. Paraduodenal hernias are relatively rare congenital malformations and account for 30 to 53 per cent of all internal hernias (3, 4). More than 50% of internal hernias reported in the literature have been paraduodenal.2 Seventy-five percent of paraduodenal hernias occur on the left, while 25% occur on the right (4).

The most likely mechanism for the development of left paraduodenal hernias is malrotation of the midgut during the early weeks of gestation: while rotating into the peritoneal

cavity, the mesentery fails to fuse with the parietal peritoneum creating a hernia orifice (2, 6, and 7).

The orifice of the internal hernia can be normal (Winslow's foramen) or abnormal (Paraduodenal, ileo-caecal etc.) or pathological (an orifice formed in a mesentery or omentum).

Left paraduodenal hernias originate at the fossa of Landzert, this fossa is just lateral to the fourth segment of the duodenum and behind the IMV and ascending left colic artery. Right para-duodenal hernias protrude into the ascending mesocolon, involving the fossa of Waldeyer, behind the superior mesenteric artery and inferior to the third portion of the duodenum. Paraduodenal hernias are more common in males (M: F ratio 3:1). The average age at diagnosis is 38.5 years with clinical presentation often due to chronic, intermittent, postprandial abdominal pain. An accurate incidence of paraduodenal hernias in infancy and childhood is unknown, but quite rare (5).

Presentation can be varied and range from a long story of abdominal pain (intermittent, crampy, related to eating/ body position), which is often mistaken for irritable bowel syndrome or psychosomatic disease, to acute bowel obstruction. It can also be an incidental finding in an asymptomatic patient. The use of imaging studies such as plain abdominal film or CT scan are methods of choice when making the diagnosis: sometimes dilated small bowel loops can be displayed on the plain abdominal film, CT scan can reveal a sac-like mass of small bowel loops suggestive for paraduodenal hernia (2). Radiographically, left paraduodenal hernias present as an ovoid conglomeration of jejunal loops in the left upper quadrant, often displacing the stomach superiorly and the transverse colon inferiorly. Right paraduodenal hernias are similarly ovoid but are located on the right, displacing the ascending colon anterolateral (5).

Despite these imaging techniques, the diagnosis of left paraduodenal hernias can be missed. This may be due to a complete reduction

of the hernia, either spontaneously or after changing the body position. Studies have revealed that when the diagnosis is made preoperatively, a laparoscopic approach is possible (2).

Treatment of left paraduodenal hernia requires surgery. The typical appearance during surgery is an "empty abdomen" with only the last segment of the ileum present in the abdominal cavity while other small bowel loops are entrapped in the hernia sac. The herniated small bowel loops should be reduced and the hernia orifice closed with non-absorbable sutures. An alternative surgical approach is to widen the hernia orifice to prevent future incarceration of bowel loops. Often, there is a close anatomical relationship between the inferior mesenteric vessels that bind the hernia anteriorly, and at the hernial orifice care should be taken not to injure these vessels (4).

Although relatively uncommon, left paraduodenal hernia should be included in the differential diagnosis of small bowel obstruction in patients who are relatively young, who have repetitive attacks, and who lack any history of previous abdominal surgery. The combination of a high index of suspicion, familiarity with this condition, and modern imaging technology make preoperative diagnosis easier today. Timely surgical intervention effectively relieves the patient's complaints and prevents further complications.

References

1. Dayananda L, sreekumar KP, moorthy S, prabhu NK. Para duodenal Hernias- A pictorial essay. *Ind J Radiol Imag* 2006; 16: 469-71.
2. Brehm V, Smithuis R, Doornebosch PG. A Left Paraduodenal Hernia causing acute bowel obstruction: a case report. *Acta Chir Belg* 2006;106: 436-37.
3. Nuño-Guzmán CM, Arróniz-Jáuregui J, Hernández-González C, Reyes-Macías F, Nava-Garibaldi R, Guerrero-Díaz F, et al. Right paraduodenal hernia in an adult patient: diagnostic approach and surgical

management. *Case Rep Gastroenterol* 2011; 5: 479–86.

4. Shetty P, Selvaraju K, Singh S. A left paraduodenal hernia causing recurrent small bowel obstruction : a case report. *Webmed Central gastrointestinal* 2010;1:WMC001308
5. Munir A, Saleem SM, Hussain S. Paraduodenal hernia - a case report. *J Pak Med Assoc* 2004;54:162-63.
6. Shoji T, Nishiyama R, Oba K, Azuma M. Left paraduodenal hernia successfully treated with laparoscopic surgery: a case report. *Case Rep Gastroenterol* 2007; 1: 71-76.
7. de Paula JF, Batista CA, Leite GF, Rodrigues AG. Left paraduodenal hernia. *Rev Col Bras Cir* 2011; 38:207-209.