A RARE CAUSE OF INTESTINAL OBSTRUCTIONS: LEFT PARADUODENAL HERNIA INTRODUCTION

Arslan K1*, Doğru O1, Köksal H1, Atay A1

1. Konya Education and Research Hospital, Turkey

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Correspondence: Dr. Kemal Arslan. Konya Education and Research Hospital, Turkey
Email: arslanka74@hotmail.com


ABSTRACT

Internal hernias are uncommon causes of small bowel obstructions. Paraduodenal hernias are the most common causes of internal hernias. Because of the high mortality rate, early and accurate diagnosis is essential. Because of no specific abdominal finding in physical examination, it has been diagnosed difficultly. Abdominal front wall herniation or malignancy should be considered first in patients with intestinal obstruction and previous surgical operations. Intestinal congestion may be caused by internal herniation in patients without such symptoms. Accompanied by a video presentation a case of intestinal obstruction caused by paraduodenal hernia is presented here. Correct preoperative diagnosis of left paraduodenal hernia had been difficult due to non-specific clinical presentations, but the advent of modern imaging technology makes early and correct diagnosis possible. Due to the risk of obstruction and strangulation, surgical treatment is indicated; so that, timely intervention increases the likelihood of a favorable outcome.

Key words: Idiopathic Retroperitoneal Hematoma, emergent surgery, abdominal pain

INTRODUCTION

Internal hernias are uncommon causes of small bowel obstructions. Paraduodenal hernia is the most common internal hernia, accounting for 53% of cases1 - 2. Paraduodenal hernias result from abnormal rotation of the midgut during embryonic development and can be divided into two subtypes, left and right, according to their distinct pathogenesis and the resultant anatomical derangement3. Left sided hernias are three times rare than right-sided paraduodenal hernia4. The preoperative diagnosis of a paraduodenal hernia is difficult5. Once a paraduodenal hernia is identified, operative treatment is inevitable because there is 50 % lifetime risk of obstruction6. A case of intestinal obstruction caused by paraduodenal hernia is presented here.
CASE REPORT

A 49-year-old man was admitted to emergency service with a history of recurrent and intermittent left quadrant pain associated with nausea and vomiting for 1 week. He reported that he had experienced similar episodes several times in the last 1 month, but the pain resolved spontaneously each time. His past medical history was significant for type 2 diabetes mellitus and included oral antidiabetics. He had no history of previous abdominal surgery. At physical examination, the patient was dehydrated, his body temperature was 37.7°C, blood pressure was 110/70 mmHg and pulse rate was 120/minute. Bowel sounds were hyperactive. The abdomen was moderately distended with diffuse tenderness and guarding and rebound on the left side. The white blood cell count was 16,890/ mm³. There were no specific signs in the patient’s pre-operative plain x-rays. The abdominal ultrasonography did not demonstrate any abnormality so computed tomography was performed. It revealed jejunum loops forming an encapsulated circumscribed cluster and dilatation in jejunum segments was observed (Figure 1).

The patient underwent emergent laparotomy because of acute abdomen signs. Intraoperatively an incarcerated left paraduodenal hernia was found. The proximal jejunum (20 to 200 cm from the ligament of treitz) was found to be entrapped by the hernia sac which was containing serous- hemorrhagic fluid (Figure 2 and 3). The anterior wall of the hernia sac was formed by the left mesocolon and the sac was opening just at the level of inferior mesenteric vessels. The jejunum was easily reduced from sac manually and its blood supply appeared to be restored after the reduction. There was no
strangulation and ischemia. Then the orifice of the empty hernia sac was closed with interrupted 3-0 silk sutures. The postoperative period was uneventful, and the patient was discharged on the third postoperative day.

Figure 2. Intraoperative photograph demonstrating the hernial orifice and the small bowel that reduced than the hernial orifice.

Figure 3. Intraoperative photograph demonstrating the hernial orifice to the left of the duodenum.
DISCUSSION

Left paraduodenal hernia is about three times more frequent than its right counterpart, and is reported to occur three times more often in men. Although the left paraduodenal hernia is known to be congenital, most patients are recognized between the 4th and 6th decades of life, and the mean age at the time of diagnosis is 38.5 years. Our patient was a man with left paraduodenal hernia and he was in the fifth decade of life. Although the importance of these fossae in the induction of paraduodenal hernia should be questioned, several fossae have been described to be involved in left paraduodenal hernia, including the superior duodenal fossa, the fossa of Treitz, the fossa of Waldeyer, the fossa of Brosike, and the fossa of Landzert. The most common type of left paraduodenal hernia originates from the fossa of Landzert, which is present in approximately 2% of autopsies. The pathogenesis of paraduodenal hernia is unclear. It is now generally accepted that left paraduodenal hernia is congenital in origin and is caused at the time of midgut rotation by invagination of the small bowel into an avascular segment of the left mesocolon. The diagnosis of paraduodenal hernia is often difficult due to the ambiguous presentation. The most common presentation is acute small bowel obstruction with recurrent vague abdominal pain. The majority of patients have history of chronic digestive complaints such as colicky abdominal pain, fullness, vague and nausea. The clinical findings in some patients with a paraduodenal hernia may be nonspecific and even misleading. The presentation symptoms of our patient were intermittent left quadrant pain associated with nausea and vomiting. On the physical examination the abdomen was moderately distended with diffuse tenderness and guarding and rebound on the left side. The bowel sounds were hyperactive. The most common radiologic signs of left paraduodenal hernia include clustering of small bowel loops, a sac-like mass with encapsulation at or above the ligament of Treitz, duodenojejunal junction depression, mass effect on the posterior stomach wall, engorgement and crowding of the mesentery vessels with frequent right displacement of the main mesenteric trunk, and depression of the transverse colon. Radiological guidance, especially by CT, should be carried out with a high index of suspicion to prevent misdiagnosis and delay in surgical intervention, which may result in irreversible ischemic changes of the small bowel. There were no specific signs in our patient’s pre-operative plain x-rays. The abdominal ultrasonography did not demonstrate any abnormality so computed tomography was performed and it revealed jejunum loops forming an encapsulated circumscribed cluster and dilatation in jejunum segments was observed so the patient underwent emergent laparotomy because of acute abdomen signs.

Surgical treatment of left paraduodenal hernia follows the basic principles of hernia surgery: reduction of the contents, restoration of normal anatomy and repairing of the defect. Once diagnosed, left paraduodenal hernias should be surgically repaired because they carry an approximately 50% lifetime risk of incarceration, leading to bowel obstruction and strangulation. We have met an incarcerated left paraduodenal hernia intraoperatively. The proximal jejunum was found to be entrapped by the hernia sac and the anterior wall of the hernia sac was seen to be formed by the left mesocolon. The jejunum was easily reduced from sac. There was no strangulation and ischemia. Then the orifice of the empty hernia sac was closed with interrupted 3-0 silk sutures. The mortality rate associated with paraduodenal hernias is not clear, but it has been stated to be 20-50%.
but recent improvements in radiological facilities have allowed for earlier diagnosis and elective treatment, leading to better outcomes\textsuperscript{10}. Our patient was discharged on the third postoperative day uneventfully.

**CONCLUSION**

Paraduodenal hernias are an unusual cause of intestinal obstruction, but one with which all surgeons should be familiar. Because the presentation is ambiguous and variable, it is impossible to establish a correct diagnosis through physical examination alone. Early surgical intervention should be performed to minimize the morbidity and mortality associated with resultant necrosis in the small bowel. When the patients with no history of laparotomy have mechanical bowel obstruction, internal herniations should always be considered in.

**COMPETING INTERESTS**

The authors declare that they have no competing interests.

**REFERENCES**