A Left Paraduodenal Hernia Causing Recurrent Small Bowel Obstruction: A Case Report

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A Left Paraduodenal Hernia Causing Recurrent Small Bowel Obstruction : A Case Report

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Abstract

Among the congenital internal hernias, paraduodenal hernias are the most common and account for 25%-53% of all cases [1]. Paraduodenal hernias result from abnormal rotation of the midgut during embryonic development and can be divided into two subtypes, left and right paraduodenal hernias, according to their distinct pathogenesis and the resultant anatomical derangement. Internal hernias are important but under diagnosed entities. Clinical symptoms may be intermittent and nonspecific and usually include some degree of nausea, distension and abdominal pain; however, with the advent of modern imaging technology, more information can be gained regarding the anatomical characteristics of the underlying lesion and allow for better treatment planning. We present a rare case of left paraduodenal hernia presenting as recurrent intestinal obstruction, as well as a brief review of the literature.

Introduction

An internal hernia is the protrusion of a viscus 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. They result from incomplete rotation of the midgut, with part of the small intestine trapped posterior to the mesocolon. Right and left paraduodenal hernias are distinct and separate entities, varying not only in anatomic structure but also in embryological origin.

Case report

A 35-year old woman presented at the emergency department with progressive abdominal pain. The pain was colicky in nature predominantly involving the left upper part of the abdomen. The pain did not radiate and there were no aggravating or relieving factors. She had experienced nausea and two episodes of bilious vomiting. There was no fever nor diarrhoea. Over the last few years, multiple short periods of abdominal pain had occurred, comparable to this event. The pain always resolved spontaneously after a couple of hours. She had no prior medical history especially no abdominal surgery. Physical examination revealed a diffuse painful abdomen without any sign of peritonitis. There was a palpable mass in the left part of the abdomen. Bowel sounds were normal. Plain abdominal film did not show free air or dilated bowel loops. CT scan [Figure-1] revealed an abrupt collapse of small bowel loop distal to duodeno jejunal flexure with mild dilatation of stomach and proximal duodenum. Distal jejunal bowel loops which are seen in the left hypochondrium and lumbar regions [Figure-2] showing concentric wall thickening with target appearance - features s/o ischemia. Superior mesenteric artery along with mesentery of the small bowel loops show coiled and twisted appearance at the level of duodeno jejunal flexure. A laparotomy was performed and a left paraduodenal hernia with incarceration of small bowel loops was found. Part of the herniated bowel loops were gangrenous and were resected jejuno-ileal anastamosis was done. The hernia orifice was closed with non-absorbable sutures. The postoperative course was uncomplicated.

Discussion

Para duodenal fossa is the confluent zone of descending mesocolon, transverse mesocolon and small bowelmesentery. Depending on the position of the duodenum and the orientation of the opening of the paraduodenal fossa, either left or right paraduodenal hernias can result. Paraduodenal hernias are usually left sided and are believed to occur due to a congenital defect in the descending mesocolon [1]. The small bowel may invaginate into this space, the fossa of Landzert, which lies to the left of the fourth portion of the duodenum. The herniated small bowel loops may become trapped within this mesenteric sac. The right-sided paraduodenal hernias occur through mesentericoparietal fossa of Waldeyer. The most commonly seen signs of paraduodenal hernias are 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 mesenteric vessels with frequent right displacement of the main mesenteric trunk and depression of the transverse colon. Left sided paraduodenal hernias have a characteristic appearance of a cluster of dilated small bowel loops seemingly encased in a sac and lying between the pancreatic body and/or tail and the stomach to the left of ligament of Treitz. Clinical findings in patients with paraduodenal hernias vary from mild intermittent gastrointestinal complaints to acute intestinal obstruction with volvulus and infarction. A paraduodenal hernia can be demonstrated by an upper gastrointestinal series performed during a period of acute symptoms, because examination during an asymptomatic interval may fail to show the hernia or merely demonstrate nonspecific dilatation, stasis, and edematous mucosal folds. Even at surgery, a paraduodenal hernia may not be evident, either because of spontaneous resolution of the hernia or inadvertent operative reduction due to traction on small bowel loops. In addition, the extent of potential space in a peritoneal fossa seen at exploratory laparotomy is generally not evident from the relatively small size of the orifice of the fossa. 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 (5). The herniated small bowel loops should be reduced and the hernia orifice closed with non-absorbable sutures. A different possibility 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 which bound the hernia anteriorly, and the hernia orifice: care should be taken not to injure these vessels (2-5).

Conclusion

The internal hernia should always be held in due consideration at the moment of diagnosis because the consequent mortality due to complications such as intestinal gangrene is rather high. 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 disease entity, and modern imaging technology make preoperative diagnosis easier today. Timely surgical intervention effectively relieves the patient's complaints and prevents further complications.

References

Illustrations

Illustration 1

Coronal section showing the small bowel loops in the left paraduodenal fossa

Illustration 2

Sagittal section showing abrupt collapse of small bowel loop distal to duodeno jejunal flexure
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