CASE REPORT

Mesocolic Hernia: A Rare Cause of Intestinal Obstruction in Childhood

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Summary

Mesocolic hernia is a rare cause of intestinal obstruction in children. The diagnosis involves a high index of suspicion and prompt intervention to prevent strangulation and a high morbidity. The embryological basis of the condition is of paramount importance to assist the eventual surgical correction.

Key Words: Mesocolic hernia, Volvulus, Strangulation of bowel

Introduction

Internal hernias associated with disorders of rotation of the small bowel are very rare and their diagnosis can be difficult. They may cause recurrent entrapment of the small bowel with partial intestinal obstruction, and may eventually progress to complete obstruction and strangulation. The most commonly seen internal hernias are the right and left meso-colic hernias. Prompt diagnosis is crucial to prevent strangulation and bowel ischemia. The present case report describes a case of left meso-colic hernia with malrotation of midgut presenting with acute intestinal obstruction.

Case Report

The patient, an 11-year-old Indian girl was admitted with a one day history of colicky central abdominal pain followed by frequent bilious vomiting. She had had two similar episodes in the past. The first was two years ago and the more recent one two weeks prior to her current admission, both of which were less severe and resolved spontaneously. Physical examination revealed a dehydrated child with a doughy mass in the left hypocondrium and left peri-umblical region. There were no signs of peritonitis and no abdominal distension. A plain radiograph of the abdomen revealed a distended stomach and a single dilated loop of bowel in the left hypochondrium. Computerized tomogram (CT) of the abdomen with oral contrast showed a whorl of intertwined bowel loops in the left hypochondrium suggestive of a volvulus of the small bowel (Fig 1). Laparotomy revealed a left mesocolic hernia. Almost all the small bowel was entrapped in a hernial sac below the left colon (Fig 2). The neck of the sac was bordered anteriorly by a tributary of the inferior mesenteric vein, medially by the vertebral body and laterally by the medial edge of the left colon. The entrapped gut was healthy and easily reducible. The Duodeno jejunal (DJ) junction was malrotated lying to the right of the midline. The mesentry of the small bowel revealed prominent lacteals a sign suggestive of intermittent episodes of volvulus. A Ladd's procedure was performed and the neck of the sac was then sutured back to the peritoneum of the posterior abdomen to close off the neck of the hernial sac. Post operative recovery was uneventful and she was discharged on the tenth post-operative day. Follow up at three and six months post-operatively have highlighted no further problems.

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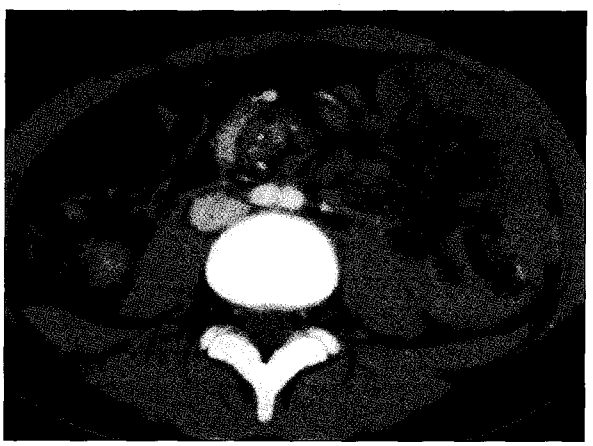

Fig. 1: CT Scan with oral contrast revealing the whorl of loops of bowel suggesting a volvulus

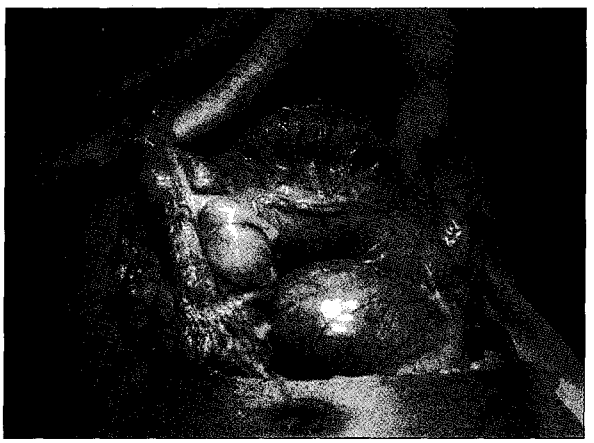

Fig. 2: Intra operative picture demonstrating the internal hernia

Discussion

Lack of fixation of the mesentery of the right or left colon or of the duodenum may result in the formation of the potential spaces for hernias [1]. The right mesocolic hernia is produced when the pre-arterial limb of intestine fails to rotate around the superior mesenteric artery and the loops are entrapped by the mesentery of the caecum and the colon. The left meso-colic hernia is produced when the unsupported area of the descending meso-colon between the inferior mesenteric vein and the posterior pariëtal colonic attachment is ballooned out by the small intestine as it migrates to the left superior portion of the abdominal cavity [2]. Para-duodenal hernia' is therefore a misnomer and it may more appropriately be named a congenital meso-colic hernia. The hernia usually contains most of the small bowel; the afferent limb being the fourth part of the duodenum and the efferent limb the distal ileum. The symptoms of internal herniae irrespective of their type are entirely nonspecific and very few cases are diagnosed in an elective situation. The majority of these cases present with acute intestinal obstruction, and often with strangulation and evidence of peritonitis. Acute intestinal obstruction with strangulation in a child without an external hernia or previous abdominal surgery should strongly suggest the possibility of a congenital internal hernia, especially if the patient gives a history of chronic intermittent abdominal pain with a palpable abdominal mass on examination [3]. The majority of cases are diagnosed during surgery for acute presentations, or it may be an incidental finding. Early surgical intervention should be undertaken in order to avoid the morbidity and mortality associated with acute presentation of meso-colic hernia and resultant small bowel ischemia. Surgical treatment of left meso-colic herniae follows the basic principles of hernia surgery: reduction of the contents, restoration of normal anatomy and repair of the defect [4]. It may be possible to reduce the small bowel through the neck of the sac. However, the orifice may be difficult to identify and is directly below the inferior mesenteric vein, making reduction of the trapped bowel difficult and potentially dangerous. It may be necessary to divide one or both of the inferior mesenteric vessels to reduce a left mesocolic hernia. The Inferior mesenteric vein is identified on the right side of the sac. An incision can be made safely along the right side of the vein. The neck of the sac can be identified and the adhesions if present taken down. The small bowel can then be reduced allowing the vein to return to normal position. The peritoneum adjacent to the vein can be sutured to the posterior abdominal peritoneum to close the surgically enlarged neck of the sac [1]. The key maneuver is mobilization of the inferior mesenteric vein along its right lateral border[1]. In treating patients with a right meso-colic hernia, the small bowel can be freed by incising the lateral peritoneal margin of the right colon and reflecting the ascending colon to the left.

Conclusion

Mesocolic hernias may present as an acute surgical emergency or may be an incidental finding. Surgeons need to be familiar with embryological basis of mesocolic hernias, because surgical repair is dependent on the knowledge of its anatomy. Early surgical intervention should be undertaken in order to avoid the morbidity and mortality associated with acute presentation of mesocolic hernia and resultant small bowel ischaemia.

References

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