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Case Report

Case Presentation of Left Mesocolic Hernia Secondary to Malrotation in an Adult Treated Laparoscopically with Ladd's Procedure

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Abstract

We present the case of an 18 year old male that presented with chronic bowel obstructions leading to significant weight loss and failure found to have a mesocolic hernia secondary to malrotation. He was treated laparoscopically with Ladd's Procedure and recovered uneventfully. Postoperatively he gained weight and his bowel obstructive symptoms resolved.

Keywords: *Left Mesocolic Hernia; Malrotation; Ladd's Procedure*

Introduction

Herniation is the protrusion of an organ through the muscle or tissue that holds it in place. Internal hernias occur when there is protrusion of an internal organ into a retroperitoneal fossa or a foramen in the abdominal cavity.

Case Presentation

The patient was an 18 year old male with no significant past medical history presented to us with a chief complaint of nausea, vomiting, obstipation and weight loss of 20 pounds occurring for approximately 12 months. CT scan of the abdomen was suspicious for "swirl sign" and mesenteric twisting (Figure 1). His laboratory markers were unremarkable and vital signs were stable. His abdominal exam was consistent with mild mid-abdominal tenderness, no rigidity, no rebound, no guarding. However, given the patient's chronic and recurrent episodes of bowel obstruction and weight loss, a decision was made to take the patient into the operating room for a diagnostic laparoscopy.

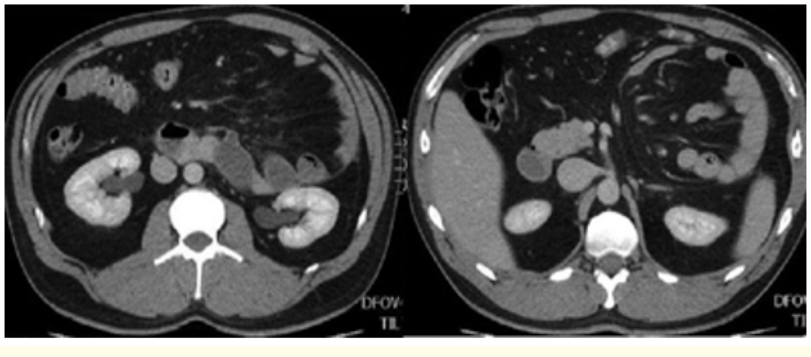

Figure 1: *CT scan of the abdomen and pelvis demonstrating swirling of loops of bowel in the right upper quadrant suggestive of volvulus.*

In the operating room, the patient was noted to have Ladd's bands in the right upper and lower quadrants and a left mesocolic hernia involving jejunal loops (Figure 2). There was no evidence of gangrene of the bowel. Adhesions were released, jejunum was detorsed in a counterclockwise fashion. Ladd's bands were lysed with shears, an appendectomy was performed and the bowel was placed into the nonrotated configuration (Figure 3).

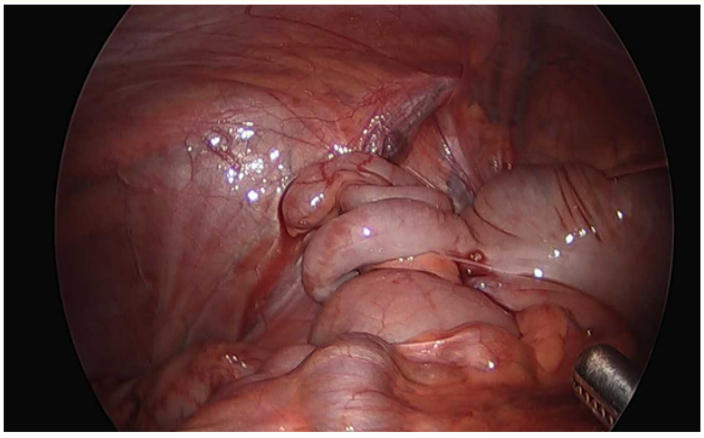

Figure 2: *Laparoscopic image of jejunal loop twisting in the right upper quadrant with evidence of Ladd's bands.*

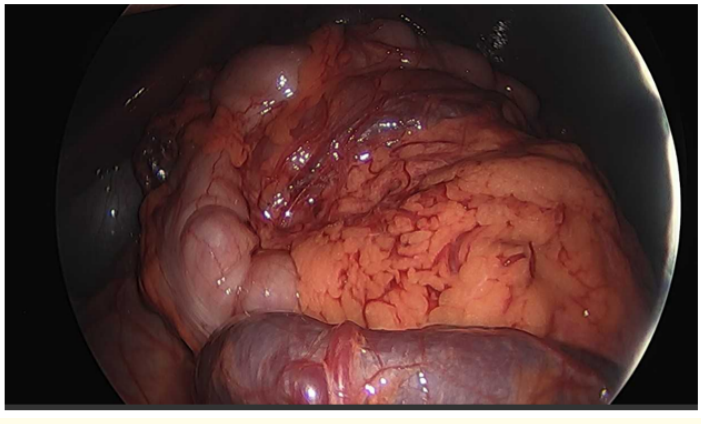

Figure 3: *Final nonrotated intestinal configuration after a laparoscopic Ladd's band procedure with reduction of left mesocolic hernia and appendectomy.*

Postoperatively, the patient recovered uneventfully, advanced to regular diet. On postoperative visit, the patient was free of pain and previous obstructive symptoms and was gaining weight. We present a case report of an 18-year old male with late presentation of intestinal malrotation causing chronic obstructive symptoms and intractable weight loss.

Discussion

Herniation is the protrusion of an organ through the muscle or tissue that holds it in place. Internal hernias occur when there is protrusion of an internal organ into a retroperitoneal fossa or a foramen in the abdominal cavity. In mesocolic hernias the abdominal viscus

herniates through the mesentery, usually that of the small bowel or transverse mesocolon. This often occurs following abdominal surgery due to the creation of defects in the mesentery [1]. Though most cases of mesocolic hernias are iotrengic, they can also occur congenitally. According to Chamely and Antao, 1 in 20 internal hernias are congenital mesocolic hernias. Congenital mesocolic hernias are caused by an abnormal rotation of the primitive midgut [2].

Notably, the patient also presented with malrotation of the gut. During weeks five to ten of embryogenesis there is a physiological herniation of the midgut through the primitive umbilical ring. The midgut loop herniates through the umbilical ring and rotates 90 degrees counterclockwise around the superior mesenteric artery. Around week 11 the midgut rotates an additional 180 degrees counterclockwise before returning to the abdomen. Malrotation of the gut is the complete or partial failure of this 270 degree rotation of the midgut [3].

Intestinal malrotations occur in approximately 1 in 500 births. Symptoms usually occur in the early weeks of life and thus malrotations are generally diagnosed during this period, hence the reason why adult presentation of intestinal malrotation is so rare. Generally, intestinal malrotation is incidentally determined in adults due to its asymptomatic or non-specific presentation with mild symptoms [4].

The association of intestinal malrotation with internal hernia is even rarer and difficult to diagnose. Though these patients often present with chronic abdominal pain and vomiting, signs of intestinal pain may not always be evident. Intestinal malrotation with or without signs of intestinal obstruction should be kept in mind when evaluating adults with atypical abdominal symptoms. Surgical intervention is mandatory to avoid complications of obstruction and ischemia. The Ladd's procedure, done by either laparotomy or laparoscopy, is highly recommended for these patients. This procedure involves mobilization of the duodenum and right colon section of the Ladd's bands along with possible adhesions near the superior mesenteric vessels [5]. However, asymptomatic adults with intestinal malrotation may not need surgery and this is a controversial topic. Ladd's procedure in adults is not without complications and is associated with a high rate of intestinal ischemia or reformation of acute volvulus. In all cases, the decision to operate in adult patients with malrotation should be made in a multidisciplinary fashion with discussions with the patient, their families, and other consulting services such as gastroenterologists and primary care providers [6].

Conclusion

Here we present a technique for management of a mesocolic hernia secondary to intestinal malrotation in an adult patient. A laparoscopic Ladd's procedure was performed successfully.

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