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Adult colo-colonic intussusception caused by congenital bands: A case report and literature review

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ABSTRACT

INTRODUCTION: Intussusception refers to the telescoping of a segment of bowel into the lumen of an adjacent segment. While pediatric intussusception is common and generally idiopathic, adult intussusception is exceedingly rare and is usually attributable to a pathologic lead point.
PRESENTATION OF CASE: 37-year-old man who presented with abdominal pain, and was preoperatively diagnosed with a colo-colonic intussusception. Intraoperatively, the lead point was found to be congenital bands, and there was no evidence of underlying malignancy. He underwent a laparoscopic-assisted extended right hemicolectomy with side-to-side ileo-colic anastomosis.
DISCUSSION: Colo-colonic intussusception is a rare cause of intestinal obstruction in adults. Patients generally present with subacute abdominal pain and obstructive symptoms, rendering the clinical diagnosis challenging. Computed tomography has been shown to be the most accurate diagnostic imaging modality. Due to the high incidence of underlying malignancy in adult colo-colonic intussusception, en-bloc resection of the involved bowel segment remains the standard of care.
CONCLUSION: Congenital bands can serve as a lead point in colo-colonic intussusception, particularly in younger adults. Prompt surgical intervention remains paramount to limit morbidity.

1. Introduction

Intussusception refers to the telescoping of a segment of bowel into the lumen of an adjacent segment. Adult intussusception is rare, accounting for only 5% of all cases of intussusception and 1–5% of cases of intestinal obstruction in adults [1]. Almost 90% of adult intussusceptions are associated with a pathologic lead point, such as a gastrointestinal malignancy, intestinal polyp, or benign neoplasm [2,3]. The literature on adult colo-colonic intussusception is limited to few case reports. To our knowledge, this is the first description of an adult colo-colonic intussusception caused by congenital bands.

2. Case presentation

A 37-year-old man, with a history of Wolff–Parkinson–White syndrome, alcohol abuse and no previous abdominal surgery, presented with a 10-day history of right upper quadrant pain radiating to the back associated with nausea and vomiting. He denied any constipation, hematochezia, melena, fever or constitutional symptoms.

At time of presentation, his temperature was 36.5 °C, blood pressure 140/89, pulse 83, respiratory rate 18, oxygen saturation 97% on room air. On abdominal examination, he had a tender, palpable right upper quadrant mass, with no peritoneal signs. Laboratory tests were within normal limits, including a white blood cell count of 10.3. Computed tomography (CT) scan revealed a colo-colonic intussusception with the cecum and ascending colon extending into the distal transverse colon, and no identifiable lead point (Fig. 1). There was a small-moderate amount of intraperitoneal free fluid, but no evidence of bowel ischemia or perforation. The small bowel loops were dilated to approximately 3.5 cm.

Upon diagnostic laparoscopy, we confirmed the diagnosis of colo-colonic intussusception. We noted the presence of dense fibrous congenital bands in the subhepatic region. The duodenum was slightly more lateral and superior than usual, suggesting a possible partial malrotation. We performed a laparoscopic-assisted extended right hemicolectomy with side-to-side ileocolic anastomosis (Fig. 2). The patient's postoperative course was complicated by a few episodes of hematochezia, which were self-limited and likely secondary to anastomotic bleeding. He was discharged home in good condition on postoperative day 4. Histopathological examination revealed colonic mucosa with ulceration and areas of necrosis, consistent with a chronic ischemic process. There was no evidence of malignancy, and 13 benign lymph nodes were resected (Fig. 3).

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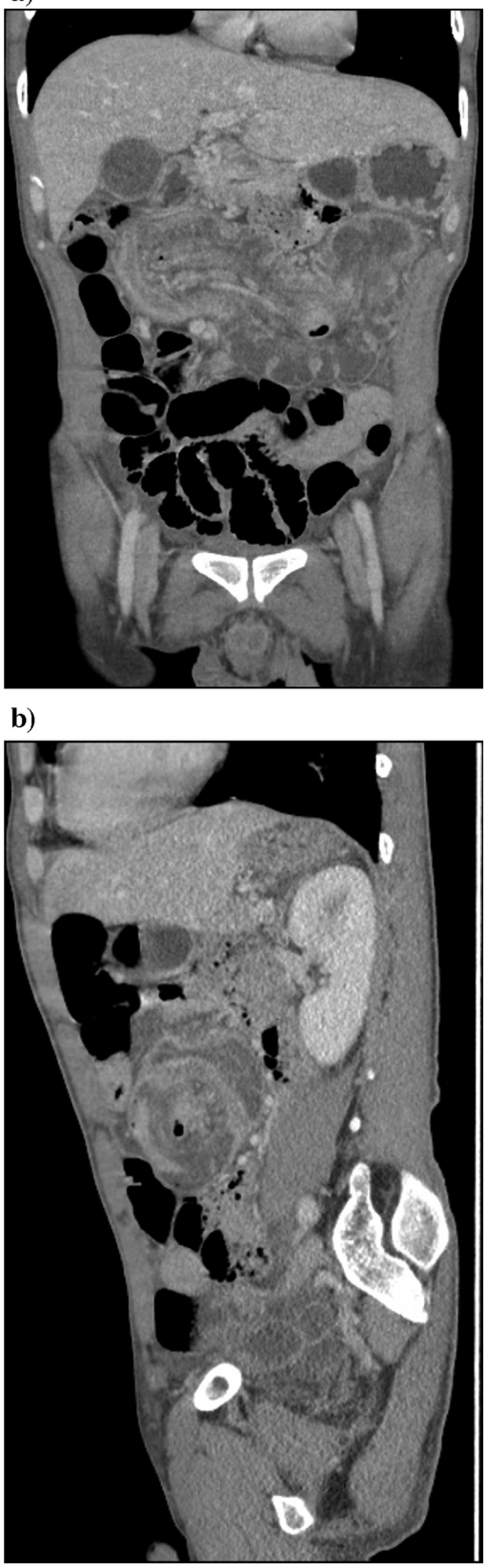

Fig. 1. Computed tomography scan demonstrating a colo-colonic intussusception with the cecum and ascending colon extending into the transverse colon. (a) coronal view (b) sagittal view.

Fig. 2. Intra-operative depiction of the colo-colonic intussusception after exteriorization through a mini-laparotomy.

3. Discussion

Intussusception represents the leading cause of intestinal obstruction in children [4]. In the pediatric population, intussusception is usually idiopathic, and may be related to enlarged lymphoid tissue following an infection. Treatment with hydrostatic or pneumatic reduction constitutes the standard of care [5]. In contrast, adult intussusception is exceedingly rare, accounting for only 1% of all bowel obstructions. The classical pediatric triad of acute onset crampy abdominal pain, bloody diarrhea and palpable tender mass is infrequently observed. Instead, adults generally present with subacute or chronic abdominal pain and vague obstructive symptoms, rendering the clinical diagnosis challenging [6].

Intussusception can be classified into four categories based on its anatomic location: enteric, ileo-colic, ileo-cecal and colo-colonic. Colo-colonic intussusception is generally considered to be the least common type [7]. In contrast to pediatric intussusception, approximately 90% of intussusceptions in adults are associated with an identifiable lead point [1,2]. The majority of lead points in the small intestine are benign entities, such as lipomas, inflammatory lesions, Meckel's diverticula, and duplication cysts. On the other hand, the vast majority of colonic intussusceptions are associated with an underlying malignancy, most commonly, colonic adenocarcinoma (60%) [8]. A literature review of benign causes of adult colo-colonic intussusception reveals that colonic lipomas are the most common cause (Table 1). In this patient, congenital bands were found to be the lead point of his colo-colonic intussusception. These bands are formed from fibrous peritoneal tissue, and can cause abnormal mesenteric fixation. While anomalous congenital bands have been associated with intestinal malrotation and midgut volvulus in children, this is the first description of its role in the development of adult colo-colonic intussusception.

With improvement in cross-sectional imaging modalities, the accuracy of preoperative diagnosis of adult intussusception has significantly improved. Computed tomography is regarded as the most useful imaging technique, with a diagnostic accuracy of 58–100% [7,9]. CT is not affected by body habitus or the presence of intraluminal gas, both of which commonly limit ultrasonographic diagnosis. Differentiating between benign lesions, such as lipomas, and malignant processes is most readily achieved with CT, and allows for optimal surgical planning.