

case report

Chronic nonischemic ileo-ileo-colic intussusception

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Background. Chronic intussusception is a prolapse of a portion of the bowel into the lumen of an immediately adjacent segment of the bowel; it lasts for 14 days or more. The aim of the article is to present a rare cause of nonacute abdominal pain.

Case report. We report about 14-year-old girl who presented with a one-month history of intermittent cramping lower abdominal pain and change in bowel behavior. Plain abdominal x-ray, ultrasonography and CT were performed. Laparotomy revealed an ileo-ileo-colic intussusception (70 cm long); invaginated Meckel's diverticulum was a prevailing anomaly.

Conclusions. Atypical clinical presentation of chronic intussusception often results in delayed or inadequate management of such cases because of the lack of suspicion of a correct diagnosis. Preoperative diagnosis of invagination was based on ultrasonography and computed tomography (CT) which proved again as the most effective and useful preoperative diagnostic method. Surgical intervention is always needed in adults and older children because of high incidence of underlying lesions in them.

Keywords: ileal diseases; intussusception; Meckel's diverticulum

Introduction

Intussusception (invagination) is a prolapse of a portion of the bowel into the lumen of an immediately adjacent segment of the bowel. The acute type does not present as great a diagnostic problem as does the chronic intussusception. The chronic intussusception is

defined as intussusception lasting for 14 days or more.¹

Adult intussusception is the cause of 1-5% of all bowel obstructions.² A vast majority (95%) of intussusceptions occurs in children, whereas only 5% occur in adults.³

In adults, 80%–90% of cases have a demonstrable cause. Approximately 65% are due to a neoplasm, whereas nonneoplastic causes compose the remaining 15%–25% of cases with a known cause and include adhesions and postoperative complications, Meckel's diverticulum, lymphoid hyperplasia and adenitis, trauma, celiac disease, duplications, and Henoch-Schönlein purpura.⁴ Treatment always requires surgical excision.⁵

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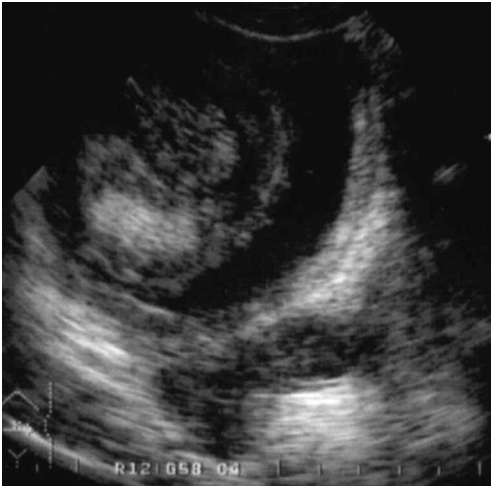


Figure 1a. Intussusception. Transverse sonogram through the lower abdomen demonstrates a rounded mass; peritoneal fluid is trapped between the serosal layers.

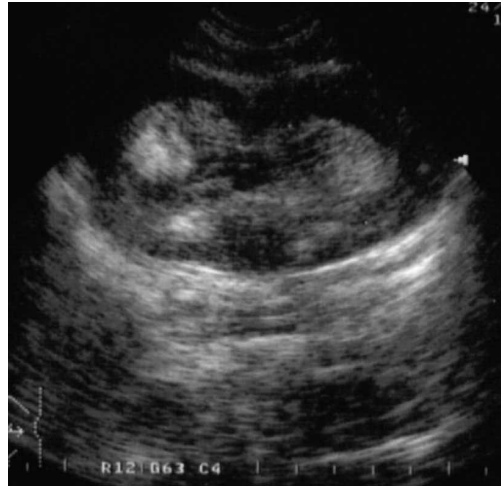


Figure 1b. Intussusception. In the longitudinal plane, the alternating hypoechoic and echogenic layers are called »sandwich« or »pseudokidney sign«.

Case report

A 14-year-old girl presented with a one-month history of intermittent cramping lower abdominal pain and change in bowel behavior. Due to menstrual problems, the patient was initially treated as dysmenorrhea.

Abdominal ultrasonography revealed a soft-tissue mass with hypoechoic outer layer and central echogenic area; the peristalsis through invaginated ileum was active (Figure 1a). The characteristic US findings in a longitudinal plane were alternating hypoechoic and echogenic layers called the »sandwich« or »pseudokidney« sign (Figure 2b). Plain ab-



Figure 2a. Intussusception. CT scan shows a target sign in the region of the terminal ileum.



Figure 2b. Intussusception. CT scan obtained caudad to Figure 2A shows the presence of fat in the center of ileal intraluminal mass specific for inverted Meckel's diverticulum.

dominal x-ray showed slightly dilated loops of the small bowel without air-fluid levels.

CT of the abdomen showed concentric rings (»target« sign) with the thickening of the affected bowel and intraluminal areas of fat attenuation due to mesentery and Meckel's diverticulum drawn into the intussusception (Figures 2a, 2b).

Laparotomy revealed an ileo-ileo-colic intussusception (70 cm long); the prevailing anomaly was invaginated Meckel's diverticulum.

Discussion

The classical presentation of intussusception consisting of pathognomonic triad of severe abdominal pain, bloody stool, and a palpable abdominal mass leads to the correct diagnosis in the majority of the patients. Intussusception can also be present in a subacute or chronic form with a long history of less severe symptoms.^{1,6} This form of »nonischemic« intussusception is a distinct entity with atypical clinical presentation and often results in delayed diagnosis due to low index of suspicion.⁶

If one considers the possibility, chronic intussusception can be readily diagnosed by sonography; the CT appearances are pathognomonic.⁷⁻⁹ Ultrasonography of transverse sections shows a mass with a swirled appearance of sonolucent and hyperechoic bowel wall of the loop-within-a-loop. The characteristic US findings in a plane transverse to intussusception are a sandwichlike or pseudo-kidney appearance of the intussusciptens and the intussusceptum with a hypoechoic ring surrounding an echogenic center; it appears as if multiple layers would build the walls of the intussuscepted bowel loops.

Typical CT findings of intussusception are thickening of the affected bowel segment, areas of fat attenuation within the abnormal bowel loop, concentric rings (»target« sign), and an intraluminal soft-tissue mass at the leading end of the intussusceptum.^{10,11} The »target« appearance is not specific for intussusception, and it may also be seen in neutropenic colitis and cystic fibrosis.¹² With intussusception, the mesentery invaginates the bowel and is trapped between the overlying layers of the bowel in the intussusceptum and intussusciptens. In our case, CT and ultrasonography findings were typical.

Intussusception in adults must be managed by surgery, and intestinal resection is the procedure of choice.¹³ The laparoscopic approach offers both a diagnostic and thera-

peutic option. Laparoscopy may be used as the final diagnostic or/and therapeutic tool for intussusception in adults.²

Chronic intestinal invagination is a rare cause of nonacute adult abdominal pain and Meckel's diverticulum is a rare, though prevailing cause of intestinal invagination. Atypical clinical presentation of chronic intussusception often results in delayed or inadequate management of such cases because of the lack of suspicion of a correct diagnosis. Preoperative diagnosis of invagination was based on ultrasonography and computed tomography which proved again as the most effective and useful preoperative diagnostic methods. Surgical intervention is always needed in adults and older children because of high incidence of underlying lesions in them.

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