

■ CASE STUDY

Adult Intussusception

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ABSTRACT

Recurrent abdominal pain is a common and challenging presenting chief complaint in the Emergency Department. Intussusception in adults, although rare, is an important etiology to consider. The diagnosis can often be delayed because of the nonspecific and intermittent nature of symptoms in adults. This report presents the case of a 37-year-old man with multiple Emergency Department visits for abdominal pain and with negative results for prior imaging studies, who was eventually diagnosed with intussusception after 5 years of recurrent symptoms. The case study is followed by a review of the literature regarding the diagnosis and management of intussusception in adults.

INTRODUCTION

The clinical presentation of intussusception in adults can be nonspecific, with the “classic” triad of abdominal pain, vomiting, and currant-jelly stools found in children rarely seen, leading to delays in diagnosis. Nevertheless, intussusception is an important differential to consider because most cases in adults are caused by structural lesions, commonly malignant neoplasms. In contrast to pediatric intussusceptions, which are managed nonoperatively with air contrast enemas, treatment in adults is exploratory laparotomy for surgical reduction or resection.

CASE REPORT

A 37-year-old man presented to the Emergency Department with cramping peri-umbilical abdominal pain, associated with multiple episodes of nonbloody emesis. He reported similar episodes occurring several times a year for the previous 5 years. Previous episodes had resolved after receiving antiemetics and narcotics in the Emergency Department. He also reported one episode of dark tarry stools 4 months earlier. At that time, his primary care physician ordered contrast computed tomography (CT) of the abdomen and pelvis that showed loops of small bowel with diffuse wall thickening and mild dilatation, possibly indicative of an early inflammatory process. Review of systems was negative for fevers, weight loss, ocular symptoms, oral ulcers, skin lesions, joint pain, or diarrhea. He was otherwise in good health, with the only medications being levothyroxine and omeprazole. He had had no abdominal surgeries. His family history was significant for Crohn disease in his mother.

On physical examination the patient was a well-developed man in moderate discomfort, holding his abdomen

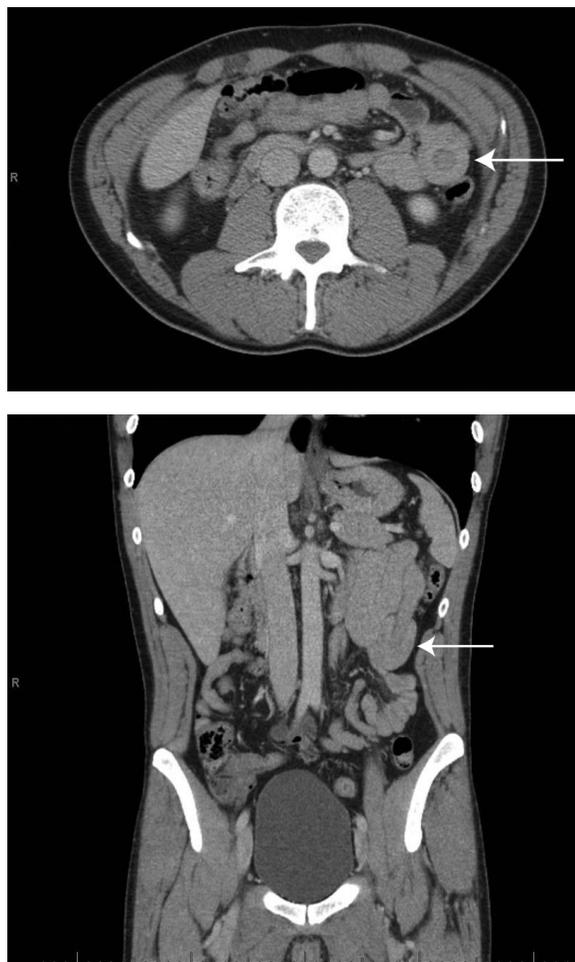


Figure 1. Abdominal computed tomography with intravenous contrast of a 37-year-old man with enteroenteric intussusception. Top: axial view showing the characteristic “target sign” in the left upper quadrant. Bottom: coronal view with jejunum-jejunal intussusception again seen in the left upper quadrant.

with knees drawn up to his chest. He had a temperature of 98.8° F (37.1° C), pulse of 84 beats/min, blood pressure of 132/82, respiration of 20 breaths/min, and oxygen saturation of 97% on room air. His heart had a regular rate and rhythm, and his lung sounds were clear. Despite his apparent discomfort, his abdomen was soft and nondistended with normal bowel sounds. He had mild tenderness of palpation in the left upper quadrant with no obvious palpable masses.

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He was hemocult negative with brown stool. His genitourinary exam was normal.

Laboratory tests were unremarkable, showing a white blood cell count of 11.2 K/ μ L (normal range, 3.5-12.5 K/ μ L), and hematocrit of 45.9% (normal range, 34%-46%). Electrolytes, liver function test results, and pancreatic enzymes were all within normal limits. Given his persistent discomfort on serial exams unrelieved by antiemetics and narcotics, an abdominal CT was performed. The CT scan showed a nonobstructive small-bowel intussusception within the proximal small bowel (Figure 1).

General Surgery was consulted and the patient was taken to the operating room for exploratory laparotomy. The entire bowel was inspected from the ligament of Treitz to the terminal ileum. No intussusception was noted, but the patient was found to have a 20-cm segment of mildly thickened, boggy proximal jejunum, as well as mild creeping fat along the terminal ileum without inflammation. Given no evidence of active intussusception, mass, stricture, or bowel ischemia, no bowel resection was performed. The patient was discharged home on postoperative day 2. He was referred to gastroenterology for follow-up tests to evaluate for Crohn disease.

During the following year, the patient returned to the Emergency Department two more times for cramping abdominal pain. Both times he had CT scans that did not show recurrent intussusception or other acute pathology, and he was discharged home after symptoms were controlled. It was suspected that there may have been a secondary gain component to his subsequent encounters for abdominal pain, though mild inflammatory bowel disease could not be excluded. He had outpatient upper endoscopy and colonoscopy that were both unremarkable, with no ulcers, polyps, granulomas, or masses noted. Random biopsies of the stomach showed mild chronic inflammation without evidence of *Helicobacter pylori*. Random biopsies of the duodenum, terminal ileum, and colon showed no histologic abnormalities. He has been referred for capsule endoscopy in the future to further investigate the small bowel for evidence of Crohn disease.

DISCUSSION

Intussusception involves the telescoping of a segment of bowel into an adjacent segment, leading to obstruction, inflammation, and possible ischemia. Although intussusception is the leading cause of intestinal obstruction in children, it is relatively rare after childhood, accounting for less than 5% of bowel obstruction in adults.¹ Adult intussusception occurs most often in the small bowel and is classified on the basis of location. It can be categorized as enteroenteric (small bowel only), colocolic (large bowel only), ileocolic (terminal ileum prolapses within the ascending colon), or ileocecal (ileocecal valve is the lead point). In a study of 745 surgically diagnosed adult intussusceptions, 52% were found in the small intestine (39% enteroenteric, 13% ileocolic) and 38% in the large intestine (17% ileocecal, 17% colocolic, 4% appendiceal).²

In contrast to intussusceptions in children, which are typically primary or idiopathic, most adult intussusceptions are caused by a structural lesion. A significant proportion of these

lead points are malignant neoplasms, accounting for 66% of colonic intussusceptions and 30% of cases in the small intestine. Adenocarcinoma is the most common malignant lead point in the colon, whereas metastasis is the most common malignant lead point in the small intestine.^{3,4} Other etiologies include benign tumors (adenomatous polyps, lipomas, fibromas, leiomyomas, hamartomas), adhesions, lymphoid hyperplasia, cystic fibrosis, scleroderma, celiac disease, inflammatory bowel disease, appendicitis, pancreatitis, and rectal foreign bodies. Sixteen percent of small-bowel and 5% of large-bowel intussusceptions are idiopathic.

The clinical presentation of intussusception in adults can be variable, posing a challenge to diagnosis. The "classic" pediatric presentation of abdominal pain, bloody currant-jelly stools, and palpable tender abdominal mass, seen in 15% of pediatric intussusceptions, is rarely seen in adults. In contrast to intussusception in children, adult intussusceptions often present as chronic intermittent cramping abdominal pain associated with nonspecific signs of bowel obstruction including nausea, vomiting, gastrointestinal bleeding, constipation, or abdominal distention.⁵ One surgical series of 58 adults noted that intussusceptions with malignant etiologies were more likely to have hemocult-positive stools and tended to occur in older populations.⁶

Abdominal CT is now widely regarded as the modality of choice for diagnosing intussusceptions in adults. The CT finding of a heterogeneous "target" or "sausage-shaped" soft-tissue mass consisting of an outer intussusciens and central intussusceptum is virtually pathognomonic. Mesenteric fat and vessels are often visible within the bowel lumen, and varying degrees of proximal bowel dilatation may be present.^{7,8} In a retrospective review of 33 adult patients with intussusception, 30 were diagnosed by CT, and those caused by neoplastic processes were more likely to be associated with other signs and symptoms of obstruction.⁹ Other imaging modalities include plain abdominal films that can provide clues regarding site of obstruction but are neither sensitive nor specific in terms of diagnosis. Ultrasound is a helpful tool especially in children; it can be useful in adults when an abdominal mass can be palpated but may be limited by body habitus and the presence of air in distended bowel loops.

Management of symptomatic adult intussusceptions traditionally involves exploratory laparotomy or laparoscopy followed by resection of lead point masses or areas of ischemia. Preoperative reduction by barium or air, or manually in the operating room is generally not recommended owing to theoretical risks of perforation, seeding of microorganisms or tumor cells, and increased surgical complications of manipulated friable and edematous bowel.^{3,9} However, preoperative reduction can be considered in consultation with a surgeon in cases where a diagnosis of benign lesion has previously been established and the bowel involved is viable, or where resection may result in short gut syndrome.^{10,11} Of note, nonobstructing intussusception detected incidentally on CT in an otherwise asymptomatic patient does not require intervention.

With regard to operative management, recent studies recommend a selective approach to bowel resection that takes

into consideration the location and pathologic characteristics of the underlying lesion.^{11,12} In patients older than age 60 years or in intussusceptions with colonic lesions, bowel resection following the appropriate oncologic principles is recommended given the high incidence of malignancy.⁶ In cases of transient small-bowel intussusceptions in the setting of benign etiologies such as celiac sprue or Crohn disease, resection may not be warranted because treatment of the underlying disease process should improve symptoms. Given the significant risk of short gut syndrome in patients with Crohn disease (5%-10%), aggressive resection therapy may not be indicated if the bowel involved is healthy without evidence of obstruction or ischemia.¹³ These factors were likely taken into consideration in the decision not to perform bowel resection in the patient presented in this case.

CONCLUSION

Although intussusception is a rare cause of abdominal pain in adults, it is an important diagnosis to consider in patients with recurrent abdominal pain because it may be a harbinger of malignancy. Symptoms can be nonspecific, and diagnosis is best made by CT imaging. Management is often surgical, and delays in diagnosis can lead to complications such as bowel obstruction, ischemia, or undiagnosed malignancy. Prognosis is generally favorable depending on the etiology of disease, with poorest outcomes in small-intestinal intussusceptions caused by metastatic disease.⁷ ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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All the Manner and Degrees

As no two persons are exactly alike in health so neither are any two in disease; and no diagnosis is complete or exact which does not include an estimate of the personal character, or the constitution of the patient. ... for to treat a sick man rightly requires the diagnosis not only of the disease but of all the manner and degrees in which its supposed essential characters are modified by his personal qualities, by the mingled inheritances that converge in him, by the changes wrought in him by the conditions of his past life, and by many things besides.

— Sir James Paget, 1st Baronet of Harewood Place (Middlesex),
1814-1899, English surgeon and pathologist, best known for Paget disease