Ileoileal intussusception in an adult patient

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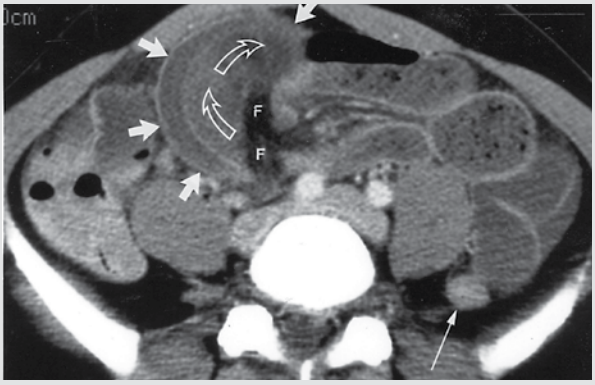
Abdominal pain is a common presenting complaint at the physician's office. There are many diagnostic possibilities. Because intussusception is uncommon in adults, it is often initially misdiagnosed. In 1 study, a correct preoperative diagnosis was made in less than a third of cases.[1] A case of intussusception, confirmed by surgery and pathology, is presented here.

Case

A 26-year-old woman visited the hospital outpatient care centre of an urban university on 7 occasions over a 5-month period for intermittent, mild, epigastric abdominal pain. During this period she was found to have a positive *Helicobacter pylori* antibody and was treated with a 2-week course of lansoprazole, amoxicillin, and metronidazole. Her symptoms improved but persisted. She returned to her physician's office with a 5-day history of more severe intermittent epigastric pain associated with nausea and vomiting. Physical examination was unremarkable except for mild tenderness during epigastric palpation. Results of laboratory investigations, including complete blood count; amylase, lipase, and liver function tests; a test for occult blood in stool; and upper abdominal ultrasonography, were all normal. She was treated with lansoprazole again and referred to a gastroenterologist.

Three weeks later the abdominal pain intensified and became more generalized. She went to the emergency room where her temperature was found to be 38.9°C (102°F). Abdominal examination revealed a slightly distended abdomen, decreased bowel sounds, and diffuse tenderness most prominent in the right lower quadrant. There was no guarding or rebound tenderness. Anorectal examination revealed red, bloody mucus in the rectal vault. Results of repeat laboratory investigations were unremarkable except for a white blood cell count of 23.2 with 84% neutrophils. Computed tomography scan of the abdomen showed mildly dilated small-bowel loops with partial obstruction suggestive of inflammatory and infectious bowel disease or small-bowel intussusception (**Figure 1**).

Figure 1. Transverse computed tomography section at the level of the umbilicus shows a soft tissue density intussusceptum (open arrows) within the fluid-filled lumen of the intussuscipiens (short arrow): *Mesenteric fat (F) follows the intussusceptum. Obstructed proximal small-bowel loops are dilated; the colon (long arrow) is decompressed.*



The patient was admitted to the hospital and treated with intravenous metronidazole, ranitidine, and intravenous fluids and showed partial clinical improvement. Her white blood cell count came down to 12.8 with 71% neutrophils. A colonoscopy revealed blood and mucus throughout the colon, with no evidence of active bleeding or mucosal ulcerations. The terminal ileum showed changes that initially suggested Crohn's disease. Attempted endoscopy was stopped because bilious fluid was found in the middle third of the esophagus and in the stomach. An obstructive series on admission revealed evolving small-bowel obstruction that was treated with intravenous steroids, antibiotics, salicylates, and nasogastric suction. On the sixth day in hospital, the obstructive series revealed free air under the right side of the diaphragm. The patient underwent emergency laparotomy. Operative findings included ileoileal intussusception with gangrene and perforation distal to the intussusception (**Figure 2**). Right hemicolectomy and enteric anastomosis removed about 40 cm of the distal terminal ileum and 10 cm of the right colon. Pathology revealed hemorrhagic intussusception with a wide area of infarction in the ileal segment and signs of perforation.

The patient had an uneventful postoperative course and was discharged on the sixth postoperative day. She was prescribed oral metronidazole and ampicillin. Five

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Can Fam Physician 2007;53:241-243

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Figure 2. Surgical gross specimen of resected bowel demonstrating length of ileoileal intussusception (black arrows) and extensive hemorrhagic infarction of the involved ileum (white arrows)

years after surgery, she is doing well without any gastrointestinal complaints. Diagnosis of inflammatory bowel disease as the cause of intussusception was initially considered, but now appears to be unlikely because symptoms are not chronic. Chronic and intermittent enteric intussusception without any clear underlying cause was likely responsible for the patient's 5-month illness.

Discussion

MEDLINE, PubMed, and MD Consult were searched using the term "adult intussusception" for all English-language articles from 1960 to 2006. A manual search was also done from reference lists at the end of articles. Articles were primarily case reports and case series.

Intussusception occurs when one segment of proximal bowel telescopes into the lumen of an adjacent distal segment of bowel, resulting in obstruction and possibly ischemic injury and death of the affected segment of the bowel. Only about 5% of all cases of intussusception are thought to occur in adults.[2] Diagnosing intussusception in adults is challenging, owing to varied presenting symptoms and time course. Unlike the typical pediatric presentation of acute onset, episodic abdominal pain, currant jelly stools, and vomiting, adults often present with a vague history of symptoms that might include diarrhea, constipation, and weight loss. Nausea, vomiting, and abdominal pain are the most common manifestations among adults.[1,3-5] Many patients have indolent, chronic, and nonspecific symptoms, resulting in delayed presentation to doctors' offices. In one case series,[6] 4 of 7 patients had recurring chronic symptoms. Duration of symptoms before diagnosis has been reported as being between 1 and 365 days with a mean duration of 37.4 days in 1 case series[1] and up to 5 years in another report.[7] Symptom duration is longer for benign than for malignant lesions and longer for enteric than for colonic lesions. In 1 study, 30% of adults with intussusception had melena or guaiac-positive stools. Up to 10% of patients had fever and palpable abdominal masses.[1] Abdominal tenderness or guarding were present about half the time.[8]

A correct preoperative diagnosis was made in less than a third of cases in 1 study. Radiologic studies are helpful, but not always diagnostic. Abdominal computed tomography is the most accurate diagnostic procedure, revealing intussusception in 78% of cases. Barium enema examination yields a diagnosis in about half of cases; upper gastrointestinal studies yield a diagnosis in fewer than a quarter of cases.[1,9]

Our patient likely had idiopathic intussusception. Among adults, idiopathic enteric intussusception appears to be more common than idiopathic colonic intussusception.[4,8] In contrast to children, a large proportion (more than 90% in some studies) of adults with intussusception have underlying lesions.[1,3,10] Many case reports show unusual associations of intussusception with other conditions, including Meckel diverticulum,[2] Crohn's disease,[11] postoperative recovery, celiac disease, and local inflammation resulting from pancreatitis.[2] The most common benign cause of enteric intussusception was postoperative adhesions.[1] Malignancy was more commonly associated with colonic intussusception than with enteric intussusception.[2,7,8,12] One study reported no difference between sexes in type of intussusception or etiologic factors.[4] Cases of intussusception were evenly distributed among adults of all ages, but the cause of intussusception was more likely to be malignancy among 60- to 80-year-old patients than among 20- to 60-year-old patients.[4,9]

Surgical resection without reduction is generally advocated as the best treatment for adults with intussusception.[1,3] Some authors support hydrostatic reduction for certain cases.[7] Transient, relatively asymptomatic enteric intussusceptions (particularly of the proximal small bowel) might be incidental findings on computed tomography that do not require intervention.[9,13]

Conclusion

Our patient represents an interesting case of intussusception that highlights the elusive, indolent course that adult intussusception can take. Our patient had intermittent symptoms for 5 months before bowel obstruction with infarction occurred. This case report indicates that intussusception, although rare in adults, should be considered in the differential diagnosis of abdominal pain.

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EDITOR'S KEY POINTS

- The correct preoperative diagnosis of intussusception is made in less than one third of cases and is usually delayed.
- This 26-year-old woman visited on 7 different occasions before the diagnosis was made. She finally underwent emergency laparotomy.
- Abdominal computed tomography is the most accurate diagnostic procedure, revealing intussusception in 78% of cases.

POINTS DE REPÈRE DU RÉDACTEUR

- Le diagnostic préopératoire d'intussusception est posé correctement dans moins d'un tiers des cas et il est habituellement tardif.
- Cette femme de 26 ans a consulté à 7 reprises avant qu'on établisse le diagnostic. Elle a finalement dû subir une laparotomie d'urgence.
- La tomographie abdominale qui identifie l'intussusception dans 78% des cas est l'examen diagnostique le plus précis.

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