KANSAS JOURNAL of MEDICINE

Case Report

What's the Leading Point? A Benign Polypoid Mass Behind the Trouble

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Received April 12, 2024; Accepted for publication July 31, 2024; Published online Sept. 5, 2024
https://doi.org/10.17161/kjm.vol17.22233

INTRODUCTION

Adult intestinal intussusception occurs when one segment of the bowel telescopes into an adjacent segment. It is a rare condition that is difficult to diagnose due to nonspecific gastrointestinal symptoms. While obstruction and bowel ischemia can occur, only 1% of small bowel obstructions in adults is the result of intussusception.[1] Unlike pediatric cases, most adult intussusceptions are secondary to an identifiable pathology, typically an organic lesion such as a neoplasm, acting as a leading point. Imaging modalities, particularly abdominal computed tomography (CT), are essential for confirming intussusception, although ultrasonography also plays a diagnostic role.

Treatment usually involves surgical resection of the affected bowel segment due to the high risk of structural anomalies and malignancy. This paper presents the case of a patient who came to our clinic with refractory, chronic iron deficiency anemia. He was ultimately found to have a benign polypoid mass that had ulcerated in the setting of chronic entero-enteric intussusception.

CASE REPORT

A 67-year-old male with a history of iron deficiency anemia of unclear etiology, diverticulitis, non-Hodgkin's lymphoma (marginal B-cell), and chronic, rate-controlled atrial fibrillation presented to gastroenterology for further evaluation of his anemia. His surgical history included a partial colectomy 11 years prior for complicated diverticulitis and a cholecystectomy. The patient denied taking anticoagulants or nonsteroidal anti-inflammatory drugs. He had no significant alcohol, tobacco, or drug use.

Over the past seven years, the patient reported some dark stools but denied melena and hematochezia. Records from the six months prior to presentation showed mild anemia with a hemoglobin level ranging from 11.0 to 12.9 g/dL. He received two doses of intravenous iron during that time. A CT scan one-month prior revealed intussusception of the terminal ileum, presumed to be due to a leading lymph node effect (Figure 1).

Figure 1. Computed tomography (CT) abdomen showing intussusception of the terminal ileum.

An esophagogastroduodenoscopy and colonoscopy were performed. The esophagus, stomach, and duodenum appeared normal. The colonoscopy showed small, non-bleeding internal hemorrhoids and five sub-centimeter sessile polyps resected from the sigmoid colon, hepatic flexure, and transverse colon. A left-sided surgical anastomosis was also noted. Due to unremarkable findings, the patient underwent a small bowel follow-through (SBFT) and capsule endoscopy. Additional testing included tissue transglutaminase antibody screening, which was negative.

SBFT (Figure 2) and capsule endoscopy (Figure 3) revealed an ulcerated polyp or mass protruding into the lumen of the distal small bowel. A repeat abdominal CT three months after presentation showed resolution of the previously noted intussusception in the distal ileum. Due to a strong suspicion of gastrointestinal pathology as the cause of his progressive anemia, the patient underwent an exploratory laparotomy, resulting in the discovery and resection of a 3 cm ulcerated polypoid mass in the ileum. Pathology revealed an intraluminal pedunculated, exophytic 2.9 cm benign polypoid mass with features consistent with chronic prolapsed/intussuscepted bowel wall tissue, mucosal surface ulceration, mucosal and submucosal granulation tissue formation, and mild chronic inflammation (Figure 4).

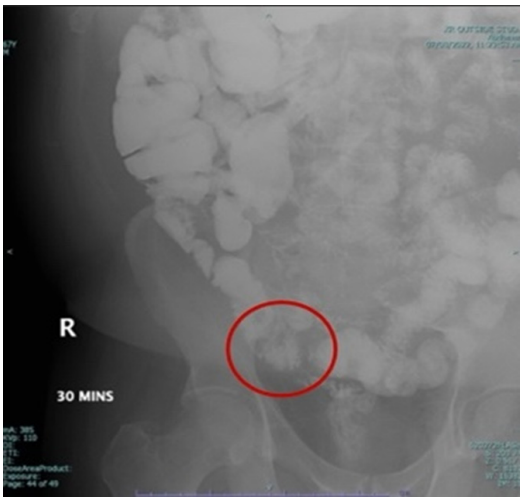

Figure 2. Small bowel follow-through showing transition point in the right lower quadrant.

Figure 3. Capsule endoscopy showed an ulcerated polyp or mass protruding into the lumen of the distal small bowel.

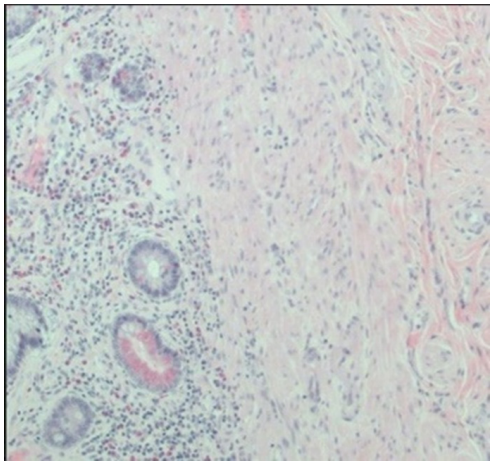
Figure 4. Biopsy showing features consistent with chronic prolapsed bowel wall tissue, with mucosal surface ulceration, mucosal and submucosal granulation tissue formation.

The patient was readmitted to the hospital seven days after the exploratory laparotomy with symptoms of partial small bowel obstruction, which resolved with conservative management. Follow-up iron studies showed improvement from his prior baseline.

DISCUSSION

Bowel intussusception occurs when a segment of the bowel, along with part of its mesentery, telescopes into the lumen of an adjacent segment. While common in children, adult intussusception is rare, accounting for only 5% of all cases.[1] Clinical presentation in adults varies and can include colicky abdominal pain, nausea, vomiting, GI bleeding, abdominal distension, and changes in bowel habits. Intussusception is typically classified by location, etiology, and the presence or absence of a lead point.

When classified by location, benign organic lesions are more frequently associated with entero-enteric intussusception, while malignancies are more common in large bowel intussusception. Differential diagnoses for causes of intussusception include malignancies such as gastrointestinal stromal tumors (GIST), neuroendocrine tumors, leiomyomas, and other small intestine cancers, as well as conditions like leading lymph node effect, arteriovenous malformations, ulcers, celiac disease, and other small bowel pathologies.[2,3] In 70 - 90% of adult cases, leading points are formed by organic lesions such as inflammatory bowel disease (IBD), Meckel's diverticulum, vascular anomalies, post-operative adhesions, and benign or malignant lesions.[4]

Ultrasound can be useful in diagnosing intussusception in both children and adults, showing the characteristic target or doughnut sign in the transverse view and the pseudo-kidney sign in the longitudinal view. However, CT is currently considered the most sensitive radiologic method to confirm intussusception, with a reported diagnostic accuracy of 58 - 100%.[1] Unlike ultrasound, CT is not affected by gas in the bowel lumen and can help determine the cause, locate the lead point, rule out obstruction, and evaluate for complications. Characteristic CT features include a target or sausage-shaped soft-tissue mass with a layering effect and mesenteric vessels within the bowel lumen.[5]

Due to non-specific symptoms, the diagnosis of adult intussusception is often delayed and typically confirmed through surgery. Given the high proportion of malignant lesions as leading points in adults, surgery remains the treatment of choice.[1] Preoperative reduction with barium or air is not recommended due to potential complications such as perforation, intraluminal seeding, and venous tumor dissemination.[3,6]

In our case, pathology revealed a segment of ileum with a benign 2.9 cm polypoid lesion characterized by marked fibromuscular proliferation, prolapse-type changes, ulceration, and features of chronic mucosal injury, with no evidence of neoplasm. Polypoid lesions, which can be neoplastic or benign, more frequently originate from the mucosa but also can develop from the submucosa. Their etiology is largely unknown, but they most commonly occur in the stomach, followed by the small bowel, with peak incidence in the sixth and seventh decades of life. In the small bowel, they usually present as intussusception or obstruction.[7] Polypoid lesions also can ulcerate, cause GI bleeding, and result in anemia.[8] Differential diagnoses for benign polypoid masses include inflammatory myofibroblastic tumors, GIST, and inflammatory polyps related to IBD.

CONCLUSIONS

In conclusion, adult intussusception is a rare and challenging diagnosis in patients with anemia and/or obstruction. Diagnosis is often missed due to non-specific symptoms. In most cases, a pathologic mass acting as a leading point can be identified with abdominal CT, which not only distinguishes the presence or absence of a lead point but also helps determine the mass's location to guide management. Benign lesions are more common in entero-enteric locations, and treatment typically involves formal resection of the involved bowel segment. Therefore, it is important to consider benign polypoid masses in the differential diagnosis of lesions causing small bowel intussusception and in patients with non-specific symptoms such as anemia and abdominal pain.

REFERENCES

[1] Marinis A, Yiallourou A, Samanides L, et al. Intussusception of the bowel in adults: A review. World J Gastroenterol 2009; 15(4):407-411. PMID: 19152443.
[2] Carvalho A, Leitão P, Pinheiro J, et al. Small bowel intussusception in 2 adults caused by inflammatory polyps. Radiol Case Rep 2017; 12(4):710-714. PMID: 29484055.
[3] Akbulut S. Intussusception due to inflammatory fibroid polyp: A case report and comprehensive literature review. World J Gastroenterol 2012; 18(40):5745-5752. PMID: 23155316.
[4] Baleato-González S, Vilanova JC, García-Figueiras R, Juez IB, Martínez de Alegría A. Intussusception in adults: What radiologists should know. Emerg Radiol 2012; 19(2):89-101. PMID: 22200965.
[5] Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. Am J Surg 1997; 173(2):88-94. PMID: 9074370.
[6] Eisen LK, Cunningham JD, Aufses AH Jr. Intussusception in adults: Institutional review. J Am Coll Surg 1999; 188(4):390-395. PMID: 10195723.
[7] Harned RK, Buck JL, Shekitka KM. Inflammatory fibroid polyps of the gastrointestinal tract: Radiologic evaluation. Radiology 1992; 182(3):863-866. PMID: 1535909.
[8] Kim YH, Blake MA, Harisinghani MG, et al. Adult intestinal intussusception: CT appearances and identification of a causative lead point. Radiographics 2006; 26(3):733-744. PMID: 16702451.

Keywords: intussusception, capsule endoscopy, ileal neoplasm