

Adult sigmoid intussusception as a rare presentation of advanced adenocarcinoma: a case report

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Abstract

Adult bowel intussusception is a rare clinical entity resulting in 1-5% of intestinal obstructions. It occurs more often in the small intestine and it's secondary to a pathologic condition in 90% of cases. Its clinical picture can be unspecific, and the diagnosis is often made intraoperatively. We describe an uncommon clinical presentation of this rare clinical entity. A 69-year-old female presented in our emergency room with severe abdominal pain and rec-

torrhagia. The abdomen computed tomography scan revealed a colonic intussusception and a mass suggestive of a malignancy, as confirmed by rectosigmoidoscopy. The patient underwent the Hartmann procedure. A histopathological examination revealed an advanced colorectal adenocarcinoma as the lead point of the intussusception. Adult sigmoid intussusception is a rare cause of bowel obstruction, and it is often cancer-related. Symptoms can be nonspecific, and diagnosis is best made by CT imaging and endoscopic investigations which allow for planning surgery.

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Key words: case report, sigmoid intussusception, colorectal adenocarcinoma, acute abdomen, Hartmann's procedure.

Conflict of interest: the authors declare no conflict of interest, and all authors confirm accuracy,

Ethics approval and consent to participate: no ethical committee approval was required for this case report by the Department, because this article does not contain any studies with human participants or animals. Informed consent was obtained from the patient included in this study.

Patient consent for publication: the patient gave her written consent to use her personal data for the publication of this case report and any accompanying images.

Availability of data and materials: all data generated or analyzed during this study are included in this published article.

Received: 21 May 2023.
Accepted: 12 June 2023.

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Case Reports in Emergency Surgery and Trauma 2023; 1:14
doi:10.4081/crest.2023.14

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Introduction

Intussusception is defined as the invagination of a segment of the gastrointestinal tract into the lumen of an immediately adjacent segment. It occurs more often in the small bowel, and it is one of the most common causes of bowel obstruction in pediatric patients, while it is rare in adults.

Meanwhile, in pediatric patients, the etiology is usually benign or idiopathic, two-thirds of adult intussusception cases are related to benign or malignant tumor.¹

The clinical manifestations are unspecific, and the diagnosis is often made intraoperatively or by cross-sectional imaging.

We describe the case of a patient with a diagnosis of sigmoid colon intussusception due to an advanced colorectal adenocarcinoma resulting in bowel obstruction in an emergency setting.

This case report was prepared following the CARE Guidelines.²

Case Report

A 69-year-old Caucasian female presented in our Emergency Department with acute colic abdominal pain and rectal bleeding. She reported similar episodes over the last two months. The patient had no relevant past medical history, and she did not take any medication.

The physical examination revealed a distended abdomen, and diffuse abdominal pain with a positive Blumberg sign in the left iliac fossa. She had a temperature of 37.3°C, pulse of 66 beats/min, blood pressure of 150/90 mmHg, and oxygen saturation of 98%. Her heart had a regular rate and rhythm, and her lung sounds were clear.

The blood tests revealed slightly raised inflammatory markers WBC 10.34x 10⁹/L (normal range, 4.8-10.8 x 10⁹/L), PCR 1.43 mg/dL (normal range, 0.00-0.50 mg/dL) while hemoglobin, electrolytes, liver function tests, and pancreatic enzymes were within normal limits.

The abdominal X-ray was unspecific, showing copro stasis of the right colon and distension of the descending colon (Figure 1);



Figure 1. Radiographic image showing coprostasis of the right colon and distension of the descending colon.



Figure 2. Sagittal CT scan. The arrow indicates the voluminous mass suspected as malignant that acted as the lead point for sigmoid colonic intussusception.

therefore, a complete abdominal computed tomography (CT) was performed. The CT scan showed a “bowel-within-bowel” configuration in the sigmoid colon, in relation to a reniform bulky intraluminal mass as the intussusception lead point (Figures 2, 3).

Moreover, free abdominal fluid was detected in the pouch of Douglas and the sigmoid colon had thickened walls with signs of intestinal pneumatosis as features of ischaemic bowel suffering.

Preoperative rectosigmoidoscopy confirmed the presence of a bulky vegetative mass with a necrotic appearance, occupying the entire lumen of the sigmoid colon and constituting an impediment to the passage of the instrument. Multiple biopsies were performed. According to clinical and instrumental data, the patient’s diagnosis was sigmoid intussusception caused by a mass strongly suggestive of a malignancy. An urgent explorative laparotomy was performed and confirmed the sigmoid intussusception (Figures 4, 5) associated with a severe distention of the upstream descending colon.

Multiple mesenteric lymphadenopathies were visible along the inferior mesenteric artery, while there was no evidence of Glissonian outcropping liver lesions or other nodular lesions of the abdominal wall or bowel.

Considering the presence of signs of bowel ischemia and bowel obstruction we decided that Hartmann’s procedure was the best approach, making an en-bloc resection of the sigmoid colon with no intraoperative reduction, and following the oncological principles, as described in the international literature.

A macroscopic examination of the surgical sample revealed a voluminous intraluminal polypoid mass as the lead point of the intussusception. The histopathologic exam showed an advanced colorectal adenocarcinoma G2, R0, with no mutations of MMR complex, TNM staging: pT4 pN0 (25 lymph nodes collected).

The postoperative course was uneventful. On day 1 the patient started re-feeding with good tolerance and the colostomy started to work on day 2. The blood tests gradually normalized and the patient was discharged in good clinical condition after 9 days.

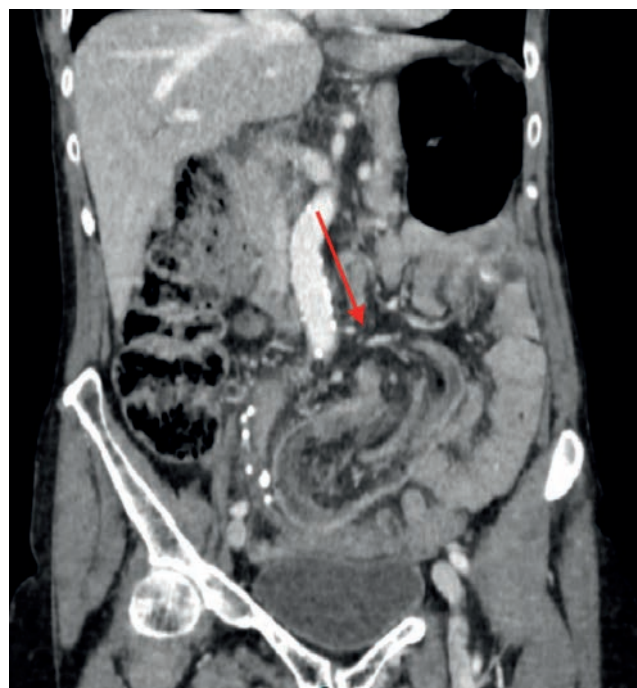


Figure 3. Coronal CT scan. The arrow indicates the vessels within the bowel lumen.

The multidisciplinary oncological discussion recommended adjuvant chemotherapy with the Folfox scheme for 6 months (currently ongoing).

Discussion

Intussusception occurs when a proximal segment of the bowel and its associated mesentery invaginate into the lumen of the adjacent distal segment. It's frequently due to a pathologic lead point (intraluminal, mural, or extramural), which acts as a focal area of traction that draws the proximal bowel within the distal bowel.¹ This condition is uncommon in adults (5% of total cases of intussusception) where it is a rare cause of intestinal obstructions (only 1-5% of total bowel obstruction).³

According to the gastrointestinal tract involved, intussusception can be classified into enteric type (limited to the small intestine), ileocolonic type (ileocecal intussusception, including invagination of the ileum through the ileocecal valve); colonic type (involving the colon), and sigmoid-rectal type (involving the sigmoid colon and rectum).^{3,4}

Intussusception's etiology is various and includes benign, malignant, and idiopathic causes.

Benign causes are frequently involved in small bowel intussusceptions and are represented by inflammatory lesions, Meckel's diverticulum, postoperative adhesions, lipoma, and adenomatous

polyps. Malignant etiology is instead responsible for two-thirds of large bowel intussusceptions.⁵

Primary adenocarcinoma is the most frequent form in colonic and ileocolic intussusceptions (respectively 78.8% and 61.7%), while metastatic carcinoma is the most common in enteric intussusceptions (48.7%). Other less frequent malignant cancers are lymphoma and GIST.^{2,6}

The clinical manifestations are often unspecific, making differential diagnosis challenging (5), as in the presented case. Abdominal pain is the most common symptom (76.5% of cases); it can be acute, subacute paroxysmal colic (76.5%), or chronic pain that lasts for months (23.5%). Other symptoms include ileus (58.8%), nausea or vomiting (55.8%), weight loss (15.7%), bloody stools (11.8%), and abdominal mass (5.9%) (3).

Preoperative diagnosis is difficult due to the variability of the clinical presentation. CT is currently the gold standard in the diagnosis of intussusception. It can evidence the position and the presence of a lead point, and moreover, it provides pieces of information regarding bowel ischemia or perforation. CT proved to be superior to X-ray, ultrasound, and opaque enema.^{1,7,8} In the setting of colonic or ileocolic intussusception, preoperative colonoscopy can be useful to confirm the presence of pathology and/or malignancy, allowing the lesion to be diagnosed and eventually biopsied. All these data can be helpful for the surgeon to obtain the most accurate diagnosis and for tailoring the surgical procedure.

As described in the international literature, in the presented case

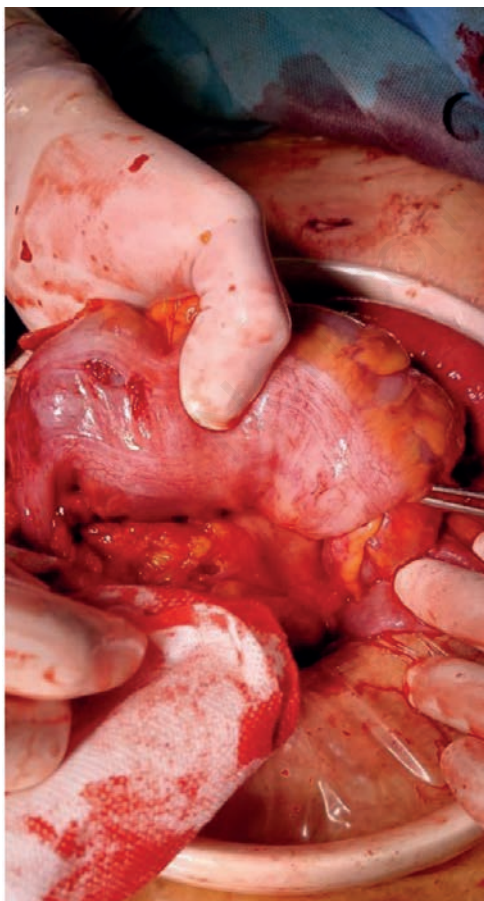


Figure 4. Intraoperative image of sigmoid intussusception. DeBakey forceps are inserted into the invaginated portion of the bowel.



Figure 5. Intraoperative image of sigmoid intussusception.

CT and colonoscopy have proved to be useful tools for raising the suspicion of colonic intussusception and differential diagnosis with other diseases like sigmoid volvulus, diverticular disease, etc.

The management of intussusception in adults remains mainly surgical, using different techniques accordingly to the bowel tract involved, the presence of ischemia, the identification of a lead point, and its nature.

In the presence of suspected malignant lesions is important to avoid intraoperative reduction of the intussusception to reduce the risk of bowel rupture and peritoneal seeding. An en-bloc bowel resection with D2 lymphadenectomy is indicated, to guarantee the best possible oncological result.

Generally, the creation of a primary surgical anastomosis can be performed in entero-enteric intussusceptions and right-sided colonic or ileocolic intussusception, while Hartmann's procedure is the recommended choice for left-sided colonic intussusception with associated obstruction, as the presented case. Primary anastomosis or primary anastomosis with ileostomy should be considered in patients without risk factors for anastomotic leak such as comorbidities, malnutrition, smoking, immunosuppressives therapy, chemotherapy, intraoperative evidence of obstruction, inflammation, or bowel edema.^{1,5,6}

Conclusions

The presented case is supposed to be anecdotal, describing a rare clinical condition that the surgeon may face in the management of an acute abdomen. The few cases reported in the international literature make the subject worthwhile.

Adult colonic intussusception is a rare cause of abdominal pain, and the clinical manifestations are often unspecific. The diagnosis is challenging, and a CT scan is the gold standard to achieve a pre-operative diagnosis.

Intussusception should be an option in the differential diagnosis of patients with recurrent abdominal pain and adults presenting in emergency settings with intestinal obstruction. Delays in diagnosis can lead to severe complications such as bowel obstruction, ischemia, and cancer progression.

In the suspect of a malignant lesion, the surgical procedure planned must respect the oncological concept to preserve the patient's prognosis.

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