Intussusception Secondary to Adenocarcinoma of the Colon: A Case Report and Literature Review

Amber Duda DO, Michael Caparelli MD, Timothy Braverman MD, John Cullen MD

Jewish Hospital, Cincinnati OH

Introduction:

- Intussusception is a process that occurs when one segment of bowel and adjacent mesentery (intussusceptum) telescopes into a downstream segment of bowel (intussuscipiens).[1]
- This condition is one of the most common causes of bowel obstruction in children; however, this process accounts for approximately 1-5% of bowel obstructions in adults.[2]
- Adult intussusception is associated with underlying organic pathology in greater than 50% of cases.[3]
- In this report we describe a case of sigmoid intussusception caused by adenocarcinoma and its management.

Case Report:

- A 67-year-old male with history of intellectual disability, cerebral palsy, diabetes, and epilepsy presented to the emergency department (ED) with complaints of vague abdominal pain and hematochezia.
- Physical exam was significant for moderate distention and firmness of the left lower quadrant of the abdomen.
- CT scan of the abdomen and pelvis demonstrated intussusception involving the sigmoid colon with marked bowel wall thickening [Figure 1].
- After discussion with the patient's family it was decided to take the patient to the operating room for exploration. A flexible sigmoidoscopy showed dusky appearing mucosa of the sigmoid colon intussuscipiens. Next, a laparotomy was performed and the intussusception was palpated, but not reduced. A large, firm mass was found to be the lead point [Figure 2]. The sigmoid colon was resected and an end descending colostomy was created.
- Surgical pathology was positive for moderately differentiated adenocarcinoma with invasion through the muscularis propria [Figure 3]. Two of 54 lymph nodes were positive resulting in T3N1b disease.
- The patient was discharged home on post-operative day 4.
- The patient presented back to the ED four days after discharge due to persistent bilateral leg swelling secondary to deep venous thrombosis and acute congestive heart failure.
- During his second admission MRI of the abdomen was performed, which showed hepatic metastases. CT guided biopsy was positive for adenocarcinoma consistent with metastasis from a primary colon cancer. After discussion at a multi-disciplinary tumor board the decision was made to consult palliative care.



Figure 1: Axial view of CT abdomen that shows sigmoid intussusception.



Figure 2: Gross specimen demonstrating sigmoid colon mass as lead point.

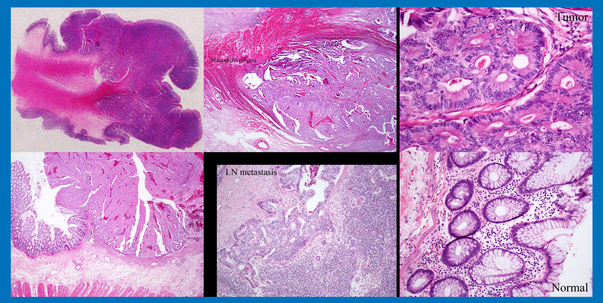


Figure 3: H&E stain of sigmoid adenocarcinoma. Figure A shows normal colonic tissue. Figure B shows adenocarcinoma.

Discussion:

- Intussusception is defined as invagination of a proximal portion of bowel and its adjacent mesentery into a downstream segment of bowel.[1]
- Intussusception in adults is a diagnostic challenge due to non-specific signs and symptoms. Intussusception in the adult population is an uncommon presentation of abdominal pain, accounting for 1-3% of bowel obstructions and therefore is typically low on the differential diagnosis.
- In adult intussusception a lead point is present in 70-90% of cases and is due to a pathologic abnormality.[4]
- Intussusception of the sigmoid colon itself is extremely rare, as there have been very few documented cases thus far. One reason for this is that the retroperitoneal attachments to the sigmoid colon or adhesions to the lateral abdominal wall may prevent telescoping of the sigmoid colon. Although less common than small bowel intussusception, colonic intussusception has a higher rate of malignancy.
- Intussusception in adults is difficult to diagnose due to variation of clinical symptoms in its presentation. This is in contrast to the pediatric population who presents with the common triad of currant jelly stools, abdominal pain, and palpable mass.[4] The most common presenting symptom is abdominal pain. It is also common for colonic intussusception to present with a palpable mass likely because the larger diameter of bowel allows for a larger mass to develop prior to causing obstructive symptoms.
- Most diagnoses are made with CT scan, which is the most sensitive test. On CT scan a target shaped soft tissue mass with a layering effect is commonly seen. Endoscopy can be helpful in the diagnosis to assess vascular compromise of the segment of bowel involved but is not commonly used.
- The most common lead point found in adult intussusception is neoplasia and therefore the management of adult intussusception is surgical, which differs from pediatric intussusception. Unlike in the pediatric population air or contrast enema is not recommended for treatment of adult intussusception.[2]
- In right-sided colonic intussusception the most common operation performed is oncologic resection and primary ileo-colic anastomosis.[2] If left-sided intussusception is encountered the surgical procedure will depend on tissue viability. It is often recommended to approach left sided or sigmoidorectal intussusception with a two stage procedure -- the first being an end-colostomy and Hartmann's pouch.[2 Ultimately, the choice of surgical approach is based on the suspicion for malignancy, anatomic site, extent of involvement, degree of inflammation, ischemia, and edema at the time of operation.

References:

1. Soybel DJ, Landma WB. Chapter 40: Ileus and Bowel Obstruction. In: *Greenfield's Surgery Scientific Principles and Practice* . Fifth . Philadelphia, PA: Lippincott and Williams; :760-761.
2. Marinis A, Yiallourou A, Samanides L, et al. Intussusception of the bowel in adults: A review. World Journal of Gastroenterology. 2009;28(15):407-411.
3. Maghrebi H, Makni A, Rhaiem R, et al. Adult intussusceptions: clinical presentation, diagnosis and therapeutic management. International Journal of Surgery Case Reports . 2017;33:163-166..
4. Yakan S, Caliskan C, Makay O, Denecli AG, Korkut MA. Intussusception in adults: clinical characteristics, diagnosis and operative strategies. World Journal of Gastroenterology. 2009;15(16):1985-1989.