

When the Bowel Telescopes: A Case Report on Adult Intussusception Secondary to Cecal Carcinoma

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Adult Intussusception is a rare clinical entity accounting for a small proportion of bowel obstruction cases in adults. In contrast to pediatric intussusception, which is predominantly idiopathic, adult intussusception is frequently associated with an identifiable pathological lead point, with malignant lesions being more common in colonic and ileocecal variants. The clinical presentation in adults is often nonspecific and variable, ranging from intermittent abdominal pain to acute intestinal obstruction, thereby making preoperative diagnosis challenging. Contrast-enhanced computed tomography plays a crucial role in diagnosis by accurately identifying the intussusception, associated obstruction, and underlying lead points. Surgical management remains the treatment of choice in adult cases, particularly when malignancy is suspected, with bowel resection often performed according to oncological principles. We report a 77-year-old male presenting with acute abdominal pain and abdominal distension who was diagnosed with ileocecal intussusception secondary to caecal adenocarcinoma. Emergency laparotomy followed by definitive oncological surgery resulted in a favorable postoperative outcome.

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Introduction

Intussusception refers to the condition in which one segment of the bowel invaginates (telescopes) into an immediately adjacent segment of bowel, usually distal to it. The telescoping proximal segment of bowel is termed the intussusceptum, while the receiving distal segment is termed the intussusciptiens.^[1] Intussusception often leads to mechanical obstruction of bowel, and rarely progresses to bowel ischemia, leading to necrosis and perforation of the telescoped segment of bowel.^[2]

Intussusception is a common condition of the pediatric population (peak age of 6 to 18 months), but is a rare entity in the adult age group. Adult intussusception accounts for only 1% of all bowel obstructions and 5% of all intussusceptions, making its diagnosis uncommon and significant.^[3] In children, the etiology of intussusception is primarily idiopathic in over 90% of cases. The opposite is true in adults where only 10% of cases are idiopathic. In adults, a benign etiology (Crohn's disease, polyps, lipoma, Meckel's diverticulum) is seen in a majority of cases of

small bowel intussusceptions with approximately one-third being malignant lesions (metastatic melanoma, GIST, lymphoma, adenocarcinoma). Over one-half of pure colonic intussusceptions are of a malignant cause, with primary adenocarcinoma being the most common lead point malignant etiology.^[1,4,5] In adult patients, ileocecal intussusception represents a distinctive clinical entity where nearly all instances are secondary to a malignant lead point, specifically cecal adenocarcinoma affecting the ileocecal valve.^[6]

The diagnosis of adult intussusception is often challenging due to its non-specific clinical presentation. Imaging therefore plays a crucial role in establishing a preoperative diagnosis. Historically, contrast studies such as barium meal follow-through and barium enema were commonly employed in the diagnosis of intussusception. These studies may demonstrate characteristic findings such as the "coiled spring" appearance or a cup-shaped filling defect, while plain abdominal radiographs may reveal features of intestinal obstruction.^[1,3] Although largely replaced by cross-sectional imaging, these

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modalities remain important historical diagnostic tools. Ultrasonography may reveal characteristic “target” or “pseudokidney” signs, although its utility is limited by bowel gas and operator dependency.^[7] Contrast-enhanced computed tomography (CT) remains the diagnostic modality of choice due to its high sensitivity and ability to accurately identify the intussusception, associated complications, and underlying pathological lead point.^[8] Here, we report a case of ileocecal intussusception in a 77-year-old male with an underlying cecal adenocarcinoma acting as the pathological lead point, requiring emergency laparotomy.

Case Presentation

A 77-year-old man with no known comorbidities, presented with complaints of abdominal pain and abdominal distention for the past two days. The abdominal pain was acute in onset, colicky in nature, intermittent and progressively worsening. There was no history of associated symptoms such as vomiting, constipation or loss of appetite.

On general examination, the patient was conscious, oriented and hemodynamically stable. His vital parameters were in the normal range. An abdominal examination revealed a distended abdomen with tenderness and guarding localized to the right lumbar region. There was no evidence of generalized rigidity or rebound tenderness. No palpable abdominal mass was appreciated. Bowel sounds were hypoactive on auscultation. Per rectal examination was unremarkable.

Routine hematological and biochemical investigations were within normal limits. Contrast-enhanced computed tomography (CT) of the abdomen revealed dilated jejunal loops measuring up to 3.5 cm along with the characteristic ‘target sign’ consistent with ileocecal intussusception, with the distal ileum acting as the intussusceptum and the cecum as the intussusciens (Figure 1). Based on the clinical and radiological findings, a diagnosis of acute small bowel obstruction secondary to ileocecal intussusception was made.

The patient was taken up for emergency laparotomy. Intraoperatively, resection of the distal ileum along with limited resection of the ascending colon was performed, followed by creation of an ileostomy and distal mucus fistula of the ascending colon. The immediate postoperative period was uneventful. The patient started on a soft solid diet on postoperative day seven.

Histopathological examination of the resected specimen (Figure 2) revealed moderately differentiated infiltrating adenocarcinoma of the cecum with all resected

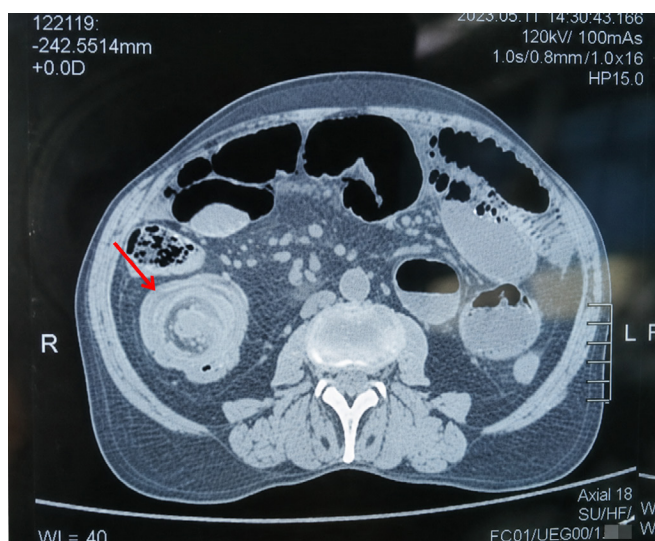


Figure 1: Contrast-enhanced computed tomography (CT) image of the abdomen demonstrating ileocecal intussusception with the characteristic “target sign” (red arrow), showing the distal ileum telescoping into the cecum

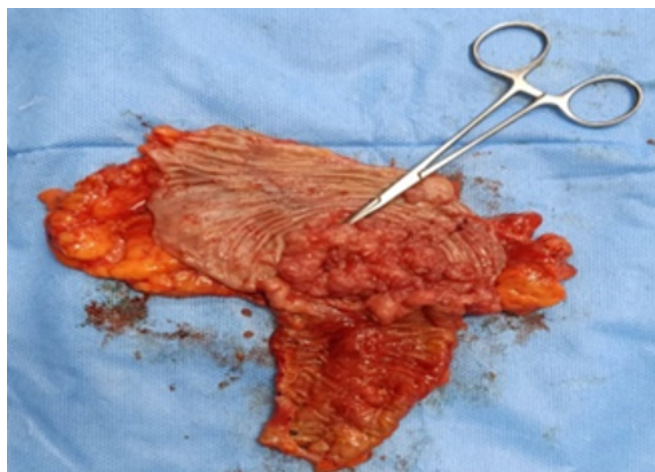


Figure 2: Intraoperative specimen showing the resected ileocecal segment with underlying cecal adenocarcinoma acting as the pathological lead point for Ileocecal intussusception

margins free of tumor infiltration. Lymphovascular invasion was not identified, while perineural invasion was present. The tumor extended through the muscularis propria into the pericolorectal tissues. Tumor budding score was low (0–4), and two lymph nodes showed features of reactive follicular hyperplasia. The pathological stage was reported as pT3NxMx. Following tumor board discussion, the patient subsequently underwent extended right hemicolectomy with ileotransverse anastomosis and lymph node clearance. The postoperative period was uneventful, following which the patient was discharged and initiated on adjuvant Capecitabine chemotherapy

under the guidance of the medical oncology team. The patient was advised regular oncological follow-up with periodic clinical assessment and surveillance for disease recurrence.

Discussion

Adult intussusception remains an uncommon clinical entity and differs significantly from its pediatric counterpart with respect to etiology, presentation, and management. Unlike pediatric intussusception, which commonly presents with the classical triad of abdominal pain, vomiting, and currant jelly stool, adult intussusception usually manifests with chronic or nonspecific symptoms, frequently resulting in delayed diagnosis.^[2,3] In the present case, the patient presented acutely with abdominal pain and abdominal distension of only two days duration, eventually developing features of acute small bowel obstruction. Interestingly, despite radiological evidence of obstruction, the patient did not report associated symptoms such as vomiting or constipation, highlighting the variable and often subtle clinical presentation observed in adults. Similar findings have been described by Yakan *et al.*, who reported that adult intussusception often lacks a characteristic clinical picture and is frequently diagnosed only after radiological evaluation or surgical exploration.^[8]

The anatomical location of intussusception in adults is of considerable clinical importance, as the underlying etiology often correlates with the involved bowel segment. Small bowel intussusceptions are more frequently associated with benign lesions, whereas colonic and ileocolic variants demonstrate a much stronger association with malignant lead points.^[1,4,5] In particular, ileocecal intussusception in elderly patients should raise suspicion for an underlying cecal malignancy.^[9] The present case demonstrated moderately differentiated cecal adenocarcinoma acting as the pathological lead point, consistent with previously published adult series. Although unusual locations of adult intussusception such as gastroduodenal, colorectal, and coloanal variants have been reported in literature, these remain exceedingly rare compared to ileocolic and enteroenteric forms.^[10,11]

Preoperative diagnosis of adult intussusception has historically been difficult because of its nonspecific symptomatology and low clinical suspicion. Earlier studies reported that many cases were diagnosed only intraoperatively.^[3] However, advances in imaging techniques have significantly improved diagnostic

accuracy in recent years. Ultrasonography may demonstrate characteristic findings such as the “target sign” or “pseudokidney sign,” although its utility in adults is often limited by bowel gas and operator dependency.

^[7] In the present case, contrast-enhanced computed tomography (CT) demonstrated the characteristic target sign along with dilated jejunal loops and clearly identified the distal ileum as the intussusceptum and the cecum as the intussusciens. Kim *et al.* reported CT to be the most valuable imaging modality in adult intussusception owing to its ability to identify the site, nature, and possible lead point of the lesion while simultaneously evaluating for obstruction and ischemic complications.^[12]

Surgical intervention remains the definitive treatment modality for adult intussusception because of the high probability of an underlying pathological lead point, particularly malignancy in colonic and ileocecal lesions.^{[4][5]} Unlike pediatric intussusception, where non-operative reduction is often attempted, adult cases are generally managed surgically.^[13] Considerable debate exists regarding reduction prior to resection; however, many authors advocate primary en bloc resection in suspected malignant cases to avoid intraluminal tumor dissemination, venous embolization, and perforation.^[3,14] In the present case, the patient underwent emergency laparotomy with resection of the involved bowel segment, followed by definitive oncological management with extended right hemicolectomy and lymph node clearance after histopathological confirmation of cecal adenocarcinoma. Adjuvant chemotherapy plays an important role in reducing recurrence risk and improving long-term outcomes in resected colon cancer, particularly in patients with locally advanced disease. Accordingly, our patient was initiated on adjuvant Capecitabine therapy following surgical management and tumor board evaluation.^[15] This management strategy aligns with current recommendations for the management of malignant adult ileocecal intussusception and colon adenocarcinoma.

The present case emphasizes the need to consider adult intussusception as an important differential diagnosis in elderly patients presenting with features of acute abdomen or bowel obstruction, despite its rarity. Our patient demonstrated several characteristics consistent with previously reported adult series, including advanced age, ileocecal involvement, and the presence of an underlying malignant lead point. Furthermore, this case highlights the crucial role of CT imaging in enabling accurate preoperative diagnosis and

guiding timely surgical management. The successful outcome following emergency resection and subsequent oncological intervention also reinforces the importance of a multidisciplinary approach in managing malignant adult intussusception.

Conclusion

Adult Intussusception is an uncommon clinical entity and remains a rare cause of acute intestinal obstruction in the elderly population. The present case highlights ileocecal intussusception secondary to an underlying cecal adenocarcinoma, emphasizing the strong association between adult colonic intussusceptions and malignant lead points. Owing to its nonspecific presentation, adult intussusception continues to pose a diagnostic challenge and often requires a high index of clinical suspicion.

Early radiological evaluation with contrast-enhanced CT plays a crucial role in establishing a timely preoperative diagnosis and guiding surgical management. Prompt surgical intervention remains the cornerstone of treatment in adult intussusception, particularly in cases associated with suspected malignancy. This case further underscores the importance of considering intussusception as a differential diagnosis in elderly patients presenting with features of acute abdomen or bowel obstruction.

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