

# Surgical Treatment Of Adult Intussusceptions. Case Series And Review Of Literature.

J Iqbal, M Pall, L Kaman, R Singh

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## Abstract

Adult intussusception is a rare clinical entity and usually caused by an organic lesion. Diagnosis is often difficult and made during laparotomy or laparoscopy. Contrast enhanced CT scan of the abdomen is important for making the diagnosis. In diagnosed cases, surgery is the recommended treatment. Here we report four cases of adult intussusception, two ileo-colic, one colo-colic and one jejuno-ileal. The etiology was inflammatory fibroid polyp in two cases, submucosal colonic lipoma in one case and enteritis (typhoid) in one case.

## INTRODUCTION

Intussusception is the telescoping of one segment of the gastrointestinal tract into an adjacent segment. Adult intussusception is very rare, accounting for only 1% of all cases of intestinal obstructions and 5% of all intussusceptions.<sup>1,2</sup> It differs from childhood intussusception in its presentation, causes and management.<sup>1</sup> A demonstrable etiology is found in 70-90% of cases of adult intussusceptions and approximately 40% of them are due to primary or secondary malignant neoplasms.<sup>2</sup> Abdominal Computed Tomography scan has been shown to be a useful test in evaluating these patients.<sup>2</sup> It may define the location and nature of the mass and allows staging of the patients with malignancies.<sup>2</sup> In adults, surgery is the recommended treatment because of the high rate of malignant lesions associated with this process.

## CASE SERIES

### Case 1

A 49-year-old female patient, known hypothyroid for the last 16 years on treatment, presented with abdominal pain, intermittent, colicky and non-radiating, for the last 9 days. Abdominal distension, vomiting and melena for 1 day was present. No history of weight loss or hematemesis. On reporting to the hospital, she was afebrile, with a pulse rate of 80/minute, a BP of 130/70mmHg and a weight of 96kg. Abdominal examination showed mild distension with minimal tenderness in right iliac fossa and right lumbar region. No mass was palpable. Melenic stool was noticed on

rectal examination. Hemoglobin was 8.6g%. Thyroid function test was normal. Abdominal X-ray showed dilated small bowel loops. USG of the abdomen revealed mild hepatomegaly and dilated small bowel loops. CECT of the abdomen showed ileocolic intussusception (figure 1). On laparotomy there was ileo-ascending colon intussusception. Cut section revealed a 4x2cm polypoidal mass arising from the cecum adjacent to the ileocecal valve (figure 2). Resection without reduction and ileo-ascending colon anastomosis was done. The postoperative period was uneventful and she was discharged on postoperative day 7. Histopathology revealed an inflammatory fibroid polyp.

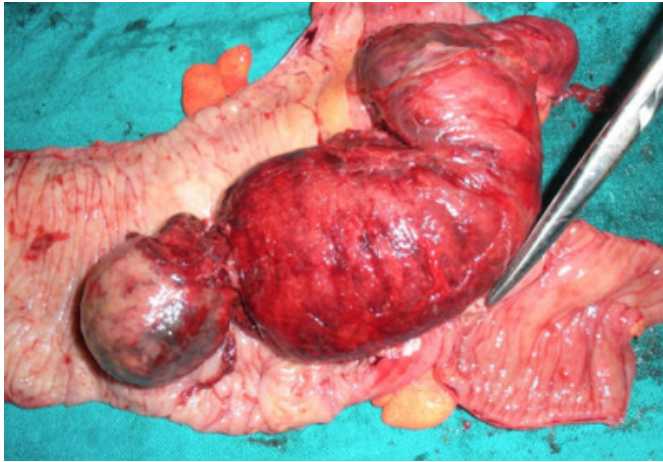
### Figure 1

CECT abdomen showing ileocolic intussusception



**Figure 2**

Laid-open operative specimen showing polypoidal growth arising from cecum



**Case 2**

A 38-year-old male presented with abdominal pain which was intermittent and colicky, 1-2 episodes per month associated, with vomiting and loose stool for 2 months. He had one episode of melena one month back. On examination, the abdomen was distended and there was tenderness in the right iliac fossa. Digital rectal examination was normal. Hemoglobin was 8.3g%, the rest of the blood investigations were normal. Stool examination revealed occult blood. Esophagogastroduodenoscopy was normal. USG of the abdomen showed a bowel mass in the right iliac fossa and mild hepatomegaly. CECT of the abdomen showed telescoping of the terminal ileum into the ascending colon. Mesenteric fat and vessels were also contained in the intussusception. No lead point could be identified. The patient underwent ileocecal resection and ileo-ascending colon anastomosis. Cut section revealed ulcerations in the terminal ileum. The patient recovered well in the postoperative period and was discharged on postoperative day 6. Histopathology revealed ulceration in the terminal ileum and a possibility of typhoid ulcer. Widal test was not suggestive.

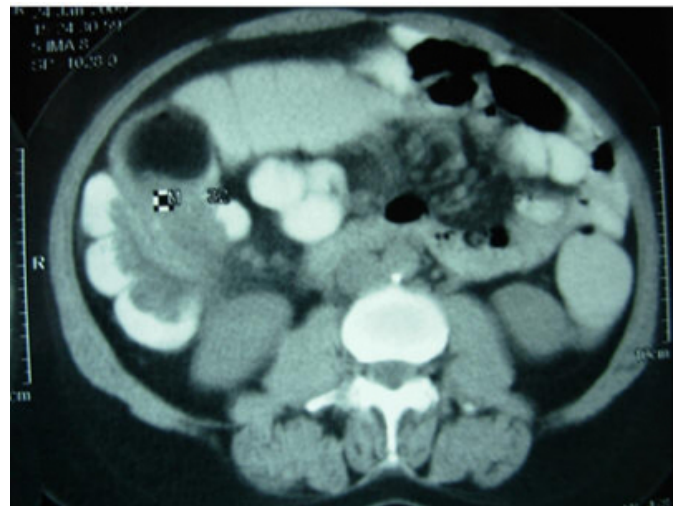
**Case 3**

A 47-year-old female presented with intermittent, crampy abdominal pain associated distension, aggravated by taking meals, for the last 2 months. There was no vomiting, melena or hematochezia. On examination, the abdomen was soft and there was no distension. Rectal examination was normal. Plain abdominal radiographs, baseline blood investigations, chest X-ray and ECG were normal. Ultrasound (USG)

examination of the abdomen showed presence of gallstones. CECT of the abdomen demonstrated colocolic intussusception at the hepatic flexure (figure 3) along with cholelithiasis. Colonoscopy demonstrated a large sessile polyp at the hepatic flexure and colonoscopic biopsy report revealed a hyperplastic polyp. At laparotomy, colocolic intussusception at the hepatic flexure and cholelithiasis was found. The patient underwent segmental colectomy and cholecystectomy. The laid-open specimen showed a 3cm sessile growth at the hepatic flexure (figure 4) and the cut section of the gall bladder showed 2 large stones both more than 2cm in size. The postoperative course was uneventful and the patient was discharged on postoperative day 6. Biopsy revealed submucosal lipoma of colon and chronic cholecystitis.

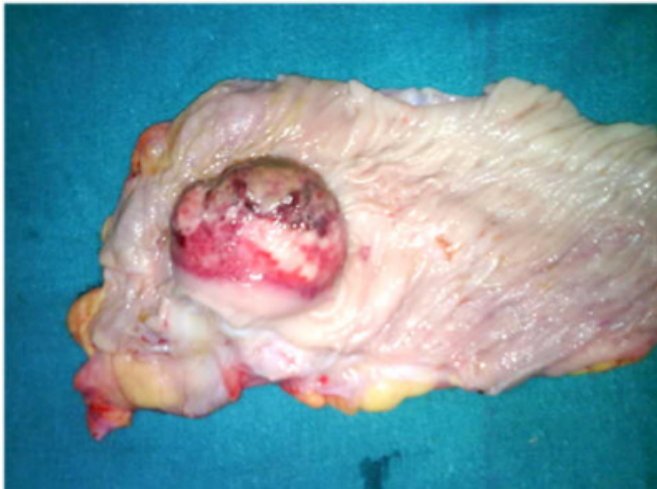
**Figure 3**

CECT abdomen showing intussusception at the hepatic flexure of the colon. The lead point is a lipoma.



**Figure 4**

Laid-open specimen showing a submucosal sessile lipoma at the hepatic flexure



**Case 4**

A 62-year-old man was admitted to our hospital with lethargy, poor appetite, dyspnoea on exertion, intermittent colicky pain in the abdomen and body weight loss of 10kg in the last year. He denied any previous surgical operations and systemic diseases or intake of NSAIDs. Physical examination revealed a normal abdomen with hyperactive bowel sounds. Hemoglobin was 6.6g/dl and WBC 8,500/mm<sup>3</sup>. Stool for occult blood was positive. Renal function tests, liver function tests, carcinoembryonic antigen and urine analysis all were within normal limits. The chest X-ray was normal. Upper GI endoscopy and colonoscopy were normal. 2-D ECHO showed an ejection fraction of 46%. CECT of the abdomen revealed mid-small-bowel intussusception with a polypoidal mass. At diagnostic laparoscopy, jejunoileal intussusception was noted. Proximal to the intussusception, the intestinal lumen was mildly dilated. No enlarged mesenteric lymph nodes were noted. Laparoscopic assisted reduction, segmental resection of the intussuscepted small bowel and stapled anastomosis were performed. The resected segment of bowel was 13cm in length. A solid 4x4cm polypoidal mass projected into the lumen and was covered with focal ulceration of the overlying mucosa. Histology revealed an inflammatory fibroid polyp of the jejunum. The patient recovered well in the postoperative period and was discharged on day five in satisfactory condition.

**DISCUSSION**

Intussusception occurs when a segment of bowel and its mesentery (intussusceptum) invaginates into the downstream

lumen of the same loop of bowel (intussusciens).<sup>1</sup> Sliding of bowel within bowel is propelled by intestinal peristalsis and may lead to intestinal obstruction and ischemia. More than 90% of pediatric intussusceptions are idiopathic and thought to be caused by enlarged nodes associated with an adenoviral infection.<sup>3</sup> Unlike the more common idiopathic intussusception found in children, intussusception in adults remains a surgical disease. Based on a clinical or surgical diagnosis, a demonstrable etiology is found in 70-90% of cases of adult intussusceptions.<sup>2,3</sup> A primary or secondary malignant neoplasm causes approximately 40% of them.<sup>2</sup> All four patients in our case series had demonstrable pathology on laparotomy or laparoscopy and on histology. The causative lead point can be a benign polyp, a lipoma, the appendix, a Meckel's diverticulum or a malignant tumor such as a lymphoma, gastrointestinal stromal tumor, primary or metastatic adenocarcinoma.<sup>2,4,5,6</sup> Clinical presentation of intussusception may vary dramatically, as one would expect, depending on the site of intussusception. Adult intussusception usually has a chronic or sub-acute presentation and is often difficult to diagnose. Symptoms of bowel obstruction are most common, followed by rectal bleeding.<sup>6</sup> An abdominal mass is palpable in 24-42% of patients.<sup>6,7</sup>

Abdominal CECT is the most accurate imaging modality in diagnosis with the pathognomonic appearance of a target or sausage-shaped lesion.<sup>8</sup> More and more experience with computed tomography or magnetic resonance imaging (MRI) has enabled detection of vascular compromise and it has also been suggested that lesions detected by these investigations are more likely to have non-neoplastic causes. Intussusception was diagnosed preoperatively by CECT of the abdomen in all four cases in our case series. Once the diagnosis of intussusception in adults is made, surgical intervention is indicated and surgical resection remains the recommended treatment for nearly all cases, because most of adult intussusceptions have an underlying structural lesion and a relatively high incidence of malignancy. Azar and Berger<sup>4</sup> reported that about half of the enteric intussusceptions were related to underlying malignancies and about half of the other benign enteric intussusceptions were associated with postoperative factors. They proposed that all the patients with colonic intussusception and all the patients with enteric intussusception who have not had a previous laparotomy should undergo resection without initial reduction. Laparoscopically assisted small bowel resection has been reported for small bowel intussusceptions.<sup>9</sup> Three patients in our report had resection without reduction and in

one laparoscopically assisted reduction and segmental resection was done. Initial surgical reduction should be attempted for the cases of enteric intussusception, provided there is no sign of inflammation or bowel ischemia and a malignant lesion is not suspected, to avoid unnecessary excision of healthy bowel.1,10

## **CONCLUSION**

In conclusion, in adult intussusceptions an underlying cause is almost always found. CT scan helps in establishing preoperative diagnosis and treatment usually requires formal resection of the involved bowel segment. Reduction can be attempted in small bowel intussusceptions provided that the segment involved is viable and malignancy is not suspected.

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**Author Information**

**Javid Iqbal, MS Senior Resident**

Department of General Surgery Post Graduate Institute of Medical Education and Research  
Chandigarh, India  
javidiqbal123@gmail.com

**Mahander Pall, MS Senior Resident**

Department of General Surgery Post Graduate Institute of Medical Education and Research  
Chandigarh, India

**Lileswar Kaman, MS, MRCS Associate Professor**

Department of General Surgery Post Graduate Institute of Medical Education and Research  
Chandigarh, India

**Rajinder Singh, MS Professor and Head**

Department of General Surgery Post Graduate Institute of Medical Education and Research  
Chandigarh, India