

## Ileocolic Intussusception in an Adult due to Acute Appendicitis

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### Abstract

Intussusception is a well-recognized clinical entity that has been mainly attributed to pediatric population. Adult intussusception is an extremely rare condition presenting with diverse symptomatology. A high index of suspicion and early diagnosis with a CT scan will identify patients requiring emergent surgery. Present case report describes a patient with presentation of acute appendicitis and ultimately diagnosed to have ileocolic intussusception. Laparoscopic reduction of the intussusceptions and appendectomy cured the condition.

**Keywords:** Intussusception; Ileocolic; Acute appendicitis; Laparoscopic surgery

### Introduction

Intussusceptions, telescoping of one segment of bowel into an adjacent one, are commonly described in infants and rarely in adults. While it accounts for only 1% to 5% of intestinal obstructions in adults [1], almost 90% of cases of Adult Intussusception (AI) have underlying bowel pathology such as carcinoma, polyps, Meckel's diverticulum, colonic diverticulum, strictures, or benign neoplasms, which are usually, discovered intraoperatively [2]. Intussusception is a common cause of bowel obstruction in infants, in whom it presents with a classic triad of symptoms and signs: crampy abdominal pain, a palpable sausage-shaped mass mainly in the right upper quadrant, and currant jelly stools [3]. On the contrary, AI presents with a wide range of symptoms, often with a chronic colicky pain and intermittent partial intestinal obstruction associated with nausea and vomiting [4]. The present case describes a case of ileocolic intussusception, due to acute appendicitis, which was surgically treated with favorable outcome.

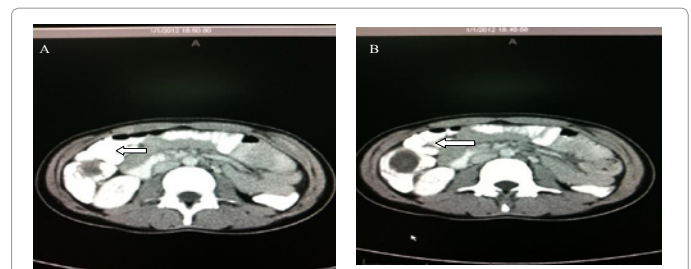
### Case Report

A 17-year-old unmarried girl, not known to have any illness, was admitted through the emergency room with complaint of colicky pain in the Right Iliac Fossa (RIF) and suprapubic areas of 1-day duration. This was associated with a single episode of vomiting and slight nausea with no alteration in bowel habits. Her vital signs; Temp 37.9°C, Pulse 94/min, BP 120/76, and resp. rate 20/min. On examination, she had tenderness in the RIF and suprapubic areas with no rebound and normally audible bowel sounds. Rectal examination was unremarkable. Serum biochemistry, electrolytes, amylase, renal profile, liver function tests were normal and urine pregnancy test was negative. An ultrasound of the abdomen revealed about a 6.2 × 3.5 cm sized bowel mass in RIF, composed of significantly thickened omentum, oedematous caecum and couple of ileal loops; all adherent with each other forming adhesion with the over lying peritoneum. A prominent appendix was noted, measuring 0.5 cm at base and 0.65 at mid portion with minimal periappendiceal free fluid. A CT scan reported a cauliflower sausage like soft tissue mass lesion invaginating in the lumen of the right colon as an intussusception without complete obstruction (Figures 1a and 1b). The part of the ileum entering the mass was mildly distended while the ileal segment distal to the mass was collapsed. The patient was subjected to laparoscopic exploration which demonstrated ileocolic intussusception along with a small amount of free fluid in the peritoneum (Figures 2a and 2b). The appendix was swollen and grossly inflamed which necessitated appendectomy (Figure 3). Post operatively the patient made smooth recovery and was discharged home on the 4<sup>th</sup> day. The histology report confirmed acute appendicitis showing

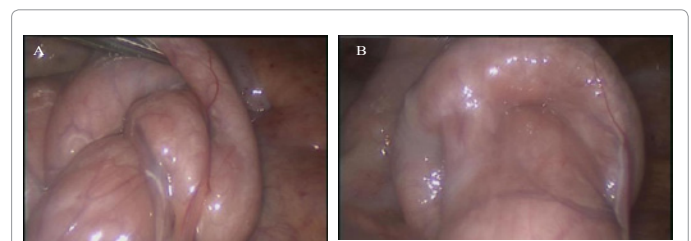
transmural infiltration by acute inflammatory cells mainly eosinophils and few neutrophils.

### Discussion

Intussusception was first described in 1674 by Barbette of Amsterdam [5]. AI may present with acute, sub-acute or chronic non-specific clinical features, posing a diagnostic challenge to the physicians. Our patient presented with clinical features of acute appendicitis and surgical exploration revealed ileocolic intussusception; acutely inflamed appendix being the lead point triggering the invagination of ileum into the ascending colon. The exact mechanism that



**Figure 1:** CT scan with intravenous contrast showing a sausage-shaped soft tissue mass in the right side of abdomen with an eccentric area of fat density.



**Figure 2:** Per operative view of the ileocolic intussusception.

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**Figure 3:** Acutely inflamed and swollen appendix being removed from the abdomen.

precipitates intussusceptions is still unknown, but it is proposed that any lesion in the bowel wall or irritant within the bowel lumen may alter the normal peristaltic pattern leading to an invagination ending up with intussusceptions [6]. Unlike the common idiopathic variety of intussusception in children, AI invariably contains a lead point. Zubaidi et al. [7] reported that 80% of AI was associated with a definable lesion. Twenty-nine percent of enteric lesions were malignant. All ileocolic lesions were malignant of colonic lesions, 33% and 67% were benign. All cases required surgical interventions except one. Meckel's diverticulum is the commonest within a large number of lead points of structural, vascular/hematological, neoplastic, or inflammatory character [8]. Benjelloun et al. [9] described an interesting case of small bowel intussusception with the Meckel's diverticulum after blunt abdominal trauma. The present case report describes AI due to acutely inflamed and swollen appendix. The same cause if intussusception has been previously reported in the published literature [10].

The most common presenting symptoms of abdominal pain, nausea, and emesis in the acute presentation, are observed in only 20 percent of AI [11]. Intermittent abdominal pain and vomiting are the major symptoms of subacute or chronic AI [12]. The classic presentation of paediatric intussusception comprising abdominal pain, mass, blood per rectum, are rarely found in adults. Frequent physical findings include abdominal distention, decreased or absent bowel sounds, guaiac-positive stool, and abdominal mass [13]. Because of the variability in clinical presentation and the confusion experienced in imaging, it is not uncommon that the diagnosis is established only at the time of laparotomy.

The diagnostic armamentarium includes contrast studies which can help to identify the site and cause of the intussusception, particularly in more chronic cases. Upper gastrointestinal series may show "stacked coin" or "coiled spring" appearance [14]. Barium enema examination may be useful in patients with colonic or ileocolic intussusception in which a cup-shaped filling defect is a characteristic finding. Ultrasound done by an experienced sonologist has both high sensitivity and specificity in the detection of AI. Classic findings on transverse scanning include a so-called "target lesion" or "doughnut sign", with the presence of several concentric rings [15,16]. Abdominal CT, with a diagnostic yield of 78%, not only identifies the lesion but also helps in identifying the underlying cause [17]. The CT appearance of AI is often a complex sausage-shaped soft tissue mass with an eccentric area of fat density contained within, which represents the mesenteric fat. The mesenteric vessels may be visible.

Surgery offers optimal treatment of AI. The management strategies depend on the presence of distinct malignancy and the local factors

such as the degree of associated edema, and relative ischemia of the involved bowel [18]. Resection is indicated in cases of large bowel AI, but reduction without resection may be an option in cases of small bowel involvement where the incidence of malignancy is not great and no abnormality of the small intestine is observed [19]. Although, intussusceptions themselves have a good prognosis, it is often the nature of the lesion causing the intussusceptions. Mortality for AIs increases from 8.7% for the benign lesions to 52.4% for the malignant variety [11].

AI remains a clinical challenge to the physicians due to wide spectrum of presentations and etiologies. There is always an identifiable lead point which necessitates surgical intervention.

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