

Adult intussusception: An 8 years institutional review

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ABSTRACT

Background: Intussusception is a rare cause of intestinal obstruction in adults. Its diagnosis could be elusive based solely on clinical features because of protean presentation. Supplementary imaging allows for preoperative diagnosis, early institution of definitive management, and a better clinical outcome. **Patients and Methods:** Records of adults managed for intestinal obstruction by laparotomy in a surgical unit of a tertiary health facility were retrospectively examined. The subgroup having an intraoperative diagnosis of intussusception was extracted and analyzed. Data obtained included age, sex, and primary symptom at presentation. Presence of intestinal perforation, the histology of the lead point of resected tissues, and the final disposition of the patients were documented. **Results:** Four hundred and three patients underwent surgical management of intestinal obstruction. Eight patients (2%) had an intraoperative diagnosis of intussusception at laparotomy; four males and four females (male: female = 1:1). Abdominal pain was the presentation in 7 (87.5%) and anal protrusion in 1 (12.5%). Four patients (50%) had bowel perforation with peritonitis. Seven of the resected intestines had lead points which were benign. Two patients (25%) died from sepsis. Resection and anastomosis were done for all the patients. **Conclusion:** Intussusception in adults is uncommon but carries a high morbidity and mortality which can be reduced with a good clinical assessment, appropriate imaging, and early laparotomy.

Key words: Appropriate imaging, exploratory laparotomy, intussusception

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INTRODUCTION

Intussusception is infrequently encountered in adult surgical practice¹⁻³ and is not a strongly considered differential diagnosis in adults presenting with features of acute abdomen.⁴ Its protean manifestations could easily lead to diagnostic and therapeutic delays and a worsened prognosis from fluid and electrolyte imbalance, intestinal perforation, and sepsis. It is in most instances considered a surgical disease because the definitive diagnosis is made at laparotomy although this concept is evolving^{4,5} with wider access to and application of modern imaging modalities in managing nonspecific abdominal pain.

Ultrasound (US) scan, computed tomography (CT), or magnetic resonance imaging (MRI) easily provides clues to the diagnosis of intussusception preoperatively.^{1,5} However, in low-resource settings, the diagnosis of

intussusception is often made intraoperatively because these imaging modalities are not available or are malfunctioned. We present our experience managing adult intussusception in our institution over 8 years period.

PATIENTS AND METHODS

We retrospectively documented information of patients 18 years and older who presented with acute intestinal obstruction and underwent exploratory laparotomy in a general surgery service from January 2007 to December 2015. Those with an intraoperative diagnosis of intussusception were extracted for analysis. Data on age at presentation, sex, primary presenting feature,

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intraoperative findings, and diagnosis as well as pathological type of intussusception was recorded. The presence of intestinal perforation(s) and peritonitis, as well as the final outcome of treatment and disposition, was also recorded.

Data analysis was done using SPSS 17 for windows (SPSS Inc. Chicago, IL, USA) and results presented as simple percentages and tables.

Approval to conduct the study was sought and obtained from the Institutional Ethical Review Board.

RESULTS

A total of 403 patients were operated for intestinal obstruction during the period. Eight patients (2%), comprising 4 females and 4 males (male: female = 1:1), had an intraoperative diagnosis of intussusception [Table 1].

Abdominal pain was the primary presenting feature in 7 (87.5%) patients. Four patients (50%) had ileoileal intussusception, 3 (37.5%) ileocolic, and 1 (12.5%) had colocolic type. Most cases had pathological lead points; the colocolic type presenting through the anus. Intestinal perforation with resultant generalized peritonitis occurred in 4 patients (50%); two of whom died from sepsis; a mortality rate of 25%.

Resection with primary end-to-end anastomosis was the procedure undertaken in all cases. Histology of the lead points showed 4 adenomas (50%) and 2 lipomas (20%).

Table 1: Clinical and pathological characteristics of adults presenting with intussusception

Characteristic	Frequency (%)
Age (Yrs)	
18-24	1 (12.5)
25-31	3 (37.5)
32-38	0 (0)
39-45	1 (12.5)
46-52	2 (25.0)
>53	1 (12.5)
Sex	
Male	4 (50)
Female	4 (50)
Type	
Ileo-ileal	6 (75.0)
Ileo-colic	1 (12.5)
Colo-colic	1 (12.5)
Lead point	
Present	6 (75.0)
Absent	2 (25.0)
Histology	
Adenoma	4 (50.0)
Lipoma	2 (25.0)
Missing	2 (25.0)

One specimen was autolyzed and was lost to analysis, and another showed no lead point.

DISCUSSION

Intussusception is the invagination of a proximal loop of intestine along with its mesentery into a distal aspect, propagated by peristalsis. It is a very rare cause of intestinal obstruction in adults^{1,6,7} and is associated with heightened morbidity and mortality from complications; this is unlike the childhood disease which is rather common and easily treatable.⁸ The adult disease accounts for approximately 3-5% of all cases of intussusception³ and is often associated with an organic lesion forming the lead point.^{3,9}

Reports of adult intussusception exist in Nigeria. The colocolic variety was frequently reported from the University College Hospital, Ibadan, but recent reports from the institution consider it to be rare.¹⁰ Similarly, reports from Kano¹¹ (North Central) and Ile-Ife¹² (South West) Nigeria attest to the rarity of this condition. We routinely manage intussusception in children and have no reports of disease in adults. Our index of suspicion of the condition in adults was very low until recently when we started receiving and managing patients presenting with features of intestinal obstruction of unknown primary cause who at laparotomy had a diagnosis of intussusception.

Intussusception is reported to occur frequently in adults with HIV infection or AIDS;¹³ the enlarged intra-abdominal nodes or other HIV/AIDS-associated tumors likely forming the lead points. The prevalence of HIV infection is high among patients presenting in our practice, but we could not establish a causal relationship between HIV and AIDS in any of the adults we managed for intussusception.

Acute abdominal pain was the common presentation of intussusception; the pain was typically colicky, intermittent, and of varying intensity at onset with no specific features differentiating it from that due to other known causes of intestinal obstruction in adults. The pain is documented to vary in intensity depending on the location of the intussusception as well as its tendency to undergo spontaneous reduction.^{1,4,13} Indeed, our first patient presented with episodic pain lasting 8 months which often resolve spontaneously and no specific diagnosis could be made until when he presented in the emergency room in acute pain which warranted exploration. Subacute and chronic abdominal pain can also be the primary presenting feature.^{3,4}

Upon intestinal perforation with consequent peritonitis, the abdominal pain characteristically becomes constant, associated with features of sepsis which was very common with patients in our series. Perforation is a late complication of intussusception and a common cause of morbidity and mortality. Late presentation, the absence of functional ambulance services to transport patients to

the referral hospitals and delays in definitive diagnosis or instituting therapy were definite risk factors for perforation in our patients. The presence of peritonitis led to a marked deterioration in patient's health from dehydration and sepsis, resulting in two deaths.

Nausea or vomiting is not invariable in adult intussusception but was present in all patients. A palpable abdominal mass is a rare feature in adult intussusception,^{4,14} only one of the patients was referred on account of an abdominal mass though we could not palpate same at presentation due to the marked abdominal distension and tenderness which impaired adequate palpation.

Presentation of intussusception as a prolapsed anal mass is even rarer, and the single patient presenting this way was initially diagnosed with a rectal prolapsed, but the abnormally long length of bowel involved necessitated further review. Weight loss, increasing age and anemia are ominous signs in adults with intussusception; these features strongly suggest the presence of a malignant lead point.¹⁴

US scan, CT, and MRI have remarkably improved the preoperative diagnostic accuracy of intussusception. The absence of US scan at the point of care in our facility is a major deterrent to its routine application in managing the acutely ill requiring urgent laparotomy, whereas CT was only recently available in our institution. We, therefore, emphasize plain abdominal radiogram and early laparotomy in acute abdominal pain with clinical evidence of intestinal obstruction in our practice.

Features of intussusception on CT are an intraluminal mass with an eccentric fat density (target lesion), a sausage-shaped mass with alternating areas of low and high attenuation, and a kidney bean-shaped mass.^{2,15} Multiplanar reconstruction of the image allows for better accuracy of diagnosis and provides information on the vascularity of the bowel segment and so assists in determining the primary method of therapy.^{2,16} In a review of images and clinical records of patients, Warshauer and Lee¹⁷ found approximately 50% of intussusception to be enteroenteric, nonneoplastic, idiopathic, and self-limiting. These lesions were thought to reflect transient changes in bowel motility, and they suggested that not all CT or MRI diagnosed intussusception require aggressive workup.

Pathological types of intussusception include the ileocolic [Figure 1], ileoileal [Figure 2], and colocolic [Figure 3], with the latter having a tendency of having a malignant lead point. Although the ileocolic type is most common, we noted a preponderance of the ileoileal variety among our patients. All but one of the resected intestines had benign lead points. This fits the general pattern of the disease in adults. One patient developed intussusception within a



Figure 1: Ileo-colic intussusception. A sausage shaped mass formed by the terminal ileum entering the caecum and ascending colon



Figure 2: Ileo-ileal intussusception with dilatation of the proximal loop of intestines

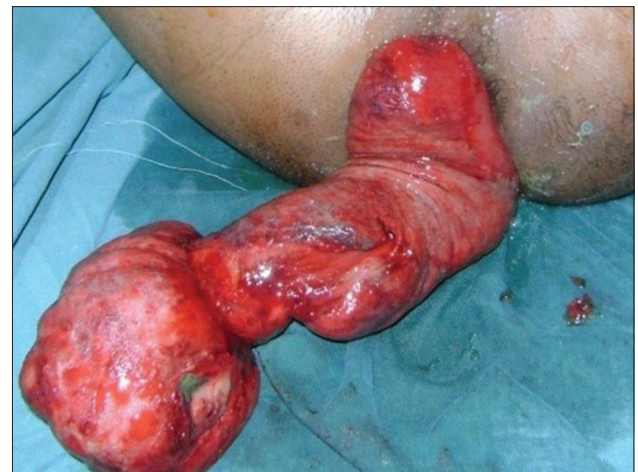


Figure 3: Colo-colic intussusception protruding through the anus

week of undergoing a Cesarean section and no lead point or possible cause could be identified intraoperatively.

The optimal treatment for adult intussusception is not established. An urgent exploratory laparotomy is strongly recommended⁵ as it serves diagnostic as well as therapeutic purposes. Bowel perforation may occur during reduction of the intussusception;⁴ however, since most small bowel intussusception is benign, reduction could be attempted. We universally adopted resection and anastomosis in all the cases because of perforations or difficulty at reduction arising from tissue edema. *En bloc* resection is usually reserved for colonic disease because of its higher risk of bearing a malignant lead point.^{9,18} Nonoperative reduction is not an option with adults because of the suspicion of malignancy.

CONCLUSION

Intussusception is a rare cause of intestinal obstruction in adults associated with a high morbidity and mortality from peritonitis following delayed diagnosis and treatment. Early suspicion and exploratory laparotomy are lifesaving, and the definitive procedure is determined by the pathological type.

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Conflicts of interest

There are no conflicts of interest.

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