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Adult Intussusception in a Referral Hospital in Sub-Saharan Africa: Case Report and Literature Review

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

Introduction: Adult intussusception is a rare form of bowel obstruction which constitutes less than 5% of all cases of intussusception. In Sub-Saharan Africa, adult intussusception is not a rare cause of bowel obstruction. It is usually caused by a lead point which may be malignant in up to 50% of cases unlike childhood intussusceptions which are usually idiopathic. The author reports on a case of intussusception followed by a literature review on the pathogenesis and treatment options for intussusception in Sub-Saharan Africa.
Presentation of Case: A 46 year old gentleman presented with nonspecific abdominal symptoms mainly with epigastric pain associated with vomiting. No palpable masses were felt in the abdomen. Laboratory investigations were unremarkable. At laparotomy an ileo-ileal-caecal intussusception was found and when reduced 30 cm of ileum resulted gangrenous. A limited resection of the small bowel with end-to-side anastomosis involving the viable ileum and ascending colon was carried out. A lobulated lipoma was the pathological lead point on inspection of the ileum in the resected specimen.
Discussion: The atypical clinical features and pathogenesis of adult intussusception are described in the case presented. In addition, this study reviews the literature regarding the pathogensis, clinical features, diagnostic imaging modalities and treatment options of adult intussusception.
Conclusions: Patients with long standing abdominal pain and vomiting should have an abdominal CT scan to achieve a clear diagnosis of intussusception. This will avoid any unnecessary delays in the operative management of this condition.

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Keywords: AI–adult intussusception; pathological lead point; Sub-Saharan Africa.

1. INTRODUCTION

In 1674 intussusception of the bowel was first defined by Barbette and in 1871 Jonathan Hutchinson was the first to operate on a paediatric patient with intussusception [1]. Telescoping of a proximal part of the bowel towards the distal part of the bowel loop defines intussusception. In developed countries intussusception accounts for 1-3% of all bowel obstructions [2,3]. In adults, intussusception is uncommon and accounts for only 5% of all intussusceptions [3]. A demonstrable cause such as a colonic tumour or a benign or a malignant polyp is responsible for the majority of cases in adults [4]. In children intussusception is more frequently a cause of intestinal obstruction [5].

Abdominal pain and vomiting is the commonest presentation of patients attending hospital [6]. The diagnosis of intussusception in the adult patient can be delayed or even missed due to the nonspecific symptoms of intussusception [7]. About half of all cases of intussusception are diagnosed intraoperatively [8]. Ultrasound and CT scanning may be helpful diagnostic tests to detect this surgical pathology [9,10]. The most sensitive method of diagnosis of an intussusception preoperatively is an abdominal CT scan. In this paper the author presents an atypical presentation of adult intussusception who presented to a Referral Hospital in Sub-Saharan Africa followed by a literature review.

2. CASE REPORT

A 46 year old gentleman presented to Masaka Regional Referral Hospital with a two month history of vomiting and generalised abdominal pain. The pain was intermittent and colicky in nature however more marked in the epigastrium. The vomiting occurred after ingestion of food. He was passing flatus without a history of abdominal distention. The anamnestic data reported no rectal bleeding, haematemesis or jaundice. No family history of bowel obstruction was given by the patient.

On examination the patient had pallor and dry mucous membranes. Air entry was equal and bilateral in both lung fields with normal heart sounds. The abdomen was tense particularly in the epigastric region. No palpable mass was detected in the abdomen and there was no rebound tenderness nor guarding. Normal bowel sounds were present.

Laboratory tests were all in normal range. Plain abdominal X-ray revealed distended small intetine with multiple air-fluid levels. An abdominal ultrasound revealed no specific findings except for a small fluid collection. The differential diagnosis included peptic ulcer disease, acute pancreatitis and small bowel obstruction. Conservative management was initially carried out but was unsuccessful. A laparotomy, by means of a midline abdominal incision, dilated small bowel involving the terminal ileum and an ileo-ileo-caecal intussusception were found. The telescoping started approximately 60cm from the ileocaecal junction and extended to the ascending colon. The small bowel was reduced from the ascending colon and approximately 30cm resulted gangrenous. Good viability of the rest of the small bowel, caecum and ascending colon was found. A limited resection of the gangrenous small bowel and an end-to-side anastomosis involving ileum and acsending colon was carried out with good end result (Fig. 1). Gross examination and histopathology of the small bowel revealed a lipoma in the wall of the ileum (Fig. 2). The postoperative course was uneventful.

3. DISCUSSION

Compared to the paediatric form of intussusception which is much more frequent, AI accounts for only 5% of all bowel obstructions. The mechanism is believed to be an alteration in the normal peristaltic activity due to a lesion in the bowel wall. Studies from Sub-Saharan Africa have shown that intussusception occurs in the second and fourth decades [11]. Some studies have shown a male predominance with a male:female ratio of 1.85:1 [3,12]. Other authors have documented reciprocal findings [13]. The clinical presentation and in particular the symptoms of intussusception are largely non-specific and tend to be mainly due to partial bowel obstruction [14]. Several studies have shown that abdominal pain, nausea and vomiting are the most common symptoms [15-17]. Other non-specific signs and synptoms reported include a change in bowel habit, diarrhoea, constipation, haematochezia and abdominal distention [18,19]. Individual case reports have shown anal protrusion as a rare clinical feature [20].

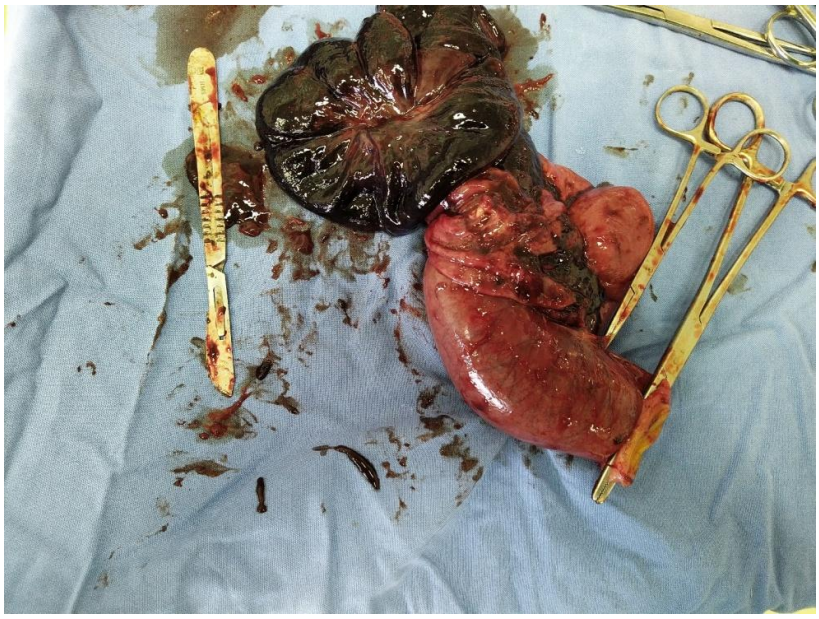

Fig. 1. Gangrenous part of ileum reduced from the viable part of ileum and resection carried out

Fig. 2. Ileum showing the lobulated lipoma lesion which was the cause of the adult intussusception

In 24-42% of patients abdominal masses are palpable [3,17,21]. The vast majority of studies have shown that a pathological lead point is responsible for AI in up to 93% of cases [3]. The most commonly involved site is the ileocolic area followed by the small intestine alone.

The contribution of malignant lesions to the overall intussusception burden is between 36-46.6% [3,15,22]. In ileocaecal/ileocolic intussusception Wang et al., as reported up to 42% of patients having a malignant lesion in this type of intussusception [23]. 85% of colonic

lesions were adenocarcinomas which were pathological lead points [24]. Marinis et al has reported that up to 66% of intussusceptions occur in the colon and are due to malignancy [5,13]. Benign tumours which include adenomas and lipomas which present in ileocolic and colocolic types of intussusception are prevalent in 25% and 18.2% respectively [22]. Lipomas constitute 2.6% of nonmalignant tumours of the intestinal tract [25]. In elderly patients there is an increased incidence of intestinal lipomas [26]. Lipomas occur more commonly in the colon in up to 75% of cases compared to the small intestine which is involved in up to 25% of cases. The commonest site for lipomas in the small bowel is in the terminal ileum [27].

Intermittent abdominal pain, bleeding or diarrhoea and bowel obstruction may be caused by lipomas larger than 2cm in diameter. Nonspecific obstructive symptoms like abdominal pain, nausea and vomiting may be the presentation in AI. Non specific symptoms such as as constipation, diarrhoea, malena and an abdominal mass may also be present [3]. The aetiology is a malignancy in up to 20%-50% of AI [28,29].

Suspected cases of intussusception may be investigated using ultrasound which is noninvasive and cheap. The typical features are a “pseudokidney sign” on longitudinal view and the “target and doughnut sign” on transverse view. The diagnostic accuracy of ultrasound is 86.6% in the presence of a palpable mass [30]. A diagnostic accuracy of 58%-100% has been observed with an abdominal CT scan. Lipomas tend to have a well-circumscribed, homogenous texture and are round with sharp margins on CT scan. A mass like lesion with an inner intussusceptum and an eccentric fat density due to mesenteric fat and an outer intussuscepiens appears as a “target” or “sausage” mass on CT scan. The cause of bowel obstruction, site and the presence or absence of bowel ischaemia may be detected on a CT scan [31].

A low frequency of gangrene of up to 6.8% is observed in intussusceptions. A low frequency of gangrene is observed in more chronic symptom presentations of adult intussusceptions [22]. The diagnosis is commonly made at laparotomy due to the variability in clinical presentation and the different forms of diagnostic imaging [17]. In the author’s case the patient did not have an abdominal CT scan and therefore intussusception was diagnosed at laparotomy. CT scanning is a very sensitive and specific investigation to make an early diagnosis and plan management.

In the treatment of AI, laparotomy is mandatory due to the majority of cases having underlying pathology. It remains controversial in adults whether or not reduction of the intussusception should be carried out before resection. Reductions are associated with perforation with a risk of venous dissemination and intraluminal seeding of neoplastic cells. The manipulated oedematous and friable bowel is at an increased risk of anastomotic leakage [5,15,30,32]. If one suspects the lead point to be malignant or if without reduction, the resected area is not extensive, then en bloc resection of the intussusception is considered. Formal resections using the correct principles of oncology should be carried out for ileocolic, ileocaecal and colocolic intussusceptions. A primary anastomosis may be carried out between the viable bowel ends [8,17,18]. Resection and primary anastomosis can be carried out for right sided colonic intussusceptions on unprepared bowel. However a Hartmann’s procedure is recommended especially in emergencies for left sided or rectosigmoid cases of intussusception. In very selected settings colonic lipomatous polyps may be endoscopically resected [27].

Manual reduction cannot be carried out in cases of chronic intussusception because of scarring due to fibrosis and bowel wall thickening within the intussusceptum [20]. Idiopathic cases of intussusception may be treated by reduction alone if the bowel is viable and non-ischaemic [13]. Benign lesions causing intussusception are treated by reduction, limited resection and primary anastomosis.

Most authors have reported no postoperative mortality [15,20,22] following laparotomy for intussusception.

4. CONCLUSION

Due to the nonspecific symptoms of presentation, diagnosis of intussusception remains challenging. The authors’ patient presented with epigastric pain and not with signs of intestinal obstruction. In these cases preoperative diagnosis may be delayed or missed due to the nonspecific symptoms of presentation lacking the classic pathological triad of paediatric patients. The most sensitive imaging modality of choice for the diagnosis of

intussusception is the abdominal CT scan. The CT scan can distinguish the abscence or the presence of a pathological lead point. In adults, intussusception is normally associated with a malignant lead point and therefore resection of the involved bowel is necessary. In small bowel intussusceptions, if the segment is viable and no mass is present, then sole reduction may be resolutive. In the majority of cases, intussusception is only diagnosed at laparotomy and therefore surgeons should be aware of the different treatment options.

CONSENT

The author declares that written and informed consent was obtained from the patient for publication of this case report.

ETHICAL APPROVAL

As per international standard or university standard, ethical approval has been collected and preserved by the author.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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