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Case Report

A Case of Gangrenous Prolapsed Ileo-Colo-Colic Intussusception in a Woman with Intestinal Malrotation

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Abstract

Intussusception in adults is rare. Prolapsed intussusception is described as the protrusion of the top of the intussusception from the anus and accounts for 8%-29% of intussusceptions. Here, we present a case of gangrenous prolapsed ileo-colo-colic intussusception in a 40-year-old-woman with intestinal malrotation. The patient presented to our hospital with a complaint of protruding mass per rectum that increased in size progressively, of 3 days duration. She had also colicky abdominal pain, distension, frequent vomiting of bilious matter, fever, chills, and rigors. She was acutely sick looking in pain; unrecordable blood pressure, tachycardic; abdomen was grossly distended and tender, with visible peristaltic bowel loops. There was visible darkly discolored loop of large bowel that has prolapsed about 10 cm from the anal verge. Patient underwent emergency laparotomy with reduction of the prolapsed colon, resection of the gangrenous bowel segments, Ladd's procedure and end ileostomy, and had smooth post operative outcome.

Keywords: Intussusception; Intestinal malrotation; Prolapsed intussusception

Introduction

Intussusception in adults is rare. It is estimated to account for only 5% of all intussusceptions and causes only 1%-5% of all bowel obstructions in adults [1,2]. While it is considered a primary and benign condition in children, in 90% of adult cases it is secondary to a pathological condition or structural trigger [3-5]. Intestinal malrotation has been postulated as a possible cause in some infants. Waugh's syndrome is the association of intestinal malrotation with intussusception [6,7]. In the pediatric population, there are several reports of malrotation with intussusception, but this combination is very uncommon in adults [6-8]. If left untreated, intussusception can cause severe complications, which include irreversible tissue damage, perforation of the bowel, and prolapse.

Prolapsed intussusception is described as the protrusion of the top of the intussusception from the anus and accounts for 8%-29% of intussusceptions [9,10]. Here, we present a case of gangrenous prolapsed ileo-colo-colic intussusception in a 40-year-old-woman with intestinal malrotation, who was managed successfully with surgery. Our case is unique in that it is a case of gangrenous prolapsed intussusception that occurred in an adult patient with malrotation.

Case Presentation

A 40-year-old woman presented to our hospital with a chief complaint of protruding mass per rectum that increased in size progressively, of 3 days duration. She had also colicky abdominal pain and distension, since the illness. A day before her arrival to our hospital, she developed frequent vomiting of bilious matter, fever, chills, and rigors. She had long standing constipation before her current illness. On physical examination, she was acutely sick looking in pain; blood pressure was unrecordable initially, pulse rate-120/min; on HEENT examination, she had dry buccal mucosa; abdominal examination showed grossly distended and tender abdomen, visible peristaltic bowel loops, palpable mass in the left lower quadrant of the abdomen; on per-rectal examination, there was visible darkly discolored loop of large bowel that has prolapsed about10 cm from the anal verge, examining digit can go between the protruding mass and the anal canal (Figure 1A and B). With the impression of gangrenous prolapsed colocolic intussusception, double intravenous line was secured and patient given 3 bags of normal saline and her blood pressure raised to 90/60 mmHgh, nasogastric tube and transurethral catheter inserted, intravenous ceftriaxone & metronidazole given, written informed consent obtained, and finally she was urgently taken to the operating theatre. Patient was put on semi-lithotomy position, peritoneal cavity enterd *via* midline vertical laparotomy incision. Intraoperative finding was: right side of the abdomen was empty occupied only with small bowel instead of cecum & ascending colon; the distal ileum, appendix, cecum, ascending colon, and transverse colon have invaginated in to the rectum (Figure 2). What was done was, invaginated distal ileum and cecum were reduced manually, but it was difficult to reduce the rest of the invaginated colon. Therefore, transverse incision was made over the rectum (Figure 3A), those structures are brought back (reduced) gently, and prolapsed gangrenous bowel reduced digitally to the abdominal cavity. Ileocecal junction and appendix were found in the upper mid-abdomen with very narrow and mobile mesentery suggesting incomplete rotation of the bowel (Figure 3A). There was also Ladd's band (Figure 3B). After reduction, the ascending colon, transverse colon, and descending colon were found gangrenous, & resection of those gangrenous bowel and cecum was made. Ladd's band was also divided. The descending colon was closed in double layers, and distal ileum exteriorized as end ileostomy. Transverse rectal incision was closed. The whole bowel was

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examined for any pathologic leading point, but there was no gross mass lesion found.

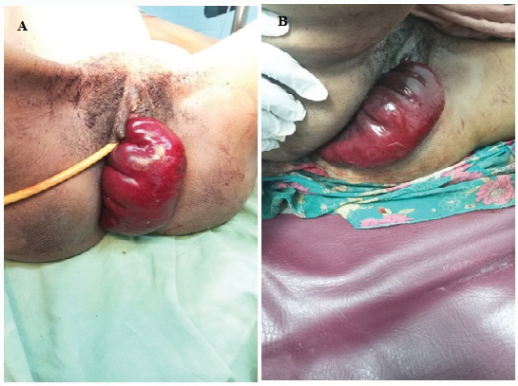

Figure 1: Darkly discolored loop of large bowel prolapsed through the anus.

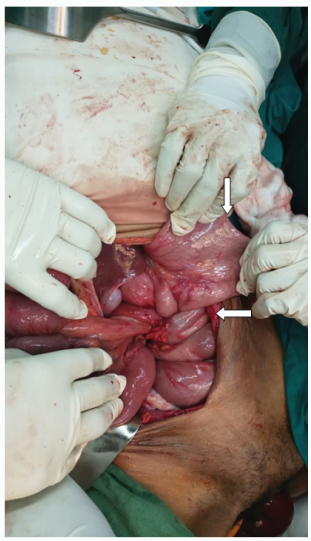

Figure 2: Distal ileum, appendix, cecum, ascending colon, and transverse colon seen invaginated through rectum (left arrow), and the stomach is seen pulled by the invaginated transverse colon and greater omentum (down arrow).

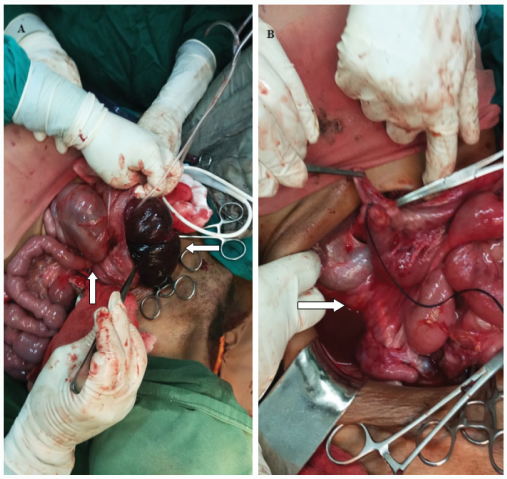

Figure 3: A) Gangrenous colon seen through the transverse rectal incision (left arrow), and manually reduced ileocecal junction seen occupying the upper mid-abdomen (up arrow) (B) Ladd's band before it is divided (right arrow).

Post operative patient condition was smooth and she was discharged with good condition. Three months after the initial surgery, reversal of the ileostomy was done and patient had smooth postoperative outcome.

Discussion

Intussusception in adults is rare, representing 1% of bowel obstructions and 5% of all intussusceptions [3,9]. While the cause of intussusception is idiopathic in 90% of children, more than 90% of cases of adult intussusception is related to an identifiable mechanical lead point such as luminal polyps, benign tumors/masses, malignant tumors, enteric duplication cyst, and Henoch-Schonlein purpura [4,5]. In the pediatric population, there are several reports of malrotation with intussusception, but this combination is very uncommon in adults [6]. The presence of abnormally placed gut loops with narrow mesentery along with unfixed and mobile cecum and ascending colon in malrotation might be a precursor for intussusception. Brereton et al. named this association of intussusception and malrotation as Waugh's syndrome and suggested that malfixation of the ileocecal mesentery is a leading factor in allowing intussusception. Zavaras et al. [7] had incriminated the possible role of the freely mobile ileocecal junction as a principal factor of chronic intussusceptions. This association may be more common than reported in the literature [8]. We believe that in our case, the mobile right colon would have predisposed the patient for intussusception.

In our case the intussuscepiens was able to navigate the colon to prolapse through the anal canal with gangrenous change of the prolapsed colon. This is a very rare complication of intussusception seen in long standing intussusceptions where diagnosis have been delayed in patients with background mobile right side colon due to non fixity of cecum and ascending colon [4].

Our patient has stayed at home for 3 days and this delayed presentation might explain the prolapse and ischemic change of the prolapsed bowel.

Surgery is the treatment of choice for intussusception in adults. In the presence of gangrene or strangulation, like our case, primary anastomosis may not be feasible and stoma with mucous fistula is needed [6]. Patients also need Ladd's procedure to decrease the risk of volvulus [6]. Our patient underwent division of the Ladd's band, appendectomy and resection of the gangrenous colon with end ileostomy.

Conclusion

The presence of mobile right colon and redundant bowel loops with narrow mesentery in case of malrotation might be an important factor leading to intussusception. Delayed presentation in a patient with intussusception will result in prolapse of the intussuscepiens through the anus with ischemia of the bowel, just like our case, necessitating bowel resection and possible stoma formation.

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