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PROLAPSE: CASE REPORT AND NOVEL SURGICAL APPROACH**

INTUSSUSCEPTION COMPLICATED BY IRREDUCIBLE GANGRENOUS COLOANAL PROLAPSE: CASE REPORT AND NOVEL SURGICAL APPROACH

Olajide TA¹, Aremu SK², Adumah CC³, Achebe CC⁴, Ajetunmobi WA⁵

1. Department of Surgery, Federal Teaching Hospital, Ido-Ekiti/Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria
2. Department of ENT, Federal Teaching Hospital Ido-Ekiti/Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria.
3. Paediatric Surgery Unit, Surgery Department, Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife, Osun State, Nigeria.
4. Radiology Department, Federal Teaching Hospital Ido-Ekiti/Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria.
5. Pediatrics Department, Federal Teaching Hospital Ido-Ekiti/Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria

Correspondence to: Aremu SK, Department of Ear Nose and Throat, College of Medicine and Health Sciences, Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria. **Telephone:** +2348033583842;

E-mail: aremusk@abuad.edu.ng

ABSTRACT

Introduction: Childhood intussusception is a common cause of intestinal obstruction in infants and children. Late presentation may be associated with the intussusceptum protruding through the anus, which may be misdiagnosed as rectal prolapse. Most anal prolapses due to intussusception are reduced at laparotomy when they present early.

Case Reports: Two cases with similar presentations were managed. The first was an 11-month-old boy who was referred from a neighboring health facility as a case of irreducible rectal prolapse. The anal protrusion was noticed about 12 hours before presentation at the referring center. The second patient was 7-month-old at presentation. Both were managed successfully with the same surgical approach.

Conclusion: The surgical approach used in the management of these two cases will be beneficial, especially when the conventional method fails.

Keywords: Intussusception; Gangrene; Coloanal prolapse; Surgery

INTRODUCTION

Intussusception is the telescoping of a bowel segment into the adjacent segment. It is one of the most common causes of surgical emergencies in early childhood.¹ Early presentation, diagnosis, and management prevent major complications that might be associated with childhood intussusception. Late presentation may result in bowel gangrene, perforation and anal prolapse also called trans-anal protrusion of intussusception.¹

Prolapsed intussusception is a unique complication of intussusception in children and usually occurs when the normally retroperitoneal ascending and descending colons are freely mobile being completely peritonealized with long mesenteries. Surgical approaches to prolapsed intussusception range from less invasive procedures such as pneumatic or hydrostatic reduction to more invasive procedures such as manual reduction or resection and

anastomosis.² Usually, resection and anastomosis are done trans-abdominally, however, in this article, we highlight our experience with two cases of prolapsed intussusception with gangrenous bowel which could not be reduced manually through an abdominal approach. Our surgical approach in managing the cases is discussed.

CASE PRESENTATION

Case 1: An 11-month-old boy was referred from a neighboring health facility as a case of irreducible rectal prolapse. The anal protrusion was noticed about 12 hours before presentation at the referring center. An attempt at reducing the anal protrusion by the referring doctor was unsuccessful. The protrusion was preceded by a week history of paroxysmal unconsolable cry with passage of watery stool. There was associated vomiting and the child had not passed stool for four days before presentation. He also had associated high-grade fever.

Examination revealed a malnourished, pale, febrile, and dehydrated child. The abdomen was scaphoid with a palpable mass in the left iliac fossa region. Rectal examination revealed a huge anal prolapse with a dusky apex. There was a surrounding sulcus, the apex of which cannot be palpated per rectum (Figure 1).



Figure 1: Huge anal prolapse with a dusky apex and surrounding sulcus

The child was resuscitated. Laparotomy was performed through a low infra-umbilical incision. At surgery, we found an ileocolic intussusception with ileocoloanal protrusion. Attempt to reduce the intussusceptum through the abdominal incision proved abortive (Figure 2).



Figure 2: Laparotomy revealing ileocolic intussusceptions with ileo-colo-anal protrusion

The prolapsed sigmoid colon was opened in the ante-mesenteric border of the intussusception and the viable part of the intussusceptum was manually mobilized and transected in between two vicryl 2 ligatures. The distal segment of the intussusceptum was delivered through the anal canal (Figure 3) while the proximal segment was reduced by milking it out of the intussusception. The ileo-colic anastomosis was done while simple closure of the sigmoid incision was also done followed by saline peritoneal lavage. The postoperative period was uneventful and the child was discharged on the fifth postoperative day.



Figure 3: Distal segment of intussusceptum

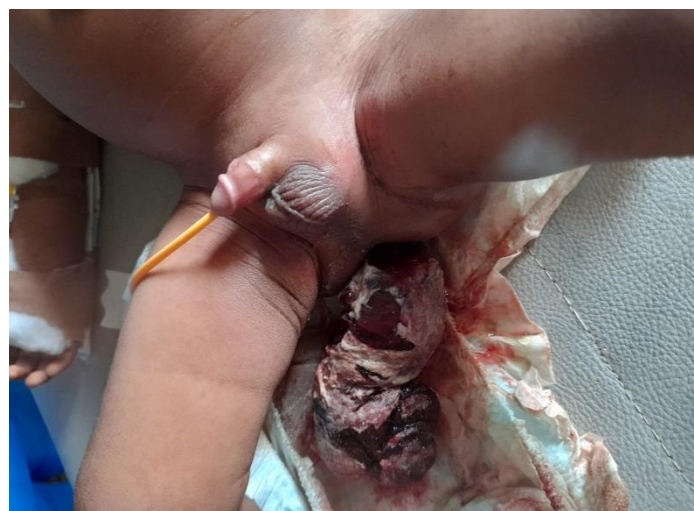


Figure 4: Prolapsed intussusception

Case 2: A 7 month old child was referred from a private hospital with four days history of excessive unconsolable cry, two days history of fever and bilious vomiting. The anal protrusion was noticed about twenty-four hours before presentation at our facility. Examination revealed an acutely ill-looking, pale and dehydrated child. The chest was clinically clear. The abdomen was scaphoid with left iliac fossa mass and was not tender. The bowel sound was hypoactive. The perineum revealed a gangrenous anal protrusion with an unending sulcus between the protruding bowel and the anorectal wall (Figure 4). Radiological investigations were not done because the clinical evaluation was in keeping with prolapsed intussusception. The child was resuscitated with fluid, blood transfusion and broad spectrum antibiotics. Electrolyte derangement was corrected. He had laparotomy under general anaesthesia through a left infraumbilical transverse incision. We did colotomy of the intussusceptum, delivered the intussusceptum through the colotomy and transected it in-between two vicryl 2 ligatures.

The first patient was discharged from the clinic after three years of follow up with no complaint. The second patient is still on follow up visit after two years of surgery. He occasionally has intermittent colicky abdominal discomfort which is managed conservatively.

DISCUSSION

Prolapsed intussusception is defined as the invagination of an intestinal segment into the segment adjacent to it, with exteriorization of the apex of the of the intussusceptum through the anus.¹ In the UK, the incidence is approximately two per 1000 live births. Prolapsed intussusception is a rare presentation in the developed world.¹ This is not so in developing countries where the incidence ranges from 16%-29% with mostly late presentation.^{2,3} The overall mortality from intussusception in our environment ranges between 6.2% and 25%.^{4,5,6} This high mortality can be attributed to late presentation and the metabolic stress of open surgery on these sick children who have poor physiologic reserve.⁵

Sometimes delay in diagnosis also contributes to the mortality in the case of prolapsing intussusception.³ This was the case in our first patient who was initially mismanaged as a case of rectal prolapse before being referred to our center. The major concern is to differentiate protruding intussusception from rectal prolapse. The protrusion must be carefully examined to avoid confusion and misdiagnosis. One report noted that delay in diagnosis was due to inadequate assessment of the protruding intestine at the anal orifice.⁷

By far the most important differentiating feature in prolapsed intussusception (but often ignored and taken for granted) is the demonstration of a deep and unending sulcus between the protruding intestine and the anal canal wall on insinuation of an examining

finger between them; in rectal prolapse, the sulcus is shallow and the examining finger easily reaches the upper limit of the sulcus.³ Operative reduction is the treatment of choice in most instances; the protruded intestine is cleaned, gently returned into the rectum, and later packed with sterile gauze; the peritoneal cavity is opened and the intestines assessed; the intussusceptum is reduced and the intestine further evaluated for gangrene or perforation which would require resection and restoration of intestinal continuity.³

Often a prolapsed intussusception may be difficult to reduce due to extensive edema or a gangrenous bowel as was the case in our two patients.⁸ We believe that this surgical approach will be beneficial to surgeons when reduction by all known conventional approaches to reducing such an ileocoloanal prolapse fail due to edema or gangrene.

CONCLUSION

Prolapsed intussusception is treated surgically by manual reduction through a laparotomy approach. Occasionally, the prolapsed bowel may not get reduced manually due to gross bowel oedema, gangrenous bowel or associated lead point. In such a difficult situation, our surgical approach will be beneficial.

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. Separate, written and informed consent forms were obtained from the fathers of the two patients, for the images and other clinical information to be reported in the journal. The patients' parents understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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