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Post-operative ileo-ileal intussusception one week after hemicolectomy for ileo-colic intussusception

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ABSTRACT

Intussusception is a common pediatric surgical emergency that results from the introversion of one loop of bowel into another. It is common in children between 3 months and 3 years. Recurrence of intussusception is said to be common in non-operative reduction and negligible after operative reduction. In this case report, we aim to discuss a case of post-operative ileo-ileal intussusception (POI) 7 days after a laparotomy and resection on account of gangrenous ileo-colic intussusception. A 13-month-old male patient presented with bloody stools associated with abdominal distention and fever. Clinical findings were suggestive of intussusception. Diagnosis was confirmed with an abdominopelvic ultrasound. A laparotomy revealed a gangrenous ascending colon extending to the terminal ileum so a right hemicolectomy was performed. The patient was well until post-operative day 7 when he developed abdominal distention associated with vomiting. An abdominal x-ray revealed multiple air fluid levels. A re-laparotomy was performed and a new intussusception was found proximal to an intact and patent anastomotic site. The involved bowel was reduced because it was viable. He was discharged on post-operative day 14. This was a rare case of recurrent intussusception with resection and anastomosis on account of intussusception in a 13-month-old boy.

1. Introduction

Intussusception is a common paediatric surgical emergency that results from the introversion of one loop of bowel into another. It is common in children between 3 months and 3 years [1]. The majority of cases are idiopathic and are as a result of lymphoid hyperplasia (Peyer's patches). A small minority of cases are as a result of a pathologic lead point, namely; Henoch-Schonlein purpura, Meckel's diverticulum, tumours, etc. There is a high male preponderance (3:1). Intussusception typically presents with a classic triad of abdominal pain, red-currant jelly stool and a palpable sausage-shaped mass. Ultrasonography (USG) plays a crucial role in the diagnosis intussusception. A target sign and pseudokidney sign are pathognomonic USG findings of intussusception [2]. The treatment of choice is non-operative for uncomplicated intussusception.

Intussusception is referred to as recurrent when there is a re-diagnosis of intussusception either on abdominopelvic ultrasonography and confirmed at surgery after a patient has been previously operated on for intussusception or the initial intussusception was reduced via the hydrostatic or pneumatic method [3]. Recurrence of intussusception is said to be common in non-operative reduction and negligible after operative reduction [3]. Yang et al. (2013) in their systematic review reported that intussusception as a post-

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operative complication is rare, occurring in 0.01%–0.25% of laparotomies in children [4]. Their study also noted that more than 50% of postoperative intussusceptions occurred in laparotomies of the gastrointestinal tract. While there are reported cases of postoperative intussusception (POI) following reduction, our review revealed no reported cases of POI following surgical resection [5,6]. In this case report, we aim to discuss a case of POI, the diagnostic challenges that ensued and the outcome of the patient after management.

1.1. Case summary

A 13-month-old male patient presented to the Children's Emergency Ward of Tamale Teaching Hospital with bloody stools of 5hrs duration. There was associated abdominal distention and fever but no vomiting, cough, dyspnoea, irritability, poor feeding, and cry on micturition. However, there was lethargy and the stools were loose after the enema. The patient did not have a history of upper respiratory tract infection or recent vaccination.

On examination, the child was dehydrated. The abdomen was distended, moved with respiration, no surgical scars seen, non-tender but there was a palpable mass in the right upper quadrant. A digital rectal exam revealed blood-stained loose stools. The other systems were normal. An abdominal USG showed a typical target and pseudokidney sign as shown in Fig. 1. Other baseline investigations like complete blood count and renal function test were also done. A diagnosis of complicated intussusception was made and the patient was resuscitated and optimized for laparotomy. A laparotomy was performed under general anaesthesia with an uncuffed endo-tracheal tube. A right transverse, supra-umbilical incision was made and dissected layer-by-layer to gain access to the peritoneal cavity. The intraoperative findings included an ileocolic intussusception, gangrenous segment of bowel spanning from terminal ileum to hepatic flexure and no peritoneal contamination as shown in Fig. 2A. A right hemi-colectomy with ileocolic anastomosis was performed. Peritoneal lavage was done and wound closed in layers. Post-operative conditions were satisfactory. The child was transfused with 200mls of whole blood post-operatively. Immediate postoperative condition was satisfactory.

On post-operative day 7, the child began experiencing several episodes of bilious vomiting. The abdomen was distended, soft with appropriate tenderness at incision site, moved with respiration, and bowel sounds were present and of increased pitch and frequency.

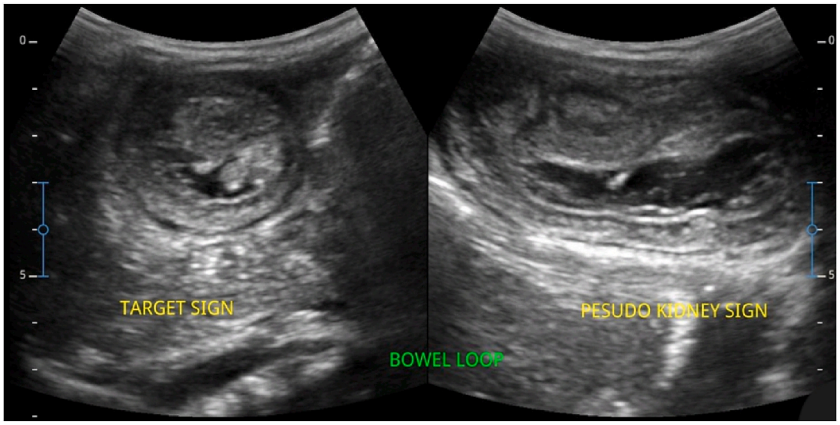

Fig. 1. Abdominal USG showing target sign and pseudokidney sign.

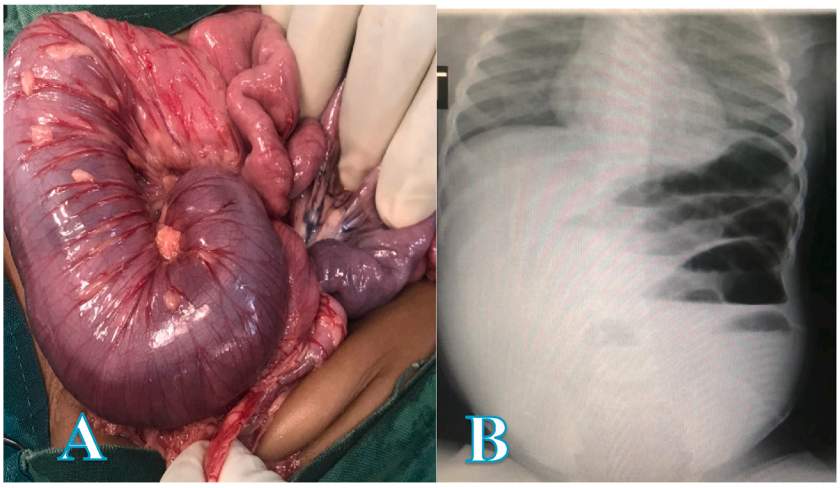

Fig. 2. A) Ileo-colic intussusception segment of gangrenous bowel B) showing an abdominal x-ray with air-fluid levels.

A repeat abdominal x-ray showed air-fluid levels as shown in Fig. 2B. A nasogastric tube was repassed which drained copious amount of bilious fluid and patient was prepared for a relaparotomy.

The intra-operative findings were – an intact and patent anastomotic site, no peritoneal contamination, a new ileo-ileal intussusception located about 50cm proximal to the anastomotic site. There was dilated bowel proximal to the intussusception but no dilated loops of bowel between the anastomotic site and the new intussusception. A manual reduction of the intussusception was performed.

Post-operative condition was satisfactory and patient was discharged 7 days after the relaparotomy which was 14 days after admission.

2. Discussion

Intussusception is predominantly common in children younger than 2 years old with a male predilection of 3:1 [7]. In this paper, the patient was a 13-month-old boy which is consistent with the common age-range that intussusception is said to occur. Ekenze et al. in 2011 indicated that a substantial number of patients with intussusception delayed in seeking healthcare and this resulted in an increased risk of bowel resections and complications [8]. A similar paper also in Nigeria corroborated these findings [9]. In our case, the patient presented late when red currant jelly stools had already set in. This appears common in our setting since most patients would seek alternative treatment prior to orthodox treatment. Hence, it is not uncommon to see most patients with complicated intussusception.

Intussusception can be diagnosed clinically with a typical triad of abdominal pain, a palpable sausage-shaped mass and redcurrant jelly stool but the complete triad is rare in most patients. However, the diagnosis can be confirmed on abdominopelvic ultrasound where classic target and pseudokidney signs can be seen [2]. The patient in this case had typical clinical findings. His abdominal USG showed pathognomonic features of intussusception which made the diagnosis seamless. In cases of doubt, advanced imaging like a computed tomography (CT) scan can be used to diagnose intussusception with 100% sensitivity [10].

For uncomplicated intussusception, the treatment of choice is non-operative reduction (hydrostatic and pneumatic reduction). However, in complicated cases, operative reduction and/or resection is preferred [3]. In this case, the decision for an operative intervention was taken because the findings suggested a complicated intussusception. The findings of gangrene necessitated the resection and anastomosis.

Recurrent intussusception is said to be more common in non-operative reduction and negligible after operative reduction [11]. Intussusception as a post-operative complication is rare occurring in 0.01%–0.25% of laparotomies [12] which is most likely due to activity between the segments of the intestine which are recovering from ileus and in doing so, may cause the intussusception [6]. This usually happens within 2 weeks. In our case, the POI occurred on post-operative day 7. Bai et al. (2009) and Jolley et al. (2017) both reported cases of recurrent intussusception after laparotomy with reduction. To the best of our knowledge, our literature review did not reveal any reported cases of POI after laparotomy with resection on account of intussusception [5,6].

It is unclear whether there was a lead point in this case given the fact that the histology was not performed for the resected segment due to financial constraints. Generally, the aetiology of intussusception among majority of children within this age-range are idiopathic.

3. Conclusion

This was a rare case of recurrent intussusception with resection and anastomosis on account of intussusception in a 13-month-old boy.

Consent

A written consent was obtained from caregivers of patient for the usage of medical records and images of patient.

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Authors' contribution

NAABD and ASS conceptualized, designed and wrote the first draft of the study, all other authors contributed in varied ways and approved the final draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Abbreviations

POI	postoperative intussusception
USG	ultrasonography
CT	computed tomography

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