JOURNAL OF CASE REPORTS 2014;4(2):338-340

Rare Case of Intussusception with Malrotation and Meckel's Diverticulum

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Abstract:

The cause of intussusception in most infant is unclear. Intestinal malrotation has been postulated as a possible cause in some infants. The reported case is unusual not only in respect of malrotation associated with intussusception but also because of the presence of mesenteric adenitis and Meckel's diverticulum.

Key words: Colon, Intussusception, Intestinal Volvulus, Meckel Diverticulum, Infant, Humans.

Introduction

The most common cause of intussusception is idiopathic. Intestinal malrotation has been postulated as cause of intussusception in view of mobile right colon. The association between intestinal malrotation and intussusception is known as Waugh's syndrome. We present a case of Waugh's syndrome which was associated with mesenteric adenitis and Meckel's diverticulum.

Case Report

A 2 year old, male child developed acute abdominal pain, abdominal distension, bilious vomiting and bleeding per rectum. His abdominal pain was localized around umbilicus with no radiating and relieving factors. Examination revealed a febrile child with tachycardia. He had a distended abdomen with tenderness around umbilicus but no palpable mass. There was maroon colored blood and mucous on rectal examination. Routine blood examination revealed Hb: 13.4 gm%, TLC: 12800/ cu mm, DLC: P48, L37. Kidney and liver function tests were within normal limits. X-ray abdomen erect revealed multiple air fluid levels and ultrasound abdomen was suggestive of intussusception with proximal obstruction [Fig.1].

After maintenance of hydration and broad-spectrum intravenous antibiotics, the patient underwent laparotomy. Manual reduction was done for ileo-colic intussusception noticed during exploration which also had few dark hemorrhagic patches but was considered still viable. After reduction there was about one an inch long diverticulum present over anti-mesenteric part of intussuscepted bowel and considered to be Meckel's diverticulum. Wedge resection of Meckel's diverticulum was done [Fig.2]. Mesenteric adenitis was also present so lymph node

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Received: June 23, 2014 | **Accepted:** July 17, 2014 | **Published Online:** September 10, 2014

Conflict of interest: None declared | **Source of funding:** Nil | **DOI:** http://dx.doi.org/10.17659/01.2014.0085

biopsy was taken [Fig.3]. On further exploration Ladd's band was also present with malrotation so Ladd procedure and appendectomy were performed.

Postoperatively he had satisfactory recovery. Histological examination confirmed that appendix had lymphoid hyperplasia with serosal congestion. Resected part of ileum containing diverticulum showed inflamed Meckel's diverticulum with gangrenous changes and lymph node biopsy showed reactive hyperplasia.

Discussion

Intussusception has emerged as one of the common causes of intestinal obstruction in an infant [1,2]. The association of intussusception with malrotation is referred as Waugh syndrome [3,4]. It has been suggested that malrotation is often associated with a mobile right colon which may be a pre-requisite for intussusception [4].

The distribution of intussusception between the sexes is roughly equal, however the occurrence of symptomatic Meckel's diverticulum is predominant in the male and the sex ratio ranges from 2.5:1 to 7.0:1 [6]. The incidence of acute intussusception with Meckel's diverticulum is 2.5%. [7].

The etiology of intussusception is idiopathic in 81% of cases. The other 19% were divided into two groups those where a definite causative pathology was present and those where a contributory pathology may have had a bearing on the condition. In the first group they included Meckel's diverticulum, polyploidy masses and lymph sarcomata and in second hypertrophied Peyer's patches, bands,

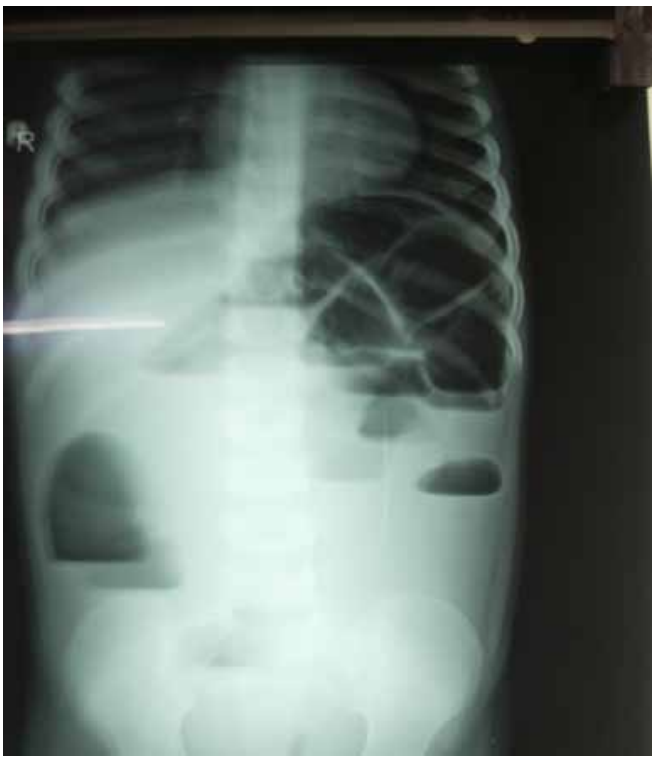

Fig.1: X-ray abdomen erect showed multiple air fluid levels.

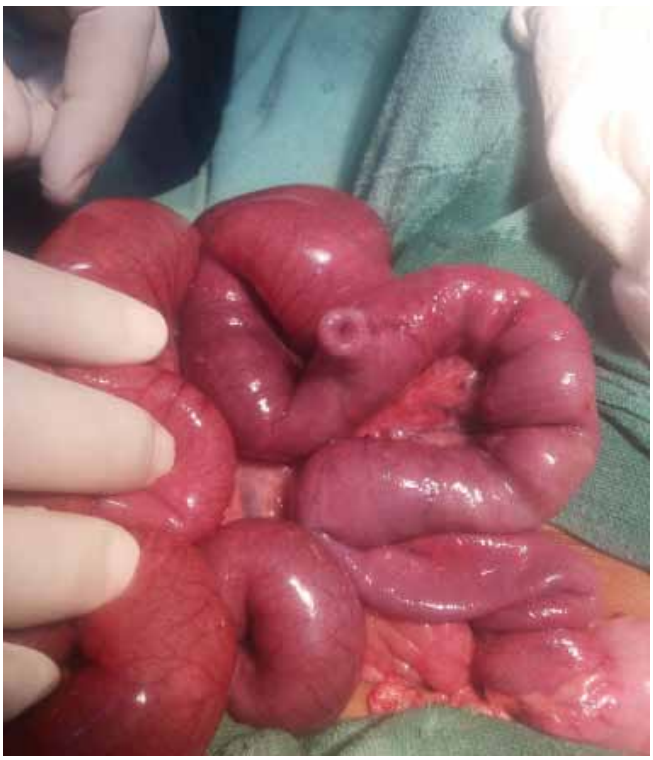

Fig.2: Meckel's diverticulum after per-operative reduction of intussusception.

ascariasis and tumefaction of the ileocaecal valve [5]. An intussusception with Meckel's diverticulum is almost invariably of the ileo-ileal type and does not progress beyond the ileo-caecal valve perhaps because the apex of intussusception is too large to pass through.

Air enema reduction of the intussusception may be complicated by midgut volvulus in children with Waugh syndrome and should be investigated to rule this out after the procedure. Malrotation should be looked for and treated if present when reducing intussusception to prevent midgut volvulus after operation.

Our patient presented with acute sign and symptoms suggestive of acute intestinal obstruction and per-operative diagnosis of intussusception was made. However, the most important findings of our case were its association with malrotation, Meckel's diverticulum and mesenteric adenitis.

Conclusion

Occurrence of intussusception along with malrotation being rare, any case of intussusception needs proper preoperative investigation to rule out association of malrotation. Once diagnosed these cases must undergo correction of malrotation along with management of intussusception because malrotation may cause volvulus. .

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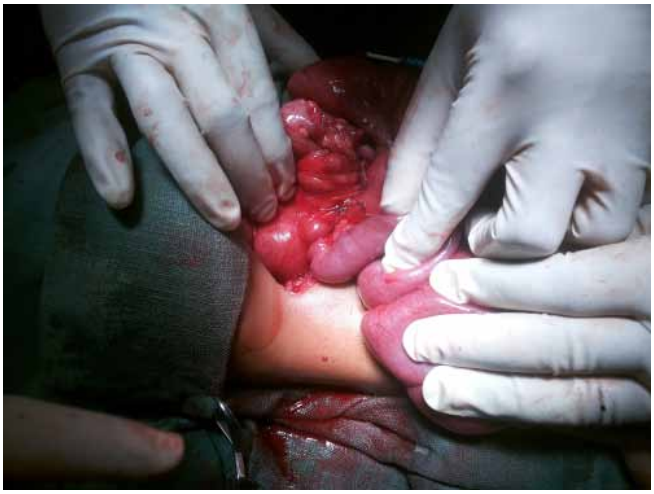

Fig.3: Malrotation with adenitis.

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