DOI: 10.7860/JCDR/2015/9325.6214

Case Report

Surgery Section

Intussusception in Children with a Pathological Appendix Acting as a "Lead Point" - A Series of 3 Cases

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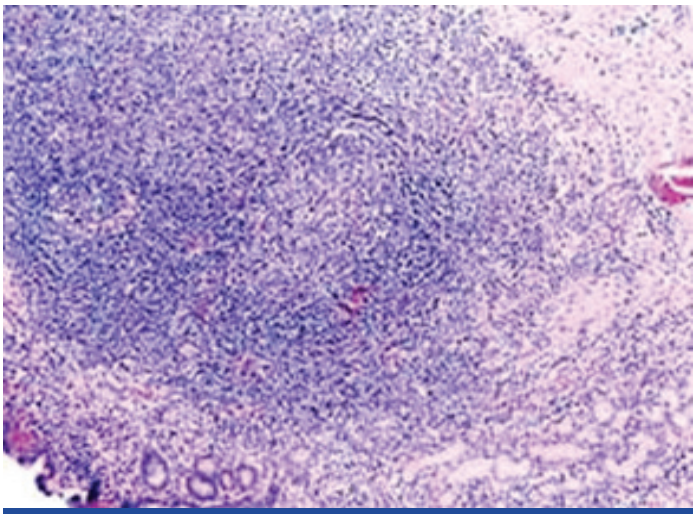
ABSTRACT

Meckel's diverticulum is commonest lead point for intussusception in children. Appendix is part of the intusssusception of the commonest ileocolic type but appendix as lead point for intussusception is rare. We report a series of 3 cases of intussusception in children, wherein a pathological appendix was the lead point. We would like to propose that more likely a pathological appendix, acts as a lead point leading to an appendico-caeco-colic intussusception rather than a normal appendix.

Keywords: Idiopathic, Meckel's diverticulum, Surgical emergency

CASE REPORT

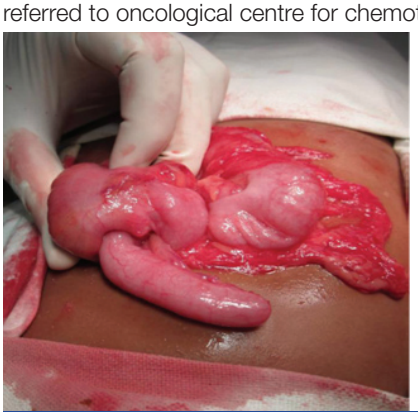
Three children aged 5, 6 and 8 years presented to emergency department with a history of colicky abdominal pain and bilious vomiting. The 5-year-old child was a boy and the other two were girls. In two children bleeding per-rectum (PR) was also a presenting symptom. Per abdominal examination revealed moderate abdominal distension in one child and palpable mass in two children in subhepatic region. All three children underwent ultrasound scan of abdomen which showed the Target sign. No lead point could be identified on ultrasound scan. All three children initially underwent pneumatic reduction of intussusception under ultrasound guidance. Intussusception got reduced partially. Hence all three children underwent laparotomy under standard general anaesthesia. At laparotomy, by right supraumbilical transverse incision, the intussusception was appendico-caeco-colic type [Table/Fig-1] and was located in ascending colon. Manual reduction by milking reduced intussusception along with thickened inverted appendix which acted as lead point and appendicectomy was done. Postoperative period was uneventful and children were discharged on 6th postoperative day. Histopathological examination (HPE) revealed many unusual findings. In 5-year-old boy HPE showed typical granulomas of tuberculosis [Table/Fig-2]. This child subsequently underwent a chest x-ray which was normal and this child was put on standard anti-tubercular regime. In 6-year-old girl the HPE was reported as follicular hyperplasia [Table/Fig-3]. In 8-year-old girl HPE was reported as mucosa-associated lymphoid tissue lymphoma (small lymphoid cells with a narrow rim of clear cytoplasm forming lympho-epithelial lesions) [Table/Fig-4] and was referred to oncological centre for chemotherapy.

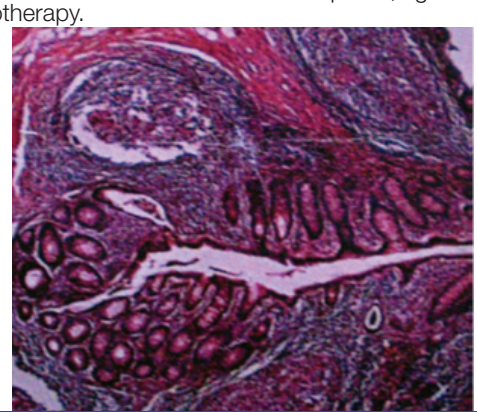


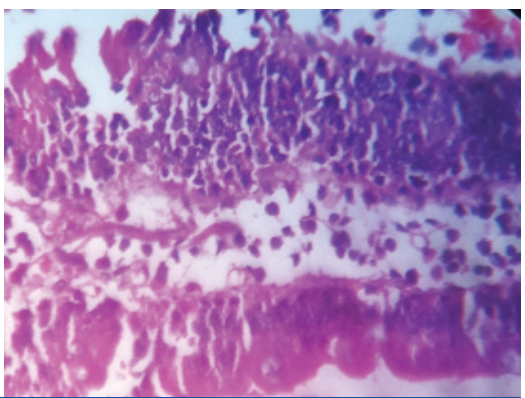
[Table/Fig-4]: HPE showing appendicular mucosal associated lymphoid tissue lymphoma

DISCUSSION

Intussusception due to identifiable lead point is rare in children constituting about 2-12% [1,2]. The reported incidence of appendix as lead point for intussusception is 0.01% [3]. Intussusception is one of the common surgical emergency in children, idiopathic being commonest [4]. Detectable lead point for intussusception is less common in children (2-12%) compared to adults (70-90%). The various lead points described are Meckel's diverticulum, submucosa llipoma, gut associated lymphomas, intraluminal polyps, etc.







[Table/Fig-1]: Intraoperative photograph showing appendicular intussusception being reduced. Note the normal ileocaecal junction **[Table/Fig-2]:** HPE showing the typical tubercular granuloma at the top **[Table/Fig-3]:** HPE showing follicular hyperplasia

Appendix is part of intusssusception of commonest ileocolic type but appendix as a lead point for intussusception is rare. This was first reported by McKiddJ way back in1885 [5]. Collins in a review of 40 year study of 71,000 appendiceal specimens reported an incidence of 0.01%. Appendix whether normal or pathological can be lead point for intussusception. Various reasons have been incriminated for appendicular intussusceptions which are broadly classified as anatomical or pathological factors. Anatomical factors include fully mobile appendix, narrow thin mesoappendix, poorly fixed high caecum, due to hyperperistalsis. Pathological conditions leading to appendicular intussusception include appendicular inflammation, calcified faecolith, benign conditions such as polyp, tubulovillous adenoma, mucocele, mucinous cystadenoma, malignant conditions such as mucinous cystadenocarcinoma, carcinoid tumour, mucosa associated lymphoma, etc and foreign bodies in appendix. The clinical features include colicky abdominal pain, bilious vomiting, abdominal distension, per rectal bleeding and palpable abdominal mass. Although more than 2006 cases of appendicular intussusception has been reported preoperative diagnosis have been made only in few instances. Barium enema [6] may have two patterns. The appendix may completely invert into the caecum producing vermiform filling defect in barium filled caecum or more commonly the appendix is partly inverted, producing mass effect on caput caecum. Ultrasound [7-9] did show lead point within multiconcentric ring sign and longitudinal scan showing inverted appendix protruding into caecal lumen. Colonoscopy [10,11] as tool for diagnosing appendicular intussusception have been reported in adults. Treatment options vary from simple appendicectomy to right hemicolectomy in case of malignant lesions. Spontaneous reduction of appendiceal intussusception has been reported [12].Two cases of successful colonoscopic appendicectomy for appendiceal intussusception by use of an endoloop ligating system have been reported in adults [13,14].

CONCLUSION

Intussusception with definite lead point is less common in children. Appendix is part of intusssusception of commonest ileocolic type but appendix as lead point for intussusception is rare. Pre operative diagnosis is difficult but operator dependent. Simple appendicectomy is curative but management is individualized depending on histopathology.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Mar 19, 2014**
Date of Peer Review: **Jun 10, 2014**
Date of Acceptance: **Apr 14, 2015**
Date of Publishing: **Jul 01, 2015**