Surgical Outcomes after Failed Air Enema Reduction of Intussusception in Children in a Paediatric Hospital in Singapore

Eu Leong Harvey James Teo, MBBS, FRCR

Introduction
The vast majority of symptomatic intussusceptions in children arise in the ileum due to hyperplasia of the Peyer’s patches (1). Most of these cases are successfully reduced by air enema reduction and discharged. However, other commonly-reported pathological lead points include Meckel’s diverticulum, lymphadenopathy, Henoch-Schonlein purpura and cystic fibrosis (2) which may need further management.

Aim
The aim of this study was to determine the surgical outcomes and pathological findings after failed air enema reduction of intussusception in children in a paediatric hospital in Singapore. Knowledge of the surgical findings in cases of failed reductions may potentially help Clinicians determine which cases need further investigation should there be a secondary cause of the intussusception such as a pathological lead point.

Methods and Materials
A retrospective review of the surgical findings of all failed cases of air enema intussusception in children in a 3-year period between 1 January 2013 and 31 December 2015 was performed.

Results
263 ultrasound-confirmed cases of intussusception underwent air enema reduction. 14 (5.32%) cases were initially unsuccessful. 3 cases were successfully reduced during repeat attempts a few hours later. The 11 remaining cases underwent surgical reduction. 1 case was found to have spontaneously reduced. Of the remaining 10 cases, 6 had tight ileo-colic lesions, 2 had ileo-ileal lesions and 2 had ileo-colo-colic lesions.

Surgical Intervention and Results
Due to bowel infarction, 4 patients underwent bowel resections: 2 patients had right hemicolectomies, 1 had resection of the terminal ileum and 1 had partial resection of the transverse colon. 2 of these patients were found to have prominent, reactive Peyer’s patches and 1 had enlarged mesenteric lymph nodes. No patients were found to have other surgical lead points.

Surgical Findings
- 2 prominent Peyer’s patches
- 1 enlarged mesenteric nodes
- 0 pathological lead points

Discussion
Whilst pathological lead points have been reported in other studies, these were not encountered in this study. Repeat reduction attempts were successful in 3 cases in which they were performed. There is no established time interval in our institution between repeat attempts and they are only performed in our department on patients who are stable with no evidence of peritonitis and after discussion with the Paediatric Surgery staff present. Bowel infarction was found in 4 cases which resulted in bowel resection during surgery.

Conclusion
Repeat reduction attempts may be beneficial as they were successful in 3/3 cases. Bowel infarction was found in 4/14 (28.9%) of failed cases which resulted in surgery bowel resection. No significant pathological lead points were found in this study.

References