INTUSSUSCEPTION

Intussusception is the invagination of one portion of intestine into another with 80% involving the ileocaecal junction. The mortality and morbidity from intussusception in Malaysia is still high due to delay in diagnosis, inadequate intravenous fluid therapy and surgical complications.

It is the most common form of intestinal obstruction in infancy and early childhood with the **peak age group being 2 months to 2 years**. Majority of the children in this age group have **no pathological lead point**. Lymphoid hyperplasia has been implicated. The children may also have a preceding viral illness.

Common lead points (usually in the age group outside the above)

- structural – Meckel's diverticulum, duplication cysts,
- neoplastic – lymphoma, polyps, vascular malformations,
- vascular – Henoch-Schonlein purpura, leukaemia
- miscellaneous – foreign body

Clinical Features

- previously healthy or preceding viral illness
- pain - sudden onset, severe intermittent cramping pain lasting seconds to minutes
- during the time in between attacks lasting between 5 to 30 minutes, the child may be well or quiet
- vomiting – early reflex vomiting consists of undigested food but if the child presents late; the vomiting is bilious due to obstruction.
- stools- Initially normal, then become dark red and mucoid (redcurrant jelly)
- note that small bowel intussusception may have an atypical presentation

Physical Findings

- well- looking / drowsy / dehydrated / seizures (due to hyponatremia) depending on the stage of presentation
- abdominal mass may be difficult to palpate in a distended abdomen
- abdominal distension is a late sign

Investigations

- *plain abdominal X-ray* – target sign, absence of caecal gas, loss of visualization of the tip of the liver, paucity of bowel gas in the right lower quadrant, small bowel obstruction (late sign)
- *ultrasound* – useful diagnostic tool. Characteristic signs - target sign on transverse section (figure 2) and pseudo-kidney sign on longitudinal section. May also help to identify lead points if present.
- *barium enema* – for diagnosis and reduction if present (Figure 3)

FIgure 1. Plain abdominal X-ray showing dilated loops of small bowel

Management

Resuscitation

- aggressive rapid rehydration with boluses of 20 mls/kg of Normal saline/ Hartmann's solution till parameters are normal
- Do NOT proceed to enema reduction or surgery till fully resuscitated
- close monitoring of vital signs and urine output
- antibiotics and inotropes as required

Non operative reduction

- should be attempted in most patients, if there are trained radiologists and surgeons available, as successful reduction rate is about 80-90%.
- methods
  - barium enema reduction
  - air or oxygen reduction
  - ultrasound guided saline reduction
- the younger child who has been sick for a longer duration of more than 36 hours and has complete bowel obstruction is **at risk of colonic perforation** during at tempted enema reduction
- delayed repeat enemas done after 30 minutes or more after the initial unsuccessful reduction enema may improve the outcome of a select group of patients. These patients are clinically stable and the initial attempt had managed to move the intussusceptum.

Table 1. Contraindications to enema reduction

- peritonitis
- bowel perforation
- severe shock
- neonates or children > 3 years old
- history > 48 hours

Table 2. Indications for surgery

- failed non-operative reduction
- bowel perforation
- suspected lead point
- small bowel intussusception

Recurrence of intussusception

- rate – 5-10% with lower rates after surgery
- success rate for non operative reduction in recurrent intussusception is 30-60%

Successful management of intussusception depends on high index of suspicion, early diagnosis, adequate resuscitation and prompt reduction.

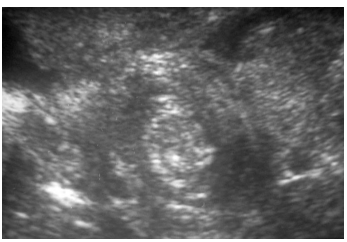

FIgure 2. Ultrasound showing target sign

FIgure 3. Barium enema reduction showing intussusceptum ("claw sign")