Intussusception

Management Guidelines
Emergency Department
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Perth, Western Australia
Last reviewed September 2010
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Definition

Intussusception occurs when a section of bowel invaginates into the lumen of the immediately distal bowel, resulting in infarction and gangrene of the inner bowel. It most commonly occurs at the ileocaecal junction. There is often a history of a preceding respiratory or diarrhoeal illness.

Age: Peak age 5 -10 months (may occur from 3 months – 5 years)

Incidence: about 1:1000 children, Male:Female ~ 2:1

Since November 2007 Intussusception is a notifiable disease. The statutory requirement to report intussusception is specified in the *Health (Notification of Intussusception) Regulations 2007*.

History

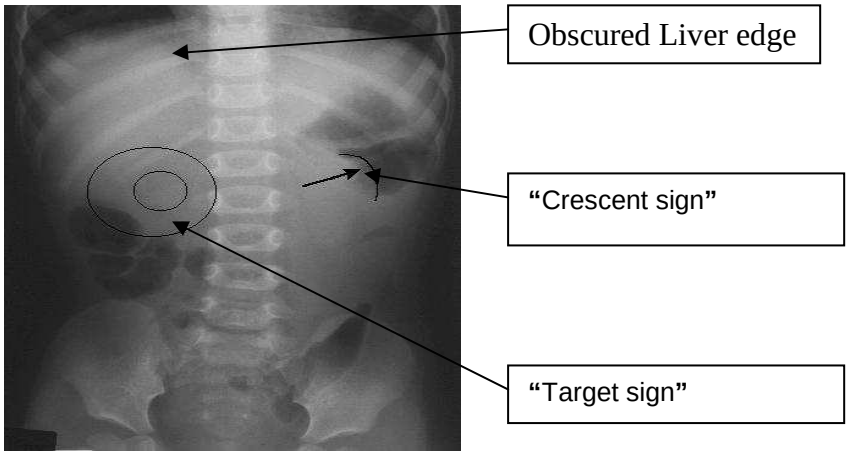
- Typically, episodes of sudden intense pain with screaming and flexion of the legs, often associated with pallor.
- Episodes last several minutes and recur at 5-20 minute intervals.
- The infant usually looks relatively well between episodes.
- Lethargy, irritability, altered mental status.
- Dehydration, shock
- Vomiting (may become bile-stained, if bowel obstruction has occurred).
- “Red current jelly” stool (blood and mucous in stools) – this is a **LATE** sign.
- Less commonly, the episodes may be mistaken for a child presenting with convulsions or sepsis/meningitis - with the child appearing floppy and semi-conscious.

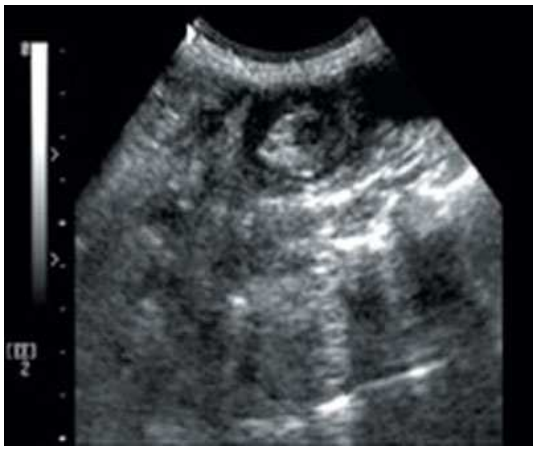
Examination

- The child may be pale and lethargic and be hypovolemic.
- Abdomen may be distended and tender.
- Palpable abdominal mass (sausage shape), often in the RLQ ~ 2/3 cases.
- Peritonitis if perforation has occurred.
- In the absence of obvious bloody diarrhoea, a rectal examination may identify blood and mucous in the stool.

Complications

1. Perforation of bowel, with peritonitis.
2. Necrosis of bowel requiring bowel resection.
3. Shock and sepsis.
4. Re-intussusception after spontaneous or active reduction.





Investigations

1. **AXR:** May be normal.
   - Paucity of bowel gas on the right side of the abdomen.
   - Occasionally an abdominal mass can be identified.
   - Distended loops of small bowel with air/fluid levels.
   - Free gas, if perforation.

2. **Ultrasound** is the diagnostic investigation of choice, and is highly sensitive and specific for intussusception (a "target" or "doughnut" sign is classic). U/S is not necessary in the child who has a classical history, palpable abdominal mass and a suggestive AXR.

3. **Air enema**: diagnostic and therapeutic (see below)

4. **Bloods:** Electrolytes, urea + creatinine, acid-base - especially if shocked or vomiting.
   Hb and cross match

Treatment:

Child should be resuscitated PRIOR to any investigations

1. **Resuscitate:**
   - IV line.
   - Correct any shock using boluses of 20 mL/kg of normal saline IV.
   - NGT suction (if signs of bowel obstruction), Nil by mouth.
   - Analgesia: IV morphine 0.1 mg/kg titrated.

2. Arrange for an urgent abdominal ultrasound, and urgent surgical review.

3. Abdominal ultrasound. If positive, followed directly by attempted non-operative reduction by means of an air enema unless The Surgeon and Radiologist agree that air reduction is unsafe and operative treatment is required. A Surgeon or registrar must be present at the attempted air reduction in case of pneumoperitoneum threatening respiration and will insert a large bore IV cannula in the peritoneal cavity in this instance.

4. Antibiotics (Timentin 50 mg/kg IV up to 3g) must be administered prior to air enema or surgical reduction

5. Air enema:
   - Should be done by an experienced radiologist (up to 95% success).
   - Contraindications: Signs of peritonitis / perforation
   - ED Nurse +/- Emergency Doctor should accompany child to radiology to administer IV morphine for analgesia prior to attempted reduction.
   - Surgical registrar must be in attendance.

6. Surgical reduction is necessary if there are signs of peritonitis / perforation, or if air enema fails to reduce the intussusception. If gangrenous bowel is present, resection and anastomosis is required. Intussusception requiring theatre activates the Dying Gut quidelines and requires close consultation between the Surgeon and Anaesthetist

Intussusception

Child presents with signs of intussusception.
See signs

Does child appear shocked or hypovolaemic?

No

Yes

If Child appears shocked Resuscitate prior to any Investigations

Insert IV line
Take bloods
- Electrolytes, urea + creatinine, acid-base
- Hb and cross match

Correct shock using titrations of 20ml/kg bolus of 0.9% saline
Analgesia – IV morphine 0.1mg/kg

Consult with radiologist and surgical registrar re urgent ultrasound
Medical/nurse escort
Draw up and take IV Morphine and IV Timentin

- NBM
- +/-Abdominal X-Ray
- Analgesia
- Senior ED consultation and surgical

X-ray indicates perforation

Treat as surgical abdomen
Urgent surgical consult
Bloods, IV, IV AB's
Anlagesia
NBM
Prep for theatre

Insert IV line
Take bloods –
- Electrolytes, urea + creatinine, acid-base
- Hb and cross match

Ultrasound
Medical/nurse escort
Draw up and take IV Morphine and IV Timentin

Ultrasound positive for Intussusception?

No

Yes

Consider differential diagnosis.
Discuss with surgeons
Admit for observation

Air enema
Consult with radiologist and surgeon. Surgeon should be present.
Nurse/ medical escort for administration of IV morphine
IV antibiotics-Timentin 50mg/kg
Admission

Unsuccessful Air Enema or confirmed perforation

Prep for theatre
Pass NGT on free drainage
IV antibiotics-Timentin 50mg/kg (if not already given)