INTUSSUSCEPTION

Dr Aaron VUNDA
DEFINITION:

Intussusception occurs when one segment of the bowel telescopes into a more distal segment.
Intussusception

- Occurs at all ages
- Commonly in children
- Is the most frequent cause of intestinal obstruction in infants/children aged 6 months to 3 years.

- Males > females
Intussusception

Etiology:

The most common Intussusception is **ileocolic**, the small bowel intussusception then prolapses through the ileocecal valve and continues a variable distance.

Other types:

- Ileoileal (rarely pathological)
- Colocolic (very rare)
TYPES of Intussusception:

- **Idiopathic**: 90%
  - children and infants under 4 years of age
  - Lead point = hypertrophied Peyer’s patches

- **Nonidiopathic**:
  - children older than 3 years of age
  - there is much more likely specific lead point:
    - Polyp
    - Meckel’s diverticulum
    - Duplication
    - Tumor
TYPES of Intussusception:

- Post Rotavirus vaccine (RRV-TV, rotashield®)?
Intussusception

Clinical manifestations:

- Intermittent Abdominal Pain
- Vomiting
- “redcurrant jelly stools”, when stools contain blood mixed with mucus
- Abdominal Mass that may be palpable
- Frequently, the child becomes lethargic
Intussusception

Abdominal Pain

- Acute, severe and intermittent abdominal pain
  - Initially 15 to 20 minute intervals with the child appearing normal between episodes.
  - Painful episodes become more severe and occur at increasingly closer intervals
  - With inconsolable crying
  - And drawing of the knees up to the chest
Intussusception

The “redcurrant jelly stool”
DIFFERENTIAL DIAGNOSIS:

- Gastroenteritis
- Colic
- Other intestinal pathology
  - Volvulus
  - Strangulated Inguinal hernia
  - Appendicitis
- Meningoencephalitis (lethargy)
COMPLEMENTARY investigations:

1. Imaging

   - **Abdominal ultrasound**: characteristic image
   
   - Non-barium- or Air-contrast enema
   
   - Plain abdominal X-ray: Crescent sign often right upper quadrant mass, distended loops of bowel with absence of colonic gas
**Imaging 1:** Abdominal ultrasound

- Intra-abdominal mass with typical «target sign»
Imaging 2: Non-barium- or Air-contrast enema
Imaging 3: Plain abdominal X-Ray

- Distended loops of small bowel
- Absence of colonic gas on right abdominal upper quadrant
OTHER COMPLEMENTARY EXAMINATION:

Biology

- **Blood**: Complete Blood Count (CBC)
- **CSF**
- **Urine**
- **Stools**
  - Search for blood: often positive
  - Culture (salmonella, shigella, campylobacter) to eliminate other causes of abdominal pain
Intussusception

Treatment

- **Non-operative reduction**
  - Air-contrast enema = insufflation
  - Non barium-contrast enema = hydrostatically controlled enema reduction

- **Operative reduction**
  - Non-operative reduction unsuccessful
  - Signs of peritoneal irritation (especially in the long duration intussusception)
Intussusception

**Prognosis and Complications**

- **Untreated**
  - Necrosis $\Rightarrow$ perforation and Sepsis $\Rightarrow$ Coma, death

- **After enema reduction**
  - Recurrence: 1 – 3%
Intussusception

Identifying Adverse Events of Special Interest (AESI) in infants and young children

Job Aid

Medical and paramedical personnel

GSK
GlaxoSmithKline Vaccines
Clinical signs of Intussusception are:

- Acute, severe and intermittent abdominal pain

- Inconsolable crying

- Folding legs to the chest
- Brighton Collaboration *Intussusception* Group

- Diagnosis of acute intussusception in infants and children following vaccination

- Clinical criteria +/- simple radiological studies (Level 2 and Level 3 of diagnosis certainty)
Intussusception

The 3 levels

Level 1 of diagnosis Certainty, demonstration of invagination

- **Surgical Criteria**: diagnosis during surgical procedure
- **Imaging Criteria**:
  1. air or liquid contrast enema diagnosis *(radiological)*
  2. abdominal ultrasound (US) with specific characteristic features And proven to be reduced by hydrostatic enema on postreduction US
- **Autopsy Criteria**: post mortem
Intussusception

The 3 levels

Level 2
Level 3
of diagnosis Certainty
are based on  - Clinical (major and minor) criteria
            - Simple radiologic studies

For use in low-income areas
For diagnosis of Intussusception
Intussusception

Major Criteria

1. Intestinal obstruction

1. Bile-stained vomiting
2. Acute abdominal distension with abnormal or absent bowel sounds
3. Fluid levels and dilated bowel loops on plain abdominal X-rays

2. Feature of Intestinal Invagination
3. Evidence of intestinal vascular compromise or venous congestion
Intussusception

Major Criteria

1. Intestinal obstruction

2. Feature of Intestinal Invagination: 1 or more
   1. Abdominal mass
   2. Rectal mass
   3. Intestinal prolapse
   4. Visible intussusceptum or soft tissue mass imaging (Plain X-ray, and/or US, and/or CT-scan)

3. Evidence of intestinal vascular compromise or venous congestion
Intussusception

Major Criteria

1. Intestinal obstruction
2. Feature of Intestinal Invagination

3. Evidence of intestinal vascular compromise or venous congestion
   1. Blood per rectum
   2. « red currant jelly » stools
   3. Blood detected on rectal examination
Intussusception

Minor Criteria

1. Predisposing factors: age < 1 year and male sex
2. Abdominal pain
3. Vomiting
4. Lethargy
5. Pallor
6. Hypovolemic shock
7. Abnormal but non-specific bowel gas pattern on the plain abdominal radiograph
**Intussusception**

Clinical signs of intussusception:
- Acute, severe and intermittent abdominal pain
- Inconsolable crying
- Folding legs to the chest

1. Imaging:
   - Visualization of an abdominal mass
   - Abnormal distribution of air in the intestines

2. Imaging:
   - Signs of intestinal obstruction
   - Signs of intestinal invagination
   - Signs of vascular compromise or venous congestion

3. Imaging:
   - ≥ 1 major criterion
   - ≥ 2 major criteria
   - ≥ 1 major criterion

   **INTUSUSCEPTION**
   - Level 2 diagnostic certainty

4. Imaging:
   - ≥ 3 minor criteria
   - ≥ 4 minor criteria

   **INTUSUSCEPTION**
   - Level 3 diagnostic certainty

5. No imaging

6. Aged < 1 year, male
   - Abdominal pain
   - Lethargy
   - Pallor
   - Hypovolemic shock
Thank you

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