INTUSSUSCEPTION

- Intussusception is one of the most frequent causes of bowel obstruction in infants and toddlers.

PATHOGENESIS

- Telescoping of one portion of the intestine (intussusceptum) into another (intussusciptiens) by peristaltic activity.
  1. **Primary**: idiopathic, commonly 5-9 months, frequently occur in the wake of upper respiratory tract infections or episodes of gastroenteritis, associated with enlargement of Payer’s patches, adeno virus and rota virus implicated.
  2. **Secondary**: a definite anatomic lead point is found in 2-12% of cases, e.g. Meckel’s diverticulum "the commonest", appendix, polyps, duplication of bowel, Henoch-Schonlein purpura "due to sub mucosal hemorrhage", and non-Hodgkin lymphoma, hemangiomas, foreign bodies and cystic fibrosis.

**Types**:
- 1- Ileocolic (80-95%).
- 2- Ileointestinal.
- 3- Cecocolic.
- 4- Colocolic.
- 5- Jejunjejunal.

NATURAL HISTORY

- Intussusceptions > compressed bowel & mesentery > venous obstruction > bowel wall oedema >venous insufficiency> arterial insufficiency > bowel wall necrosis > sepsis > death, if not treated.

INCIDENCE

- **Age**: any age especially 4-9 months.
- **Sex**: 2/3rd is boys, well-nourished healthy infants (plumpy child).
- **Peaks** of R.T.I or epidemics of gastroenteritis.

PRESENTATIONS

- The classic presentation of intussusception is a young child with intermittent, crampy abdominal pain associated with “currant jelly” stools and a palpable mass on physical examination, although this triad is seen in less than a fourth of children.
- **Abdominal pain**: acute, cramping; stiffen & pull legs to the abdomen > free of pain and the attack usually occur every 15-30 minute, the child between the attack healthy and later on become lethargic on recurrent attacks and the attack ceases as it started.
- **Vomiting**: almost universal, later on become bilious.
- **Bowel motion**: small & normal initially > stool tinged with blood > dark-red mucoid clots (currant-jelly stool).
EXAMINATION
• Flat or empty RLQ (Dance’s sign).
• During relaxation, sausage shape or curved mass can be felt anywhere in the abdomen, especially in the right upper quadrant or epigastrium.
• PR > blood stained mucus or fresh blood & palpable mass.
• Delayed > signs of dehydration and bacteremia with tachycardia and fever and signs of peritonitis.
• Grave sign > intussusceptions through anus may mimic rectal prolapse.
  Blade can be passed more than 1-2 cm through the anus suggesting intussusception.

DIAGNOSTIC STUDIES
1- Plain AXR: -
  • Abnormal distribution of gas & fecal content.
  • Sparse large bowel gas and absence of caecal gas.
  • Air fluid level.
  • Mass.
2- U/S: - high sensitivity and specificity.
  • Target lesion on transverse section: 2 rings of low echogenicity separated by hyper echoic ring.
  • Pseudo-kidney sign on longitudinal section.
  • Lymph node enlargement.
  • Free intra peritoneal fluid.

3- Barium enema:
  • Claw sign.
  • Coiled spring sign.
4- Colored Doppler:
  • To assess the vascularity of intussusception.
5- CT scan or MRI.
NON-OPERATIVE MANAGEMENT:

1. Nothing per oral.
2. NG tube.
3. I.V fluid.
4. Antibiotics.
5. F.B.C & s.electrolytes.
6. Reduction.

**Hydrostatic reduction.**
By using barium enema under fluoroscopic monitor but due to risk of perforation and barium peritonitis (85% fatality rate) for that reasoned recently use water soluble contrast under fluoroscopic guide with successful rate 85% in uncomplicated case.

**Pneumatic reduction.**
By using air 80-120mmHg, the pneumatic reduction is used under fluoroscopic monitor and successful in 90% of uncomplicated cases.

It is faster than hydrostatic and safer and decrease the time of radiation exposure
The disadvantage was perforation> pneumo peritoneum.

OPERATIVE MANAGEMENT:

- **Indications:**
  1. Evidence of peritonism or perforation, sepsis or possible gangrenous bowel.
  2. Evidence of lead points e.g. filling defect on contrast enema.
  3. Delayed presentation with persistent hypotension

  4. Failure of non-operative management.
  5. Perforation during non-operative reduction.

RECURRENT INTUSSUSCEPTION:

- The majority within 6 months.
- Usually have no lead points.
- Less with surgical reduction.

POSTOPERATIVE INTUSSUSCEPTION:

- Intussusception occurs after operations done for a variety of conditions e.g., thoracic or abdominal.
- May not been diagnosed preoperatively (adhesion).
- Usually within a month.
- Most > ileoileal.