Intussusception is a process in which there is an invagination of the intestine into a subsequent segment, most commonly involving the ileocecal valve. This process occludes blood supply to the bowel and can progress from tissue ischemia to necrosis/perforation.

Intussusception is the most common abdominal emergency of early childhood and is usually idiopathic. The vast majority of cases (80%) occur in children less than 2 years, with the most frequent age range being 5-10 months.

**PRESENTATION**

- Sudden onset of intermittent waves of severe abdominal pain and pallor that cause the child to cry inconsolably and draw their legs into their abdomen.
  - Episodes of pain typically occur every 15 to 20 minutes, with slight discomfort between episodes.
- Vomiting may occur during (or after) the painful episodes, which may progress to bilious emesis with time.
  - Because of this, early intussusception may be confused with acute gastroenteritis.
- Intussusception may present as lethargy or altered mental status, especially in young infants.
  - This presentation may be confused with sepsis.
- A **late** finding of intussusception is a mixture of blood and mucous in the stool that gives the appearance of "currant jelly".
- Blood is a **late** finding of intussusception and is **not** a diagnostic requirement.
- In **rare** cases, a "sausage-shaped" abdominal mass may be palpable in the right abdomen.

**INVESTIGATION**

Laboratory evaluations are **not** routinely indicated or helpful in the diagnosis or management of intussusception.

1. **Ultrasonography** is the **preferred** method to diagnose intussusception and is the first-line diagnostic tool that physicians should utilize.
   - The classic finding will be a "target" or "bulls-eye" lesion caused by layers of intestine within intestine.
   - Experienced institutions have a sensitivity and specificity that approaches 100%.
   - Bedside ultrasound can be used to identify intussusception, but only with specific training. If the diagnosis is still likely after a negative bedside ultrasound, a formal ultrasound should be obtained.

2. **Abdominal radiographs** are less sensitive and specific than ultrasonography and should not be used routinely to confirm or rule out the diagnosis.
   - If radiographs are obtained, intussusception should be considered if there is an absence of colonic gas or a "target sign" overlying the right kidney.
MANAGEMENT

1. CORRECT HEMODYNAMIC INSTABILITY
   » For patients with hypovolemic shock from vomiting or septic shock secondary to perforation:
     - administer aggressive fluid resuscitation as per PALS guidelines
   » For patient with peritonitis or other signs of perforation:
     - administer empiric antimicrobials

2. PROCEED TO NON-OPERATIVE REDUCTION BY AIR ENEMA IF PATIENT IS STABLE WITHOUT SIGNS OF BOWEL PERFORATION
   » Air-enemas are preferred to hydrostatic treatments.
     - if using hydrostatic technique, a water-soluble agent is preferred over barium.
   » Pre-reduction antibiotics are of little value.
   » Before pneumatic or hydrostatic enema, the stomach should be decompressed and a surgery team should be readily available, as perforation can result as a complication of reduction (<1% of patients).
   » Ultrasound with fluoroscopic guidance (success rate of 80 to 90%) should be utilized during reduction to verify success.

3. IF NON-OPERATIVE REDUCTION FAILS TO REDUCE THE INTUSSUSCEPTION, ARRANGE FOR A SURGICAL TEAM
   » Transfer is indicated if the treating facility lacks a surgical team or radiologist with ultrasonography available.

POST-REDUCTION

AFTER SUCCESSFUL REDUCTION
   » Recurrence occurs ~ 10% of the time but early recurrence (in the first 4-6 hours) is in the range of ~2%.
   » Manage non-operatively if there is no evidence of bowel necrosis.
   » Admission is recommended for any patient with suspicion of bowel necrosis or unable to tolerate oral intake following the procedure.

IF THERE IS A RECURRANCE
   » Management is the same, with non-operative reduction being favored.
   » Patients who have a recurrence are more likely to have a pathological lead point.