Intussusception

Patient and family information, brought to you by the Education Committee of APSA

Overview - "What is it?"

Intussusception [in-tuh s-suh-sep-shuh n] is the condition when part of the intestine slides into an adjacent part of the intestine. It is similar to the intestine telescoping into itself. It can happen where small intestine slides into small intestine, small intestine slides into large intestine, and very rarely large intestine into large intestine. When the intestine telescopes into itself, this portion of the intestine (intussusception) gets kinked, leading to decreased blood supply to that part of the intestine and blocks the passage of food and fluid. See Figure 1 for what it can look like in an operation.

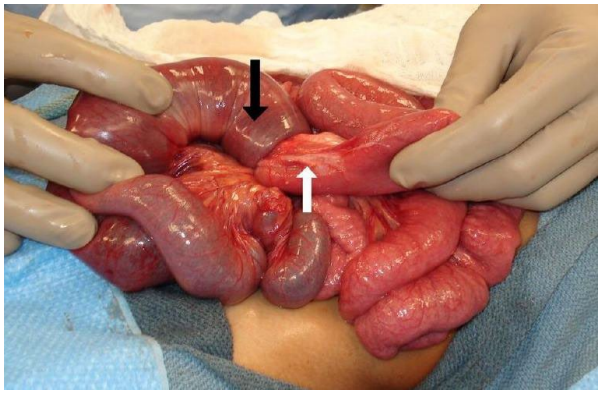

Figure 1: *Arrow point to the intussusception of the bowel. The white arrow shows the bowel that is telescoping into the part of the bowel with the black arrow.*

(*Image credit: pedsurglibrary.com*)

- Incidence of intussusception occurs in 1-4 in every 2000 children worldwide.
- Intussusception occurs more frequently in males compared to female with a ratio of 2:1 or 3:2. Intussusception can occur in all pediatric ages, but 75% of cases occur in the first two years of life and 90% of cases by age three years old.

- There is a seasonal variation correlating with viral infections where most cases tend to occur during May to July. These infections can lead to enlarged or inflamed lymph nodes by the intestine, which can cause the intussusception.

Signs and Symptoms - "What symptoms will my child have?"

Early signs/symptoms:

- Intermittent episodes of sudden onset of severe abdominal pain lasting only a few minutes. Infants may pull up their legs during episodes of pain
- Vomiting
- Abdominal mass in the right upper side of the abdomen
- Lethargy due to dehydration.

Later signs/symptoms:

- Bloody stools with a mucus-like texture that resemble currant jelly
- Bilious (green) vomiting from intestinal obstruction
- Fever, low blood pressure, and fast heart rate can be signs of bowel perforation (hole in the intestine).

Diagnosis - "What tests are done to find out what my child has?"

Physical Exam: Sometimes a mass can be felt by your physician in the right lower belly. This mass is the abnormal telescoping intestine.

Labs: The most common blood tests obtained are complete blood count (CBC) and electrolytes. The white blood cell count may be high if the intussuscepted bowel is compromised or ischemic (lack of blood flow).

Ultrasound: The most accurate first study is ultrasound. Ultrasound uses sound waves to evaluate the intestine without radiation. Ultrasound may show concentric rings of affected intestine and is termed a "target sign."

Abdominal X-ray: An abdominal x-ray may be performed and show dilated small intestine loops

Contrast Enema: A contrast enema (injecting dye or air into the colon) may be both diagnostic and therapeutic.

Conditions that mimic this condition: Include other causes for bowel obstruction such as malrotation and midgut volvulus. Conditions that cause cramping pain such as gastroenteritis may also mimic intussusception.

Treatment - "What will be done to make my child better?"

Medicine: The initial treatment for patients with intussusception is intravenous (IV) fluid for rehydration, as most patients are dehydrated.

Radiology procedure – air or liquid contrast enema: If the child shows no concerning symptoms such as a hole in the intestine, severe dehydration, low blood pressure, a undoing the intussusception is attempted with liquid or air contrast enemas while watching the intestine under a special radiology machine. This test can be attempted multiple times. If radiologic reduction, or the intestine slides out from the other portion of intestine, is successful, the radiologist will see a sudden rush of air or barium flow into the small intestine from the large intestine. After successful enema reduction, the child is typically admitted to the hospital for observation to watch for recurrence. In some instances, patients can be discharged from the Emergency Room once they tolerate fluids and are relieved of pain and other symptoms.

- ***Risks*:** Risk of this study is for a hole or perforation be made in the intestine requiring surgery.

Surgery: Surgery is performed if the intussusception does not improve with the radiologic reduction or if patient is unstable (too sick). Patients may have an elevated white blood count, they may have air outside the intestines on x-ray. Surgery can be performed *laparoscopically* (small incisions with a camera and instruments) or *open* – a longer incision either horizontal or vertical depending how old the child.

- In the operating room, the intussusception is identified, and using instruments or the surgeon's hands, the intestine is reduced. Rarely, the intestine appears too sick and that portion needs to be removed, and the remaining intestine put back together (anastomosis).
- **Preoperative preparation:** Patients will be started on IV fluids and IV antibiotics. Rarely, patients may need transfusions of blood products prior to surgery.
- **Postoperative care:** Patients will not be fed for a period of time after surgery until their intestine begins to work again. Patients may require additional procedures if they need an IV for a longer time while waiting for their intestines to start working. Patients will be given Tylenol and ibuprofen for pain. Sometimes children will need stronger medication such as narcotics for a couple of days after surgery, although these are limited.
- ***Risks:*** Risks of surgery include: infection, bleeding, damaging surrounding structures such as other portion of intestine, risk of scarring, risk of anesthesia.

Home Care - "What do I need to do once my child goes home?"

Diet: Regular diet.

Activity: Normal pediatric activity. If surgery is needed, activity may be limited for 1-6 weeks, depending if it is performed laparoscopically or open.

Wound care: If patient has surgery, the incisions will need to remain dry for 24-72 hours and they can be washed with soap and water. The incisions should not be submerged in water for 1-2 weeks. If there was no surgery involved, there will be no wound care.

Medicines: None. If surgically treated, patient will be sent home with pain medications.

What to call the doctor for: Monitor for recurrent symptoms that include abdominal pain, vomiting, bloody stools. Drainage from incisions, fever >101F, or increasing belly pain.

Follow-up care: If patient had surgery, your surgeon will see you for a check-up in about 2 weeks. If patient had radiologic reduction, routine follow-up with pediatrician.

Long Term Outcomes - "Are there future conditions to worry about?"

There are usually no long-term complications. However, on average, there is roughly a 5-10% recurrence rate after radiologic enema reduction. Recurrence usually occurs within 6 months of the original episode. If patient had surgery, a potential condition is the development of scar tissue within the abdomen (adhesions) that can lead to bowel obstructions. After surgical reduction of the intussusception, there is also a 5% chance the intussusception can recur if no intestine was removed.

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