Intussusception in Adults

**Overview**

- **Epidemiology**
- Four main subtypes
  - Enteroenteric
  - Ileocolic
  - Ileocecal
  - Colocolonic

- **Etiology**
- **Diagnosis**
- **Treatment**

**Intussusception in Adults**

- Much less common in adults (5% of intussusceptions)
- Often due to a malignancy in adults
  - Usually idiopathic and lacks a lead point in children
  - Nonoperative reduction in children

- Adult colonic intussusception
  - Primary carcinoma 65-70% of cases

- Adult small intestinal intussusception
  - Malignancy 30-35% of cases

**Definition**

- Telescoping of one segment of bowel into an adjacent segment of bowel

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Vasiliadis et al. WJSO 2008

Onkendi et al. JOGS 2011
### Intussusception in Adults

**Etiology (n = 196); Mayo Clinic over 25 years**

- **Primary malignancy** 10%  
  - Colon cancer, small bowel lymphoma
- **Metastases** 10%  
  - Melanoma, lymphoma, SCLC,…
- **Benign neoplasms** 25%  
  - Polyps, lipoma,…
- **Others** 25%  
  - Adhesions, Crohn’s disease, celiac sprue, infection/appendicitis/abscess, Meckel’s,…
- **Idiopathic** 30%  

Onkendi et al. JOGS 2011

### Summary

- **Most have pathologic lead point, requiring surgery**

- **Incidental small bowel intussusception may be observed if:**
  - Asymptomatic
  - No lead point seen

- **Operate if clinical symptoms:**
  - Obstruction
  - Bleeding
  - Palpable mass
Intestinal Malrotation in Adults

Overview
• Epidemiology
• Embryology
• Two main subtypes
  – Nonrotation (classic form)
  – Incomplete rotation
• Presentation
  – Acute obstructive symptoms
  – Chronic obstructive symptoms
  – Atypical symptoms from common disease
• Diagnosis
• Treatment

Epidemiology
• Classically, most often in 1st month of life
• 2.86 per 10,000 live births and fetal deaths
• Recent data suggest nearly half in adulthood!

Embryology
• Midgut herniates into umbilical sac
• 4 wks: gut is straight tube
• 5 wks: loop develops with SMA at its axis
• Three stages of intestinal rotation:
  – 1st stage (5-10 wks): 90-degree counterclockwise rotation of midgut, which returns to abdominal cavity
  – 2nd stage (11 wks): 270-degree counterclockwise rotation, duodenum and small intestine attached posteriorly, ascending colon to right, TV colon above, and descending colon to left
  – 3rd stage: cecum descends, ascending/descending colon attach posteriorly, mesentery fuses and anchors
• Disturbances during any stage can cause abnormal rotation and mesenteric fixation

Fu et al. World J Surg 2007

Effect of Age (n = 170), MGH Experience

Nehra and Goldstein. Surgery 2011

Nehra and Goldstein. Surgery 2011
Intestinal Malrotation in Adults

Effect of Age (n = 170), MGH Experience

- Presenting symptoms

Nehra and Goldstein. Surgery 2011

Types

- Nonrotation (“Classic” type of malrotation)
  - Most common type in adults

Small bowel (SB): entirely on right
Cecum (C): left lower quadrant

- Incomplete rotation

Fu et al. World J Surg 2007

Diagnosis

- UGI combined with BE (gold standard)
  - Duodenal-jejunal junction located to the right or overlying the spine and below the level of the duodenal bulb
  - Malposition of right colon and cecum
  - Corkscrewing of the duodenum or jejunum (volvulus)

- CT
  - Right-sided small bowel, left-sided cecum, inverse relation of the SMV and SMA, aplasia of uninate process (nonrotation)
  - Whirlpool sign: midgut volvulus

- U/S

Fu et al. World J Surg 2007

Treatment

- Ladd procedure (William Ladd, 1936)
  - Counterclockwise detorse the bowel
    - Right colon mobilized, untwisted, positioned in left upper quadrant
  - Divide bands (Ladd’s bands) crossing from cecum to the lateral peritoneal gutter
  - Widen mesenteric base and place colon on left and small bowel on right
    - Lyse adhesions around SMA
    - Remove appendix

- Open or laparoscopic

Nehra and Goldstein. Surgery 2011
Intestinal Malrotation in Adults

Ladd’s Procedure

Nehra and Goldstein. Surgery 2011

• Before
• After

Intestinal Malrotation in Adults

Summary

• More common than previously thought

• Challenging diagnosis
  – Vague abdominal pain
  – Chronic symptoms (years before diagnosis)

• 12% adults have mid-gut volvulus

• 17% adults asymptomatic

• Optimal treatment of asymptomatic adult unclear