The Essentials about Inflammatory Bowel Disease

Art Kastl, MD
Assistant Professor of Clinical Pediatrics
Division of Gastroenterology, Hepatology, and Nutrition

Children's Hospital of Philadelphia™

Perelman School of Medicine
University of Pennsylvania

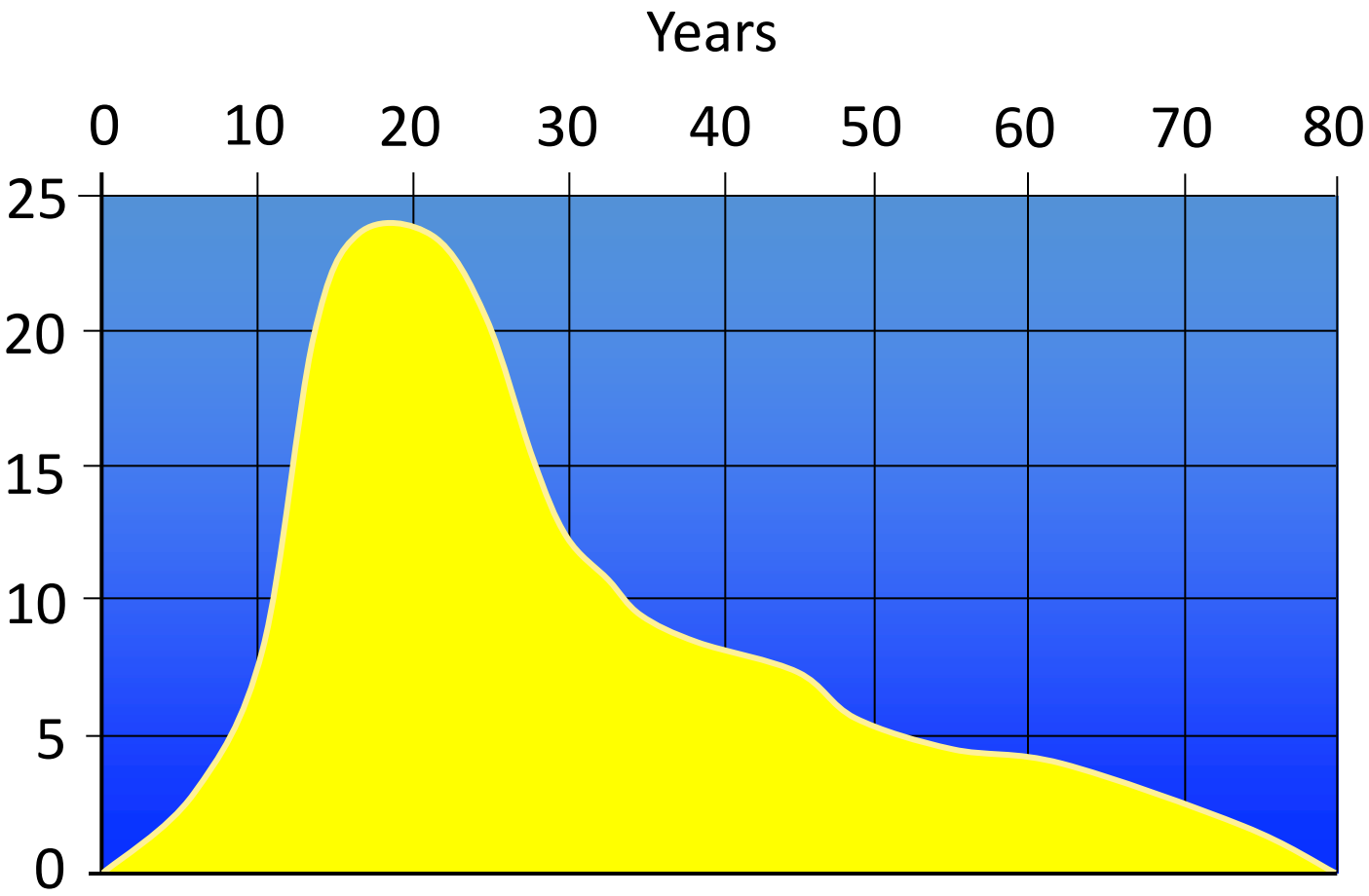
Main Objectives

- Review factors involved in the development of inflammatory bowel disease (IBD)
- Review the clinical presentation of Crohn's disease and ulcerative colitis
- Review common diagnostic testing and monitoring

What is IBD?

- Disease of long-lasting (chronic) inflammation in the gastrointestinal tract
  - Driven by cells of the immune system
  - Can have periods of relapse/“flaring”
- Crohn’s disease and ulcerative colitis are both types of IBD
  - More likely a spectrum of disease

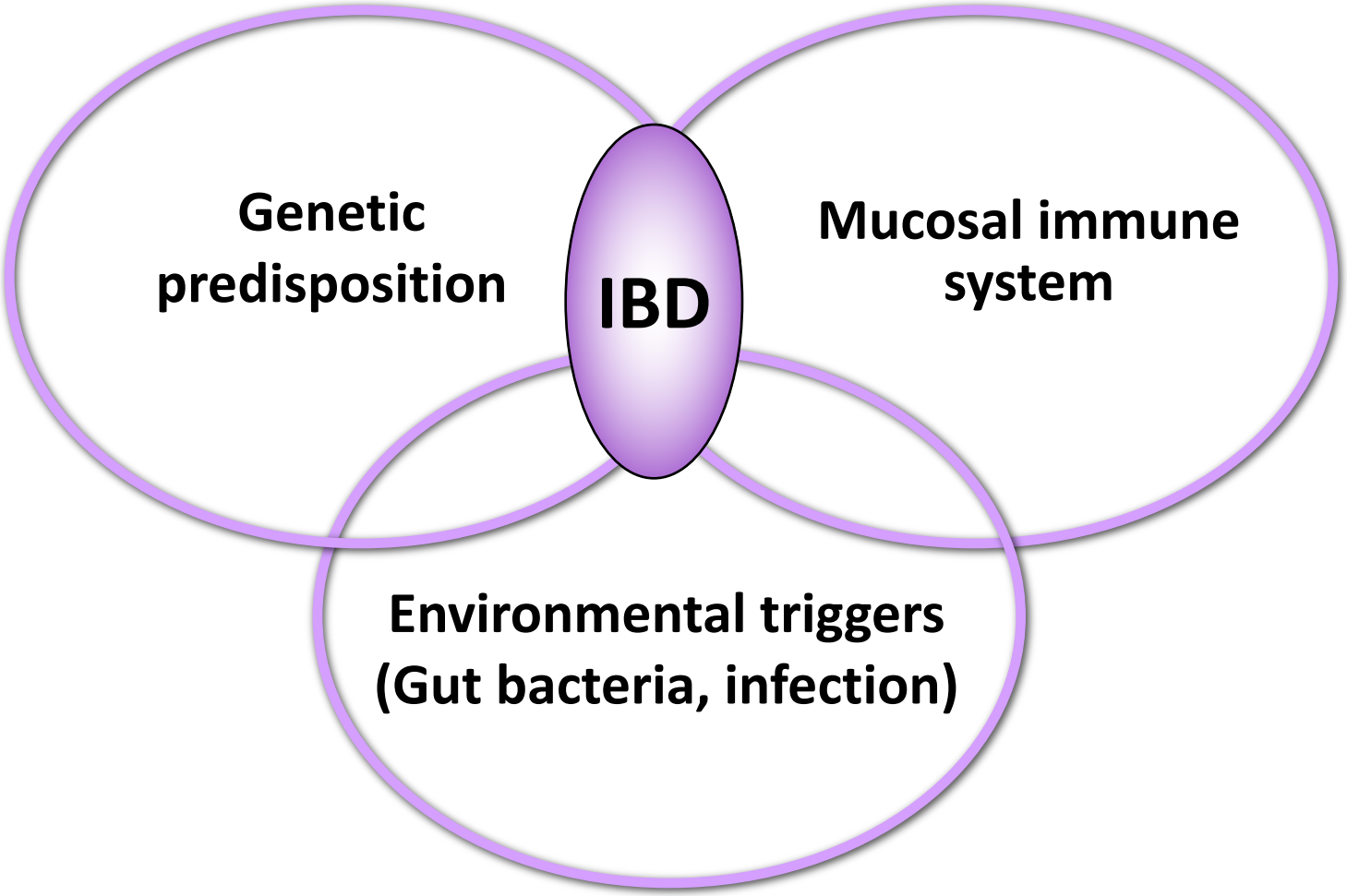
Age of Onset of IBD



20-25% of IBD cases diagnosed by 20 years

Loftus *Gastroenterology* 2003, abstract

Why does IBD occur?



Crohn's Disease vs. Ulcerative Colitis

Crohn's Disease

- Any part of the GI tract
- Discontinuous
- Ileum commonly involved
- Transmural inflammation
- Fistulae and abscesses
- Granulomas

Ulcerative Colitis

- Colon only (± gastritis)
- Continuous
- ± backwash ileitis
- Mucosal inflammation
- Abscesses very rare
- No granulomas

Common Symptoms of Crohn's Disease and Ulcerative Colitis

Symptoms/Signs	CD	UC
Rectal bleeding	++	++++
Diarrhea	++	++++
Weight loss	++++	++
Growth failure	++++	+
Perianal disease	++	-
Abdominal pain	++++	+++
Anemia	+++	+++
Mouth ulcers	++	+
Fevers/Arthritis	++	+

Common Laboratory Testing

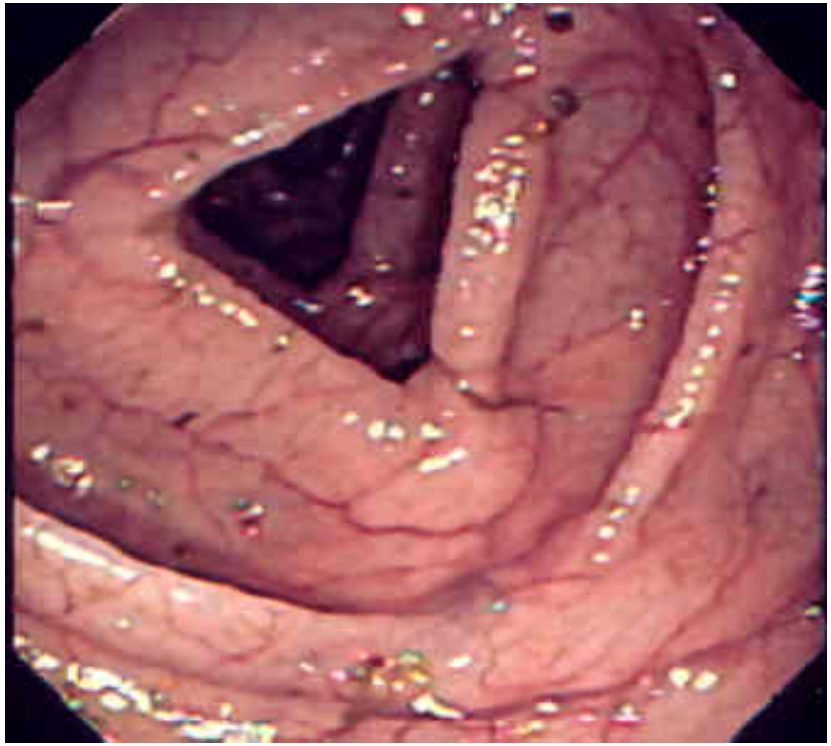
Blood testing

- CBC (complete blood count)
  - Hemoglobin (low: anemia)
  - WBC (high: infection, inflammation)
  - Platelets (high: inflammation)
- CMP (complete metabolic panel)
  - Assess electrolytes, liver, kidney function
  - Albumin (low with intestinal inflammation, malnourished)
- ESR/CRP
  - Markers of inflammation
- Vitamin D, iron

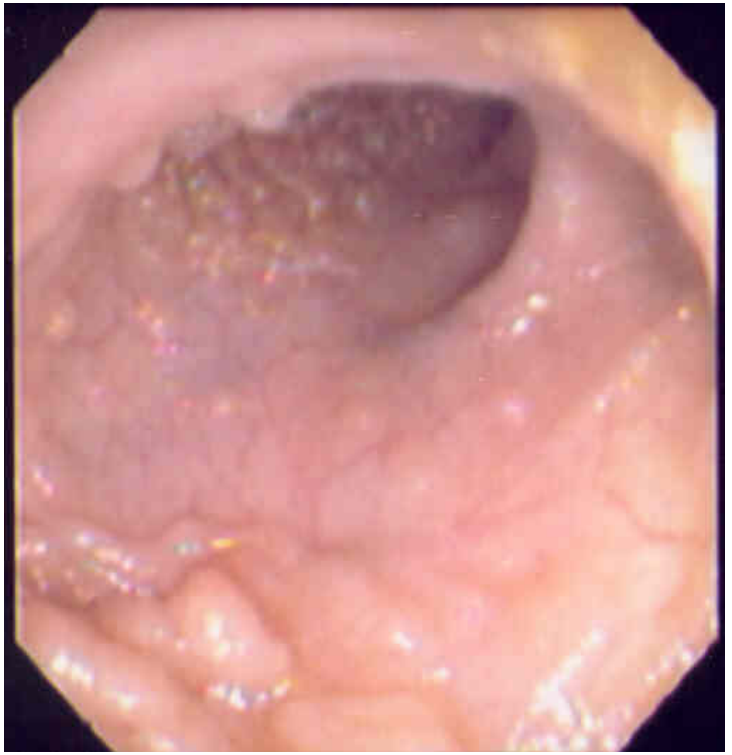
Stool testing

- Rule out enteric infections
  - Culture for bacteria
  - Clostridioides difficile
  - Viral stool studies
  - Parasites
- Calprotectin
  - Sensitive marker of gut inflammation

Normal Endoscopic Appearance

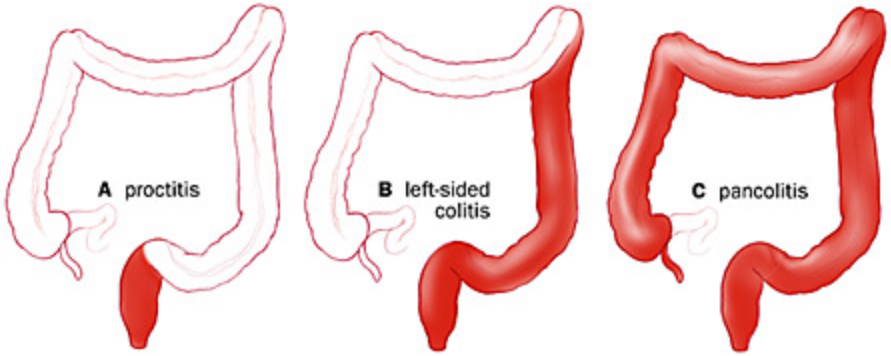


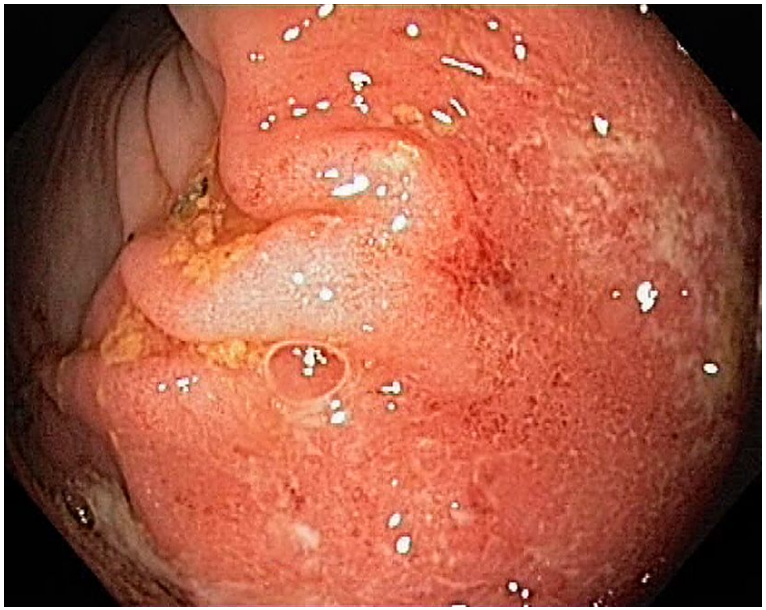
Colon



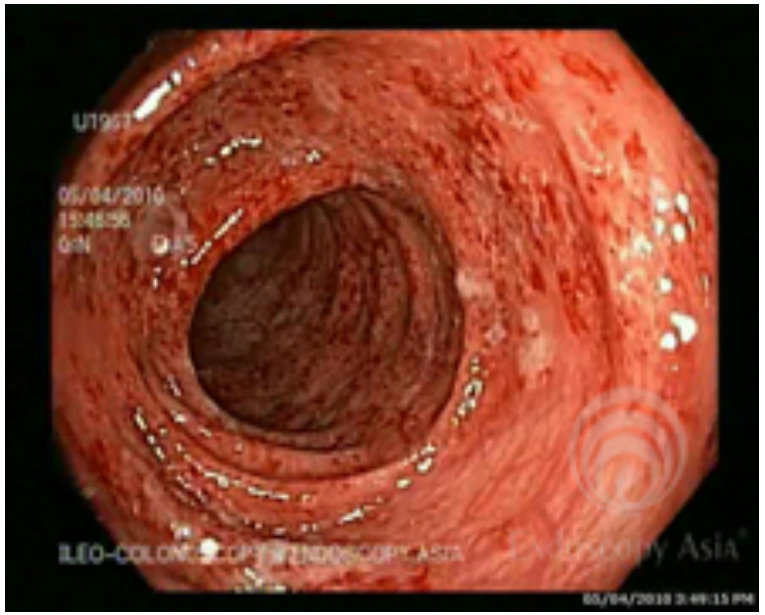
Terminal Ileum

Ulcerative Colitis: Endoscopy



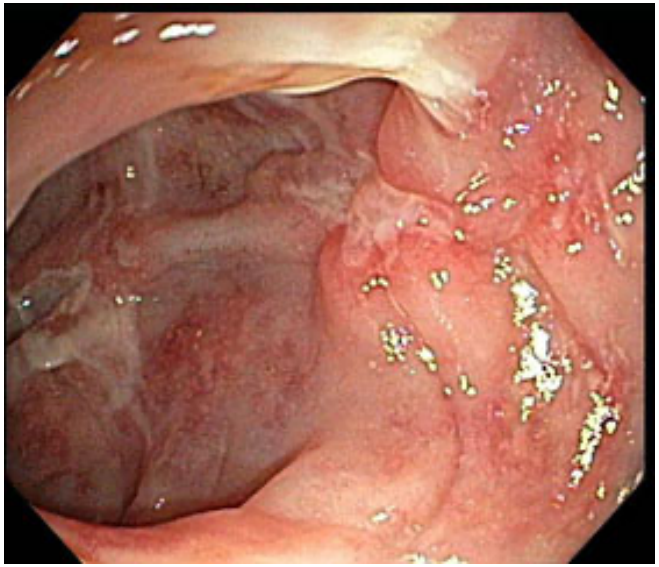


Colitis with Transition Zone

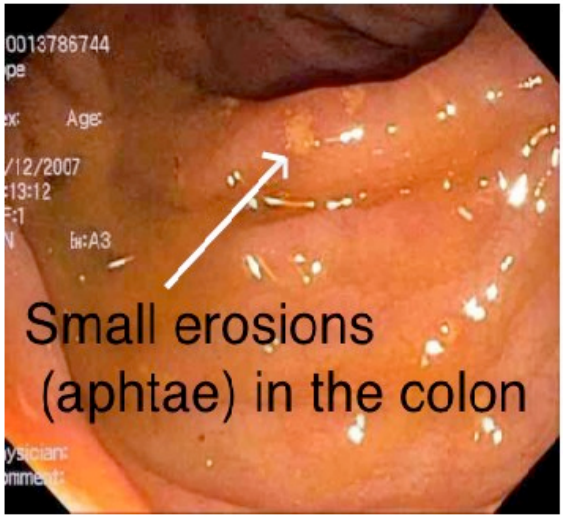


Pancolitis

Crohn's Disease: Endoscopy

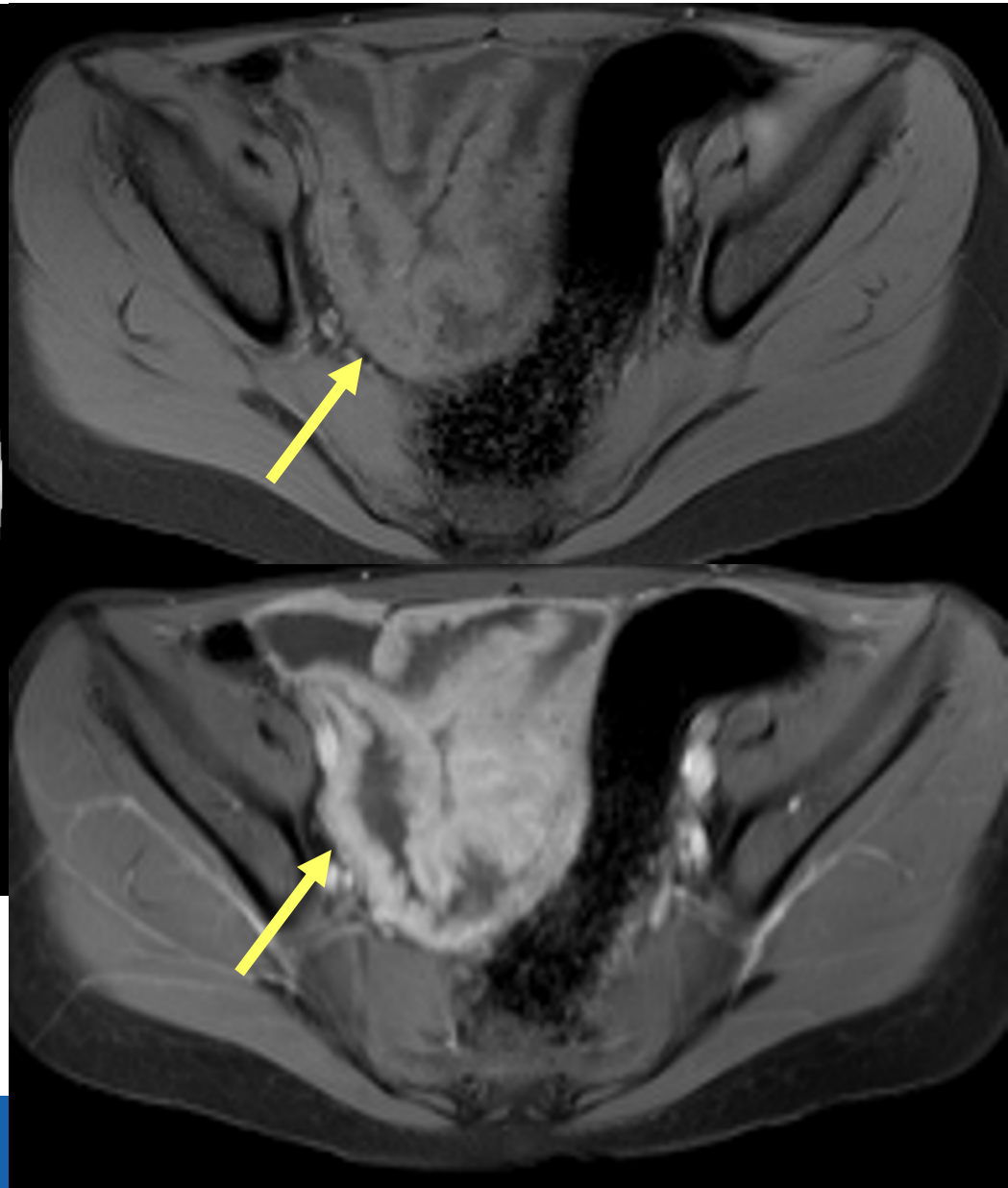


Patchy Colitis, linear ulceration



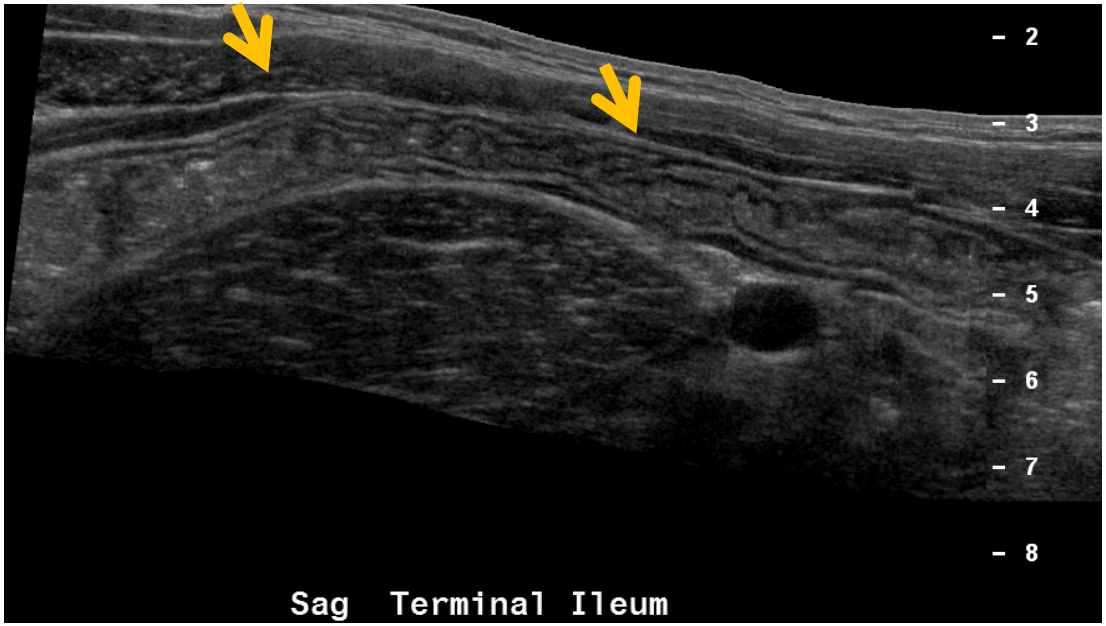
Crohn's ileitis

UGISBFT Compared to MR Enterography

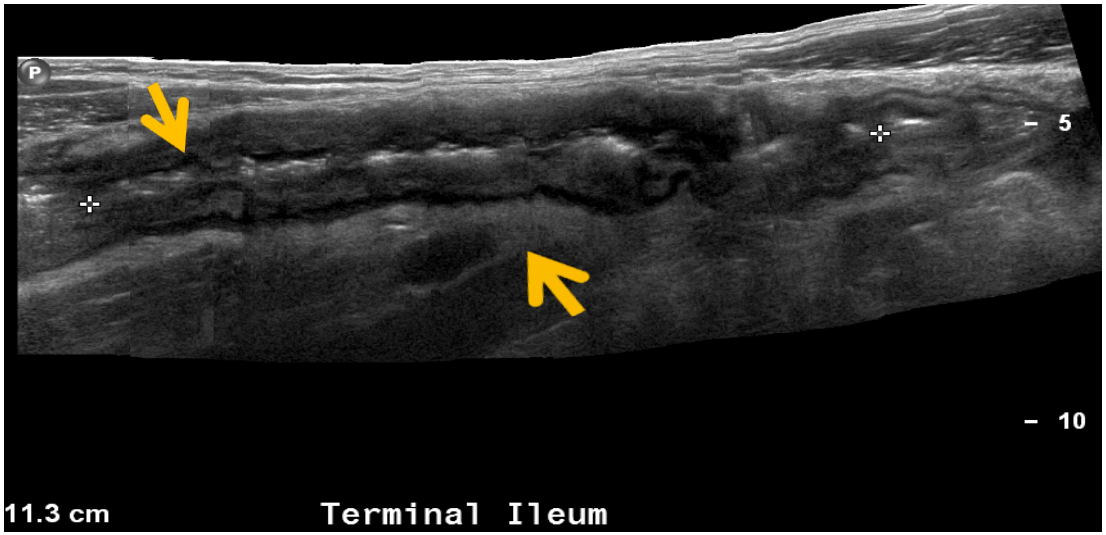


Abnormal TI on SBFT with correlation on MRI before and after contrast

Ultrasound of the Bowel

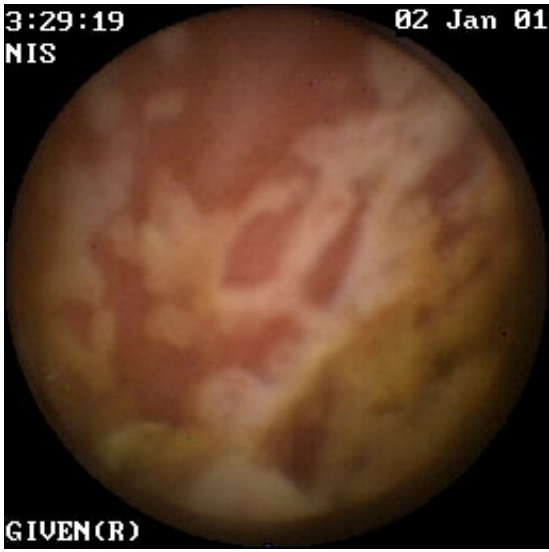


NORMAL TI

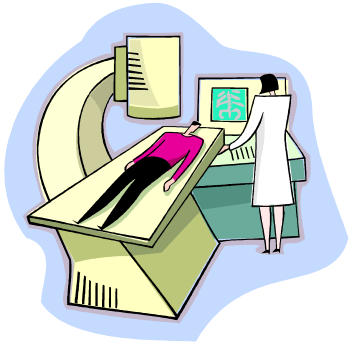


ABNORMAL TI

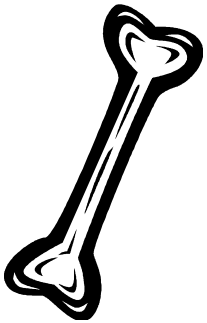
Capsule Endoscopy



- Relatively easy to swallow
  - Placed during upper endoscopy in younger patients
- Can visualize entire small bowel
- Must rule out intestinal stricture prior to placement



Bone Monitoring



- Decreased bone density recognized in pediatric IBD
- DXA scan
  - Done at diagnosis and repeated when clinically indicated
- Vitamin D
- Calcium
- Increased physical activity

Summary

- Genetic, immune system, and environmental factors each play a role in the development of IBD.

- Crohn's disease and ulcerative colitis are the two main types of IBD, with overlapping symptoms.

- Symptoms, growth, blood tests, stool tests, radiological testing, and endoscopy are used to diagnose and monitor IBD.

Thank you!