Diseases of the Colon

I have no disclosures

I work for the Curators of the University of Missouri
Inflammatory Bowel Disease

ULCERATIVE COLITIS

Mucosal Ulceration in Colon

CROHN’S DISEASE

Transmural Inflammation

Ileocolitis

Ileitis

Colitis
Approximately equal incidence among males and females
10%-25% of relatives affected
Strong concordance in disease type among family members
Inflammatory Bowel Disease

Etiology

- Smoking
  - Exacerbates Crohn’s disease
  - Protects against ulcerative colitis
    - Reasons are unknown
# Inflammatory Bowel Disease

## Distinguishing Features

<table>
<thead>
<tr>
<th></th>
<th>Ulcerative Colitis</th>
<th>Crohn’s Disease</th>
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<tbody>
<tr>
<td>Bleeding</td>
<td>++++</td>
<td>+</td>
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<tr>
<td>Tenesmus</td>
<td>++++</td>
<td>++</td>
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<tr>
<td>Abdominal Pain</td>
<td>+</td>
<td>+++</td>
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<tr>
<td>Fever</td>
<td>+</td>
<td>++</td>
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<tr>
<td>Weight Loss</td>
<td>+</td>
<td>++</td>
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<tr>
<td>Perineal Disease</td>
<td>0</td>
<td>+++</td>
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<td>Fistulas</td>
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</table>
Inflammatory Bowel Disease
Distinguishing Features

**Ulcerative Colitis**
- Limited to colon
- Continuous inflammation
- Mucosal involvement only
- Diffuse inflammation

**Crohn’s Disease**
- Any part of the GI Tract
- Discontinuous, focal lesions
- Transmural involvement
- Focal inflammation
- Granulomas

**Indeterminate Colitis**
Ulcerative Colitis
Diagnosis

- Endoscopic Features
  - Loss of vascular markings
  - Diffuse erythema
  - Exudate
  - Hemorrhage
ENDOSCOPIC SPECTRUM OF PROCTOCOLITIS

Mild
Moderate
Severe
Crohn’s Disease
Clinical Features

- Chronic abdominal pain
- Diarrhea
- Perineal disease
- Distension
- Weight loss
- Fever
- Rectal bleeding (variable)
- Growth failure
Crohn’s Disease
Clinical Features

- Obstruction
- Appendicitis-like presentation
- Fistulas
- Abscesses
- Gallstones
- Nephrolithiasis
- Steatorrhea
Inflammatory Bowel Disease
Clinical Features

- Toxic Megacolon
  - Edema of the bowel wall
Inflammatory Bowel Disease
Clinical Features

Toxic Megacolon
- Edema of the bowel wall
Inflammatory Bowel Disease
Clinical Features

- Extraintestinal Manifestations
  - Skin
  - Joints
  - Eyes
  - Liver
  - Thromboembolic
Ulcerative Colitis
Systemic Complications in SKIN

Erythema Nodosum

Pyoderma Gangrenosum
Distinguishing Features

- Multiple
- Arises from flat mucosa
- Infiltrates broadly
- Uniformly distributed
- Anaplastic
- Younger age
Ulcerative Colitis
Systemic Complications

Peripheral Arthritis

- Monoarticular
- Asymmetrical
- Large > small joint
- No synovial destruction
- No subcutaneous nodules
- Seronegative
Ulcerative Colitis
Indications for Surgery

- Exanguinating hemorrhage
- Toxicity and/or perforation
- Suspected cancer
- Significant dysplasia
- Growth retardation
- Systemic complications
- Intractability
Crohn’s Disease
Intestinal Complications

Fistula

- Mesenteric
- Entero-enteric
- Entero-vesical
- Retroperitoneal
- Entero-cutaneous
Crohn’s Disease
Endoscopic Appearances

- Aphthae
- Stellate Ulcer
- Longitudinal Ulcer
- Pseudopolyp
Crohn’s Disease
Endoscopic Appearances

Aphthae

Stellate Ulcer

Longitudinal Ulcer

Pseudopolyps
CROHN’S DISEASE

Ileitis

“String Sign”
Inflammatory Bowel Disease

Ethnic and Racial Incidence

Incidence per $10^5$ population

- Jews
- Non-Jewish Caucasians
- Blacks
Inflammatory Bowel Disease Management

- **Anti-inflammatories**
  - 5-ASA agents
    - Sulfasalazine
    - Mesalamine
    - Olsalazine
  - Corticosteroids

- **Immunosuppressives**
  - 6-Mercaptopurine
  - Azathioprine

- **Antibiotics**
  - Metronidazole
  - Quinolones

- **Antidiarreals**
  - Loperamide hydrochloride
  - Diphenoxylate with atropine
  - Cholestyramine

- **Biologics**
Inflammatory Bowel Disease Management

- Proctitis
  - Mesalamine suppositories/enemas
  - Steroid foams/enemas

- Distal colitis
  - Mesalamine enemas
  - Steroid enemas
  - Sulfasalazine
  - Oral mesalamine
Sulfasalazine

SULFAPYRIDINE

5-AMINOSALICYLATE
Crohn’s Disease
Management
Drug Therapy

Gastroduodenal
- Prednisone
- 6-Mercaptopurine (6-MP) /azathioprine
- Omeprazole

Ileal
- Budesonide
- Prednisone
- Sulfasalazine
- Mesalamine
- 6-MP/azathioprine

Colitis
- Distal
  - 5-ASA enemas
  - Steroid enemas
- > 60 cm
  - Sulfasalazine
  - Mesalamine
  - Metronidazole
  - Prednizone
- Severe
  - Prednisone
  - parenteral steroids
  - Antibiotics

Perineal
- Metronidazole
- Ciprofloxacin
- 6-MP

Remission
- 6-MP/azathioprine
- Oral Mesalamine
- Methotrexate

Biologics
When to Use AZA/6-MP in IBD:
Evidence-based indications

- Steroid-dependent disease¹
- Steroid-resistant disease¹
- Relapse prevention²
- Perianal disease³
- Fistulizing disease³
- Post-operative recurrence prevention⁴
- Prevention of Colectomy for UC After Induction with CsA⁵

TNF

- An early, pivotal mediator of inflammation
- A pro-inflammatory molecule that activates the “master switch” nuclear factor KB which lends to further production of other pro-inflammatory cytokines
- Recruitment of inflammatory cells by up-regulation of adhesion molecules (cell trafficking)
Infliximab

- IgG1 MAB
- Binds to TNF both soluble and transmembrane
- Accent I - conducted to determine whether maintenance Infliximab provides better long-term efficacy than no further treatment in people with Crohn’s disease who responded to one dose
Diarrhea is both a sign & symptom

- As a Symptom
  - ↑ Frequency
  - ↑ Volume
  - ↓ Consistency

- As a Sign
  - Stool weight > 150 to 200 g per 24 hr.
  - Stool water > 150 to 200 ml per 24 hr.
History is helpful in evaluating patients with diarrhea

- **History:**
  - Duration, travel history, medications, patient age, diet

- **Character:**
  - Frequency, volume, blood, consistency

- **Other manifestations:**
  - Fever, weight loss, anorexia, nausea, vomiting, dehydration
Features of diarrhea provide clues to the pathophysiological process

- **Features**
  - Blood, pus in stool
  - Large volume (>1 liter/day)
  - Effects of fasting:
    - Diarrhea persists
    - Decrease in diarrhea
  - Stool pH (<6)

- **Possible mechanism**
  - Colonic & rectal inflammation
  - Active secretion
  - Not a dietary factor
  - Non-absorbed carbohydrate in children
Chronic and recurrent diarrhea should always be investigated

History & physical exam

- **Stool exam:**
  - Cultures, ova & parasites
  - Blood, leukocytes, microscopic fat
  - Quantitative volumes and fat studies as indicated

- **Other studies:**
  - Endoscopic examinations w/biopsy
  - Absorption studies
  - Special studies:
    - Imaging studies (CAT scans, ultrasound, etc.)
    - Barium studies
    - Stool and urine analyses for laxative & diuretics
Lower GI Bleeding
Yield of Urgent Colonoscopy

Massive Hematochezia → Colonoscopy

- 60-70% continue bleeding
- 20-30% Controlled
- No lesion found or Failed therapy → Endoscopic therapy
- Stop spontaneously
- Surgery
- Controlled with angiography
Lower GI Bleeding Options

- **Diagnostic**
  - Anoscopy
  - Sigmoidoscopy
  - Colonoscopy
  - Balloon Enteroscopy
  - Small Bowel x-ray
  - Scintigraphy
  - Angiography
  - Intra-operative Endoscopy

- **Therapeutic**
  - Endoscopic
    - Thermal
    - Injection
    - Polypectomey
    - Argon Plasma coag.
  - Angiographic
    - Vasopressin
  - Surgery
Lower GI Bleeding

Massive

Resuscitation

Upper endoscopy
Anoscopy

Oral purge

Urgent colonoscopy

Lesion found
Endoscopic hemostasis

Continued bleeding
Surgery

No Lesion found
Scintigraphy, angiography, enteroscopy
Diverticular Disease - Bleeding

Colonic lumen
Microscopic Colitis

- Collagenous and lymphocytic
- Chronic watery diarrhea
- Normal endoscopic appearance
- Female, 50-70 years old
- Collagen band/lymphocyte infiltration
- Treatment - bismuth subsalicylate
- Treatment - budesonide
Pneumatosis Coli (Pneumatosis Cystoides Intestinalis)

- Multiple gas filled cysts in the sub mucosa of the gut
- Distinguish from pneumatosis linearis
- Most cases occur in small bowel
- 6% occur in the colon - usually left side
- Associated conditions - appendicitis, IBD, diverticulosis, c. diff., colitis, ileus, AIDS, steroids, COPD
Colitis Cystica Profunda

- Mucin-filled cysts located in sub mucosa of bowel
- 3 patterns
  - Localized with ploypoid lesion
  - Diffuse with multiple polypoid lesions
  - Diffuse with a confluent sheet of cysts
    - Etiology: unknown, associated with diseases that predispose to ulceration – IBD, infections, or cancer
    - Presents with bleeding, mucus, diarrhea or prolapsed rectum
    - Endoscopy – may look like cancer, polyps, lipoma
Endometrosis (of the intestines)

- Usually involves the rectosigmoid, appendix or ileum
- Most asymptomatic, can bleed, cause pain
- Differential - IBD, diverticulitis, TB, ischemia, neoplasia
Solitary Rectal Ulcer Syndrome (SRUS)

- Disorder of evacuation
- Causes rectal ulceration, erythema or mass associated with straining, rectal prolapse
- Found on anterior wall or rectum
- Symptoms - constipation, mucus, blood
- Diagnosis is by histology
- Treatment - improve bowel habits, biofeedback