Libyan International Medical University
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PBL-I

Zuhir Bodalal

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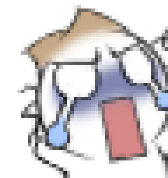
Right Iliac Fossa Pain

RLQ	SUPRAPUBIC	LLQ
Gastrointestinal Appendicitis Appendiceal Phlegmon (post perforated appendicitis) Crohn's Disease Typhlitis (in immunosuppressed/ chemo patients) Tuberculosis of the ileocecal junction Cecal tumour Intussusception Mesenteric Lympadenitis Cecal Diverticulitis Cecal Volvulus Hernia: Amyands, Femoral, Inguinal Obstruction (and resulting cecal distention) **Gynecological** See 'suprapubic' **Genitourinary** See 'suprapubic' **Extraperitoneal** Abdominal wall hematoma/abscess Psoas Abscess **Hepatosplenomegaly**	**Gastrointestinal** Any etiology in either of the lower quadrants Acute appendicitis IBD **Gynecological** Mittelschmirtz (Ruptured Graffian Follicle) PID Ectopic Pregnancy Ovarian Torsion Hemorrhagic Fibroid Endometriosis Threatened/Incomplete Abortion Tubo-Ovarian Abscess Hydrosalphinx/Salpingitis Gynecological Tumours **Genitourinary** Cystitis (infectious, hemmorhagic) Hydroureter/Urinary Colic Epididymitis Testicular Torsion Acute Urinary Retention **Vascular** IVC thrombus **Extraperitoneal** rectus sheath hematoma (localized to midline)	**Gastrointestinal** Diverticulitis Diverticulosis Colon/Sigmoid/Rectal Ca Fecal Impaction Proctitis (Ulcerative Colitis, infectious; i.e. gonococcus or chlamydia) Sigmoid Volvulus **See gynecological, urological, vascular and extraperitoneal as per RLQ and suprapubic**



Differences between Crohn's and UC

	Crohn's Disease	Ulcerative Colitis
Location	Any part of GI tract • Small bowel + colon: 50% • Small bowel only: 30% • Colon only: 20%	Isolated to large bowel Always involves rectum, may progress proximally
Rectal Bleeding	Uncommon	Very common (90%)
Diarrhea	Less prevalent	Frequent small stools
Abdominal Pain	Post-prandial/colicky	Pre-defecatory urgency
Fever	Common	Uncommon
Palpable Mass	Frequent (25%), RLQ	Rare (if present, cecum full of stool)
Recurrent After Surgery	Common	None post-colectomy
Endoscopic Features	Discrete aphthous ulcers, patchy lesions, pseudo polyps	Continuous diffuse inflammation, erythema, friability, loss of normal vascular pattern, pseudopolyps
Histologic Features	Transmural distribution with skip lesions Focal inflammation ± noncaseating granulomas, deep fissuring & aphthous ulcerations, strictures Glands intact	Mucosal distribution, continuous disease (no skip lesions) Granulomas absent Gland destruction, crypt abscess
Radiologic Features	Cobblestone mucosa Frequent strictures and fistulae XR: Bowel wall thickening "string sign"	Lack of haustra Strictures rare and suggests complicating cancer
Complications	Strictures, fistulae, perianal disease, abscesses	Toxic megacolon
Colon Cancer Risk	Increased from general population	More than general population

Characteristic Features in Diarrhea

Diarrhoea

- increased liquidity or decreased consistency of stools
- acute:
  - usually due to drugs or infections
  - Non-inflammatory: Watery, nonbloody diarrhea
  - Inflammatory: The presence of fever and bloody diarrhea
  - Enteric: severe systemic illness

Diarrhoea

- Chronic:
  - Osmotic: results when poorly absorbed osmotically active solutes are present in the gut lumen
  - Mal-absorptive
  - Secretory: Increased intestinal ion secretion or decreased ion absorption
  - Inflammatory
  - Motility disorders: abnormal intestinal motility secondary to systemic disorders or surgery
  - Chronic infections: Giardia and E histolytica

Rectal Bleeding

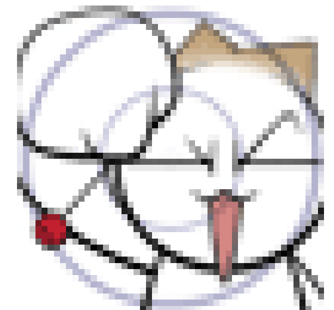
Acute

- infectious
- bacterial, parasitic, antibiotic-induced (C. *difficile*)
- necrotizing entercolitis in preterm infants
- anatomic
  - malrotation / volvulus, intussusception
  - Meckel's diverticulitis
  - anal fissures, hemorroids
- vascular / hematologic
  - Henoch-Schönlein Purpura (HSP)
  - hemolytic uremic syndrome (HUS)
  - coagulopathy

Chronic

- anal fissures (most common)
- colitis
- inflammatory bowel disease (IBD)
- allergic (milk protein)
- structural
  - polyps (most are hamartomas)
  - neoplasms (rare)
- coagulopathy

Relax and Take a Break

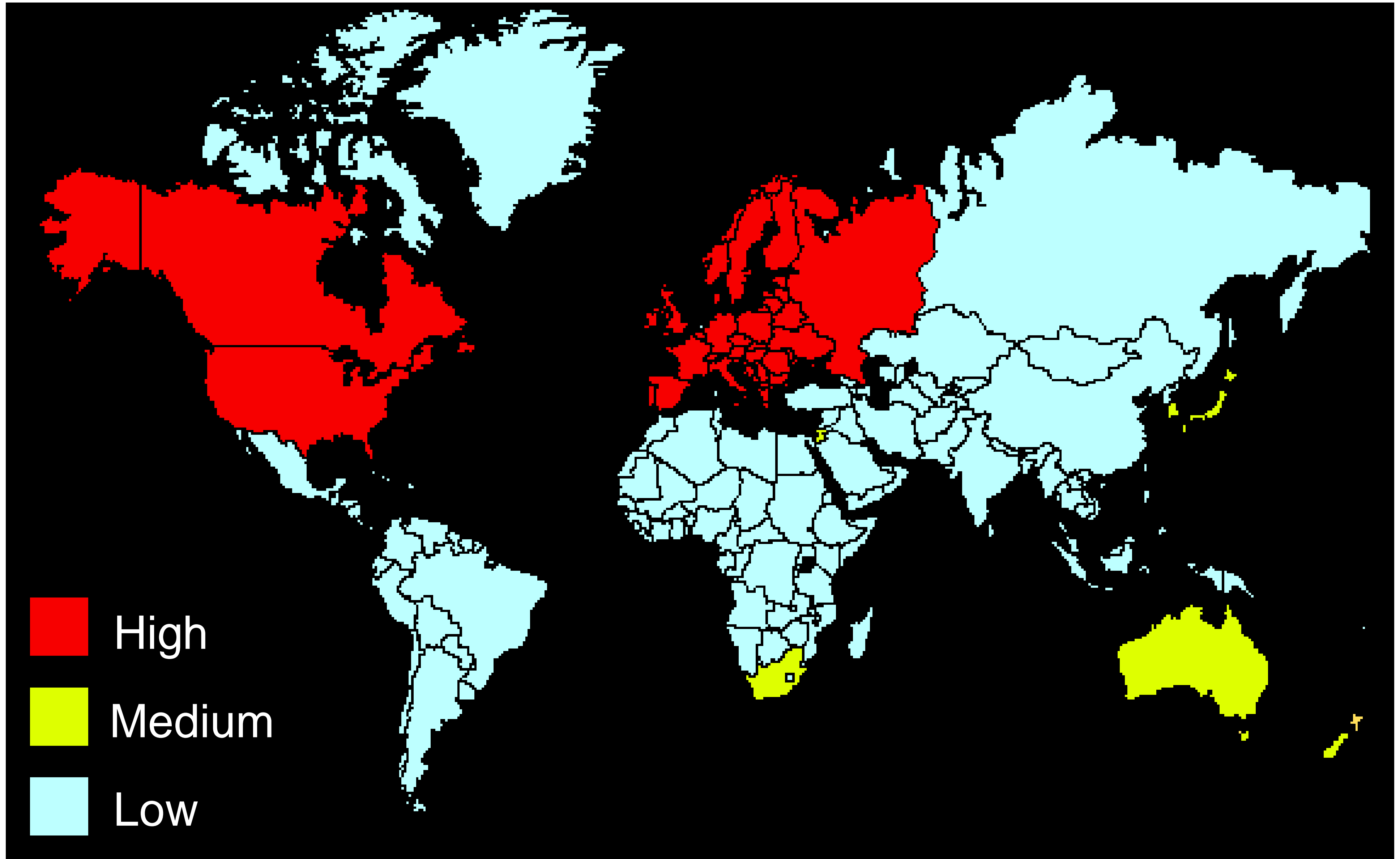


Inflammatory Bowel Disease

Inflammatory Bowel Disease

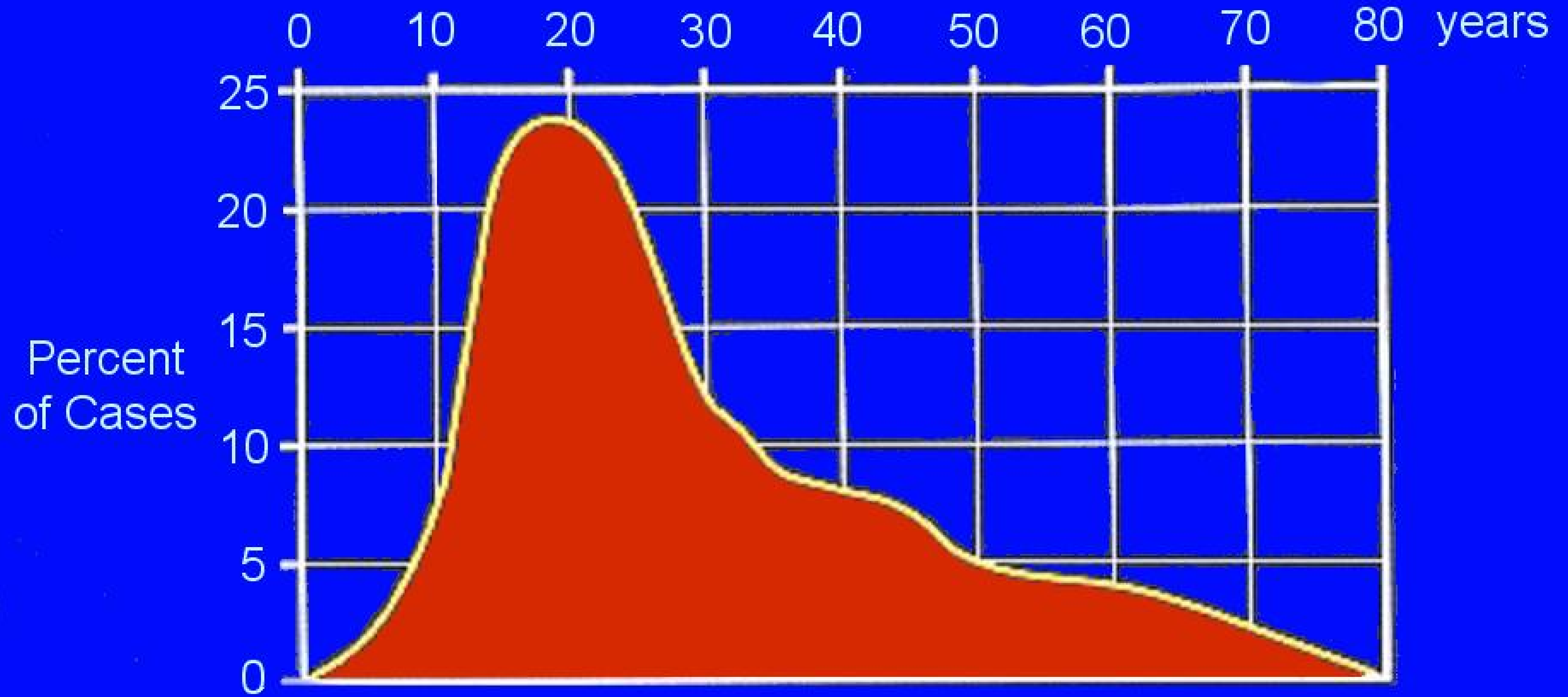
- Ulcerative colitis - nonspecific inflammatory bowel disease of unknown etiology that effects the mucosa of the colon and rectum
- Crohn's disease - nonspecific inflammatory bowel disease that may affect any segment of the gastrointestinal tract
- Indeterminate colitis
  - 15% patients with IBD impossible to differentiate

Global Prevalence of IBD



Inflammatory Bowel Disease

Age of Onset



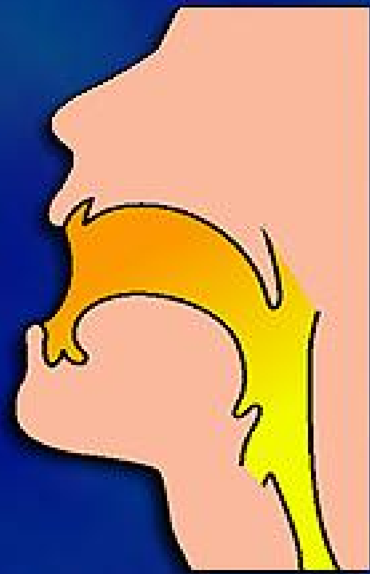
Clinical Features

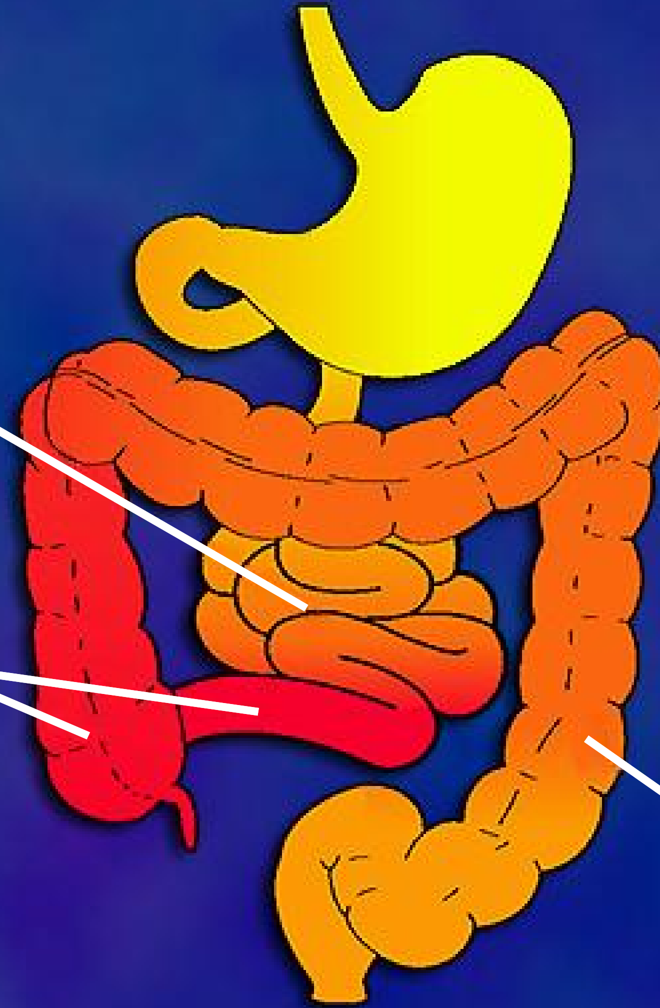
- All sites:
  - Diarrhoea, abdomenal pain, and Wt loss
  - Fever, malaise, anorexia
  - Wt loss alone

Clinical Features

- Small intestine:
  - Aphthous ulcers
  - Duodenal ulcers
  - Abdominal pain
  - Malnutrition
  - Malabsorption
  - Abdominal mass

Crohn's Disease: Anatomic Distribution





CD - Distinguishing Features

Strictures

Granuloma

Endoscopic features

Asymmetric involvement

Focal lesions

Skip lesions

Small bowel involvement

Fistulization

20-30% without gross bleeding

Rectal sparing

Perineal disease

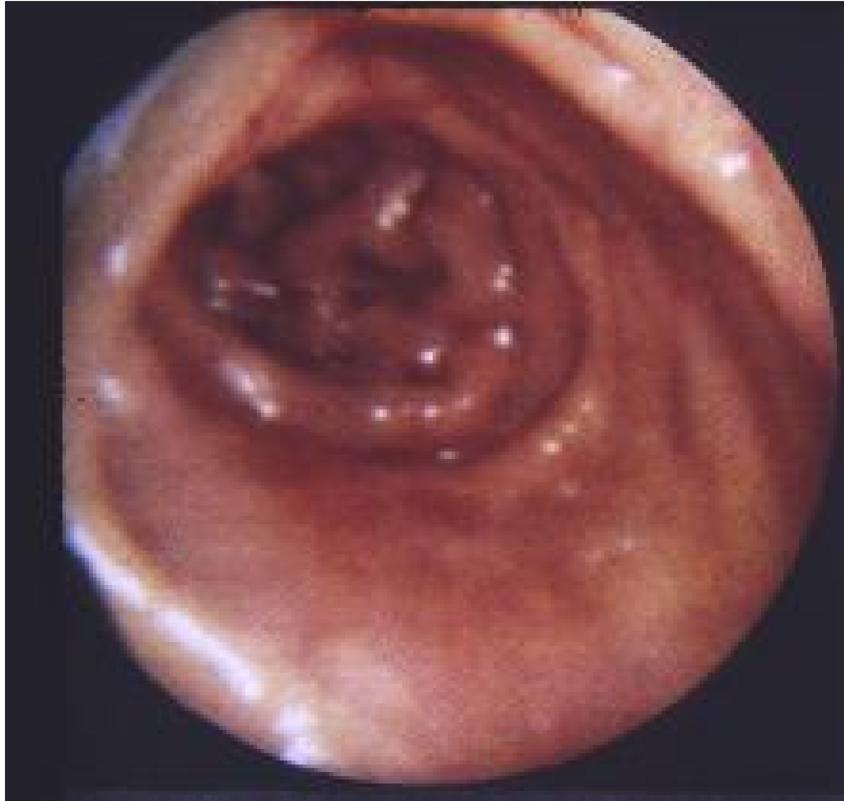
Clinical Features

- Colonic disease:
  - Severe diarrhoea
  - Rectal bleeding
  - Peri-anal disease
  - Toxic dilatation
  - Extra-intestinal manifestations

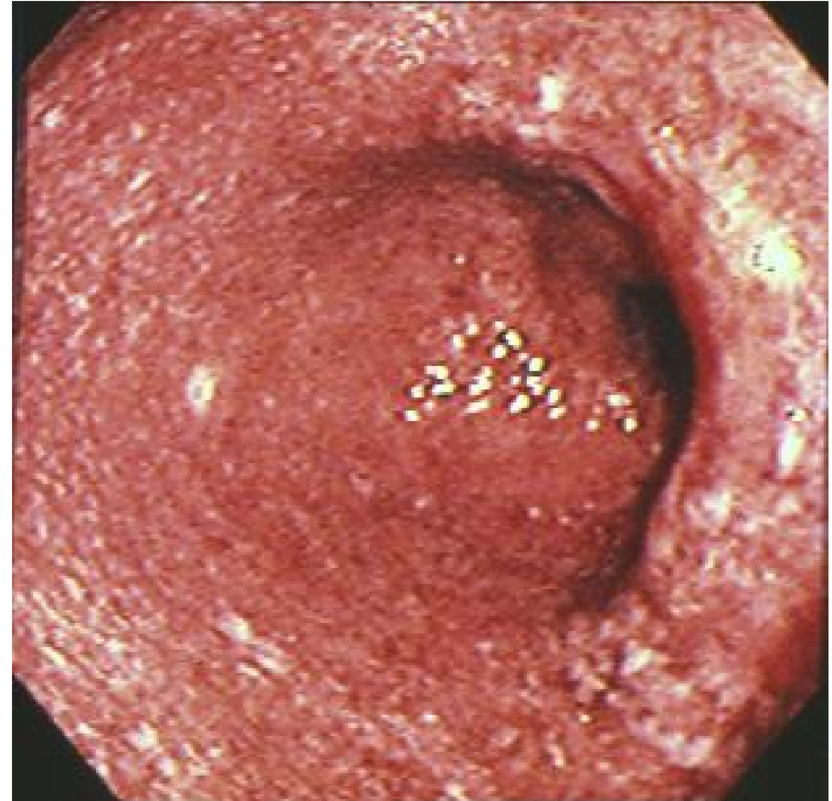
Clinical features

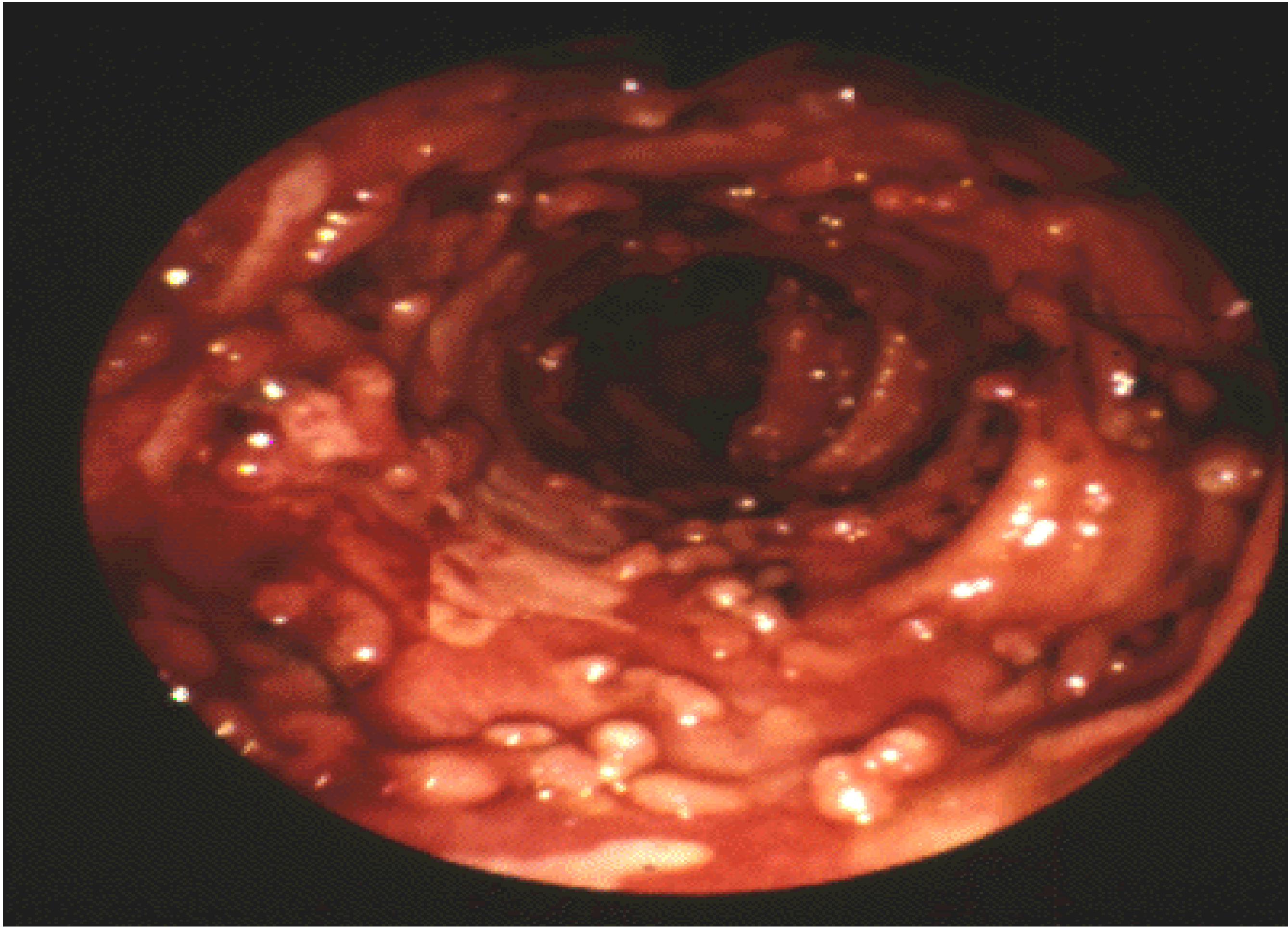
- Peri-anal disease
  - Associated with ileo-colonic disease
  - Recurrent abscesses and fistulae
  - Anal or rectal stenosis

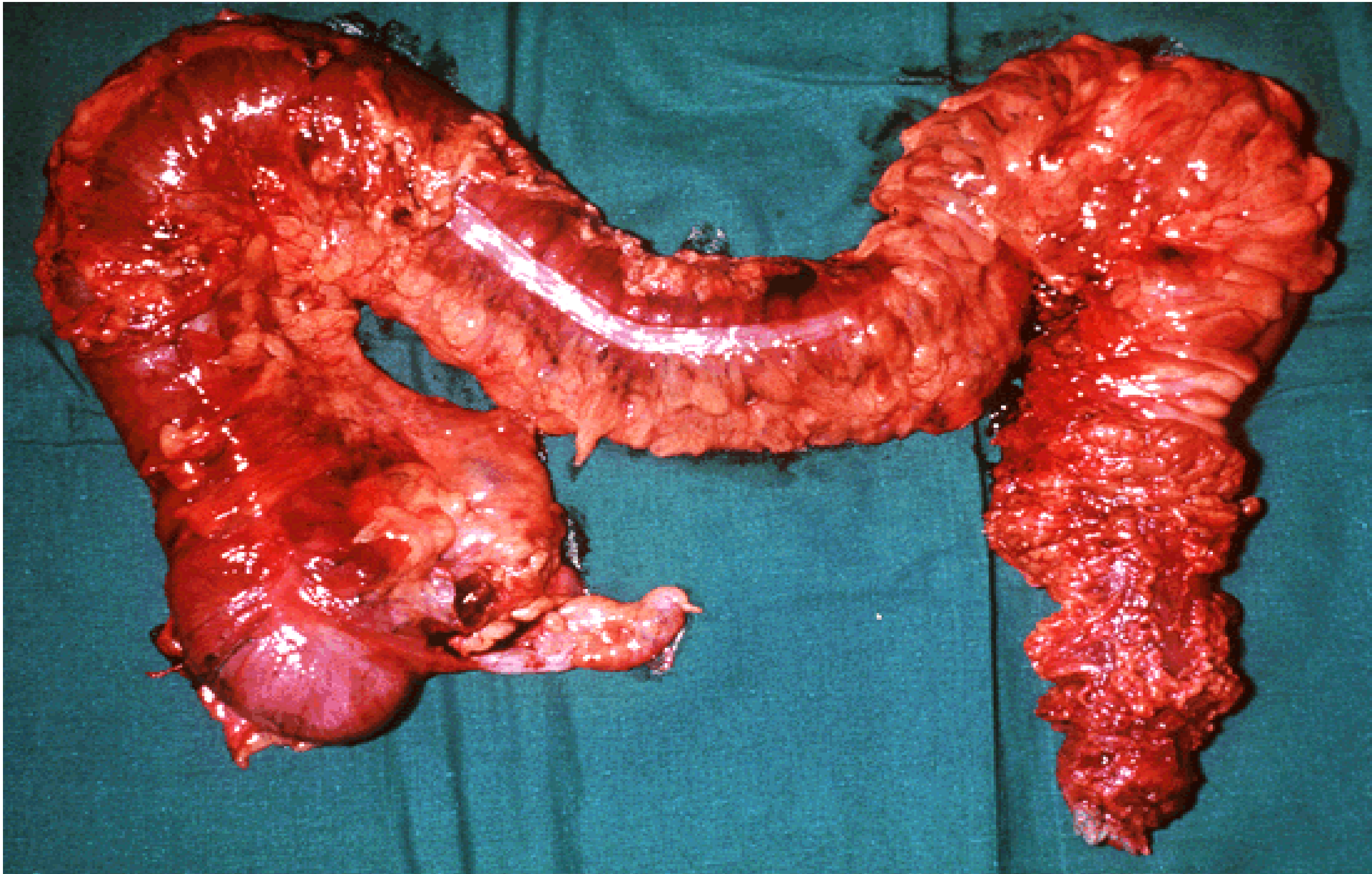
Normal



Ulcerative Colitis







DD

- Infective diarrhoea (Salmonella, Shigella, Compylobacter, entamoeba histolytica)
- Ischaemic colitis
- Radiation colitis
- Pseudomembranous colitits
- Diverticular disease
- Irritable bowel syndrome

Investigations

- Routine blood
  - CBC, ESR, CRP,LFT, U&C, electrolytes
  - Iron, B12 and folate

- Barium enema
- Small bowel radiology
- Sigmoidoscopy
- Colonoscopy and biopsies
- Capsule endoscopy
- Ultrasound scan
- Technitium or Indium Labelled WC scan

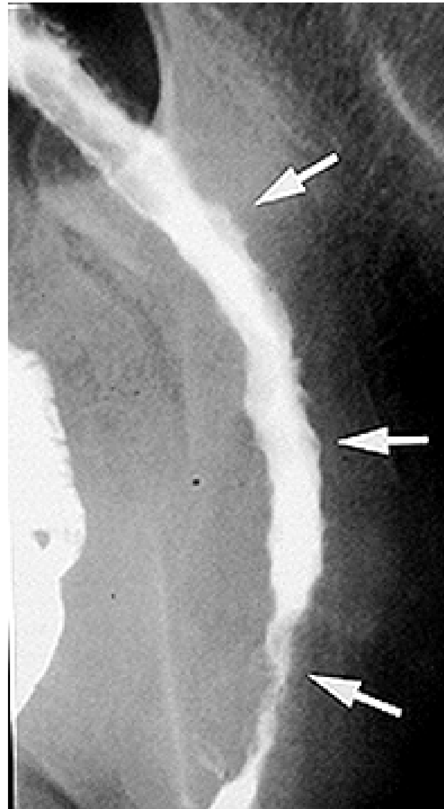
Investigations

- Stool
- Laparotomy

Radiological Features of Crohns Disease

- Strictures, fistulae, dilatation, mass effect, pseudo-diverticulae
- Aphthous ulcers, cobblestoning, pseudopolyps, linear ulcers and thickened mucosa

Crohn's Dx – String Sign

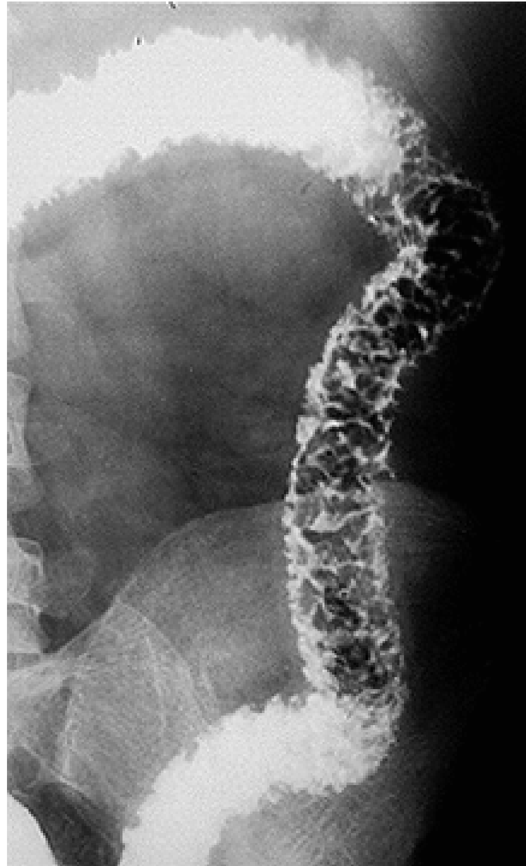


String sign in Crohn's disease Small bowel follow through study shows marked narrowing, irregularity and ulceration in the distal ileum (arrows) in a patient with Crohn's disease. Courtesy of Jonathan Kruskal, MD, PhD.

Radiological Features of Ulcerative Colitis

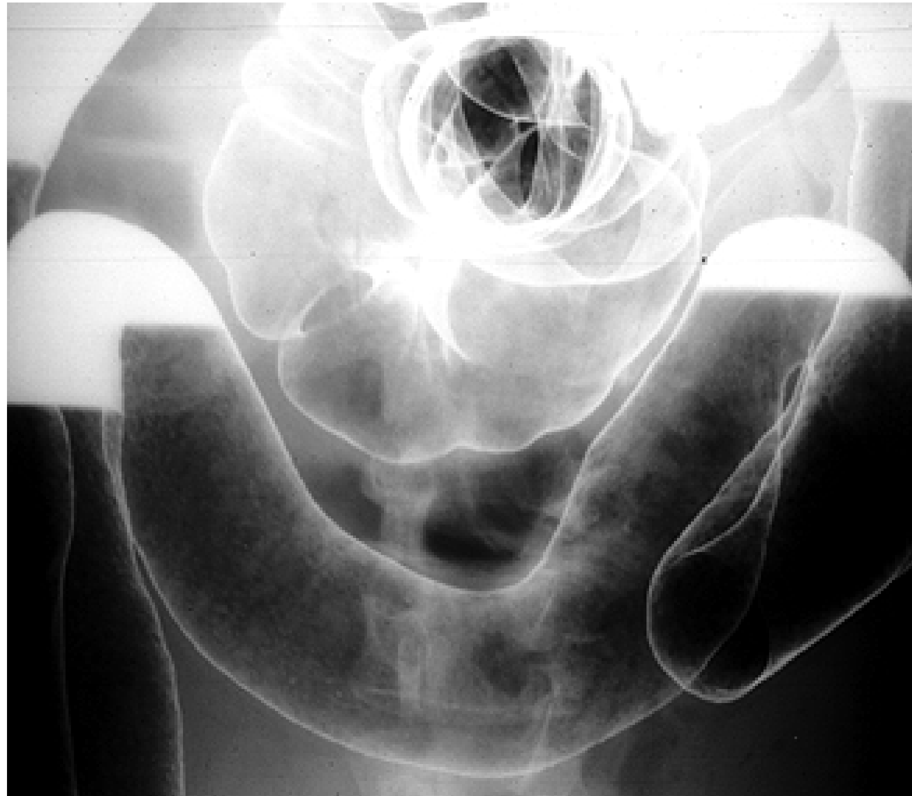
- Mucosal ulceration and inflammation
- Loss of fold in affected areas (especially sigmoid)

Ulcerative Colitis - Ulcerations



Acute ulcerative colitis
Double contrast barium enema demonstrates extensive mucosal ulceration and inflammation throughout the colon. Courtesy of Jonathan Kruskal, MD

Ulcerative Colitis – “Lead Pipe”



Chronic ulcerative colitis Double contrast barium enema in a patient with chronic ulcerative colitis shows a featureless colon with complete loss of folds in the sigmoid colon. Courtesy of Jonathan Kruskal, MD, PhD.

Management

- Nutrition
  - No restrictions, but eat balanced diet
  - Important for children and adolescents
  - Oral is better
  - Parenteral or elemental diet

Treatment

- Mild attacks
  - Oral steroids 20mg /day
  - Rectal steroids
  - 5ASA (aminosalicylic acid)
  - Failure to improve after 2 weeks is an indication for treatment as a moderate disease

Treatment

- Moderate attack
  - Oral prednisolone 40mg/day
  - Steroid enemas
  - 5ASA
  - Admit if no improvement

Treatment

- Severe attack
  - Immediate admission if necessary
  - IV hydrocortisone 100mg four time a day for 5 days
  - Rectal steroids twice a day
  - Sips of fluids only by mouth
  - IV fluids
  - Blood transfusion

Treatment

- Severe attack
  - Regular assessment
  - Regular blood tests (CBC, ESR, electrolytes)
  - Monoclonal antibodies (Infliximab)
  - Surgery if no response is to be considered
  - If improved: oral steroids, 5ASA, and antibiotics

Emergency Surgery

- Toxic megacolon
- Perforation
- Massive haemorrhage
- Failure of a severe attack to resolve

Mortality of CD

- Twice of that of population
- If Crohns disease diagnosed before the age of 20 years there is 10-fold increase in mortality

Prognosis of UC

- 25% have proctitis, 50% left-sided disease and 25% total colitis
- 25% have surgrey
- 12-15% with pan-colitis for 20 years develop colonic cancer

Thank you

Any Questions?