Clinical presentation of IBD- Differences from other GI disorders

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GMCH, Chandigarh

IBD

- Chronic, idiopathic, autoimmune, inflammatory disorders involving some or all layers of the gut wall

- **Types**
  - Idiopathic ulcerative colitis (IUC) (50%)
  - Crohn's disease (CD) (40%)
  - Indeterminate colitis (10%)

UC & CD have *both overlapping and distinct* clinical and pathological features.

Epidemiology

- IBD – traditionally thought to be in developed countries of N America and N Europe
- Central and Western Europe – increased incidence in the last 50 yrs
- Asia – Pacific also showing increased incidence

Loftus et al GCNA 2002; Gastroenterology 2004

Asia – Pacific

1965-94

Migrant Asians (pre-adolescence) – to western countries

- UC-
  - 0.96-17.2 (incidence) /million
  - 19.3-172.5(prevalence)/million
- CD-
  - 0.14-7.5(incidence)/million

Incidence & Prevalence could be equal to the local population "hygiene hypothesis"

Gut 1992, Digestion 1992, AJG 1999

Asia –Pacific – local populations

- Limited data - Very few population based registries, Lack of awareness and misdiagnosis

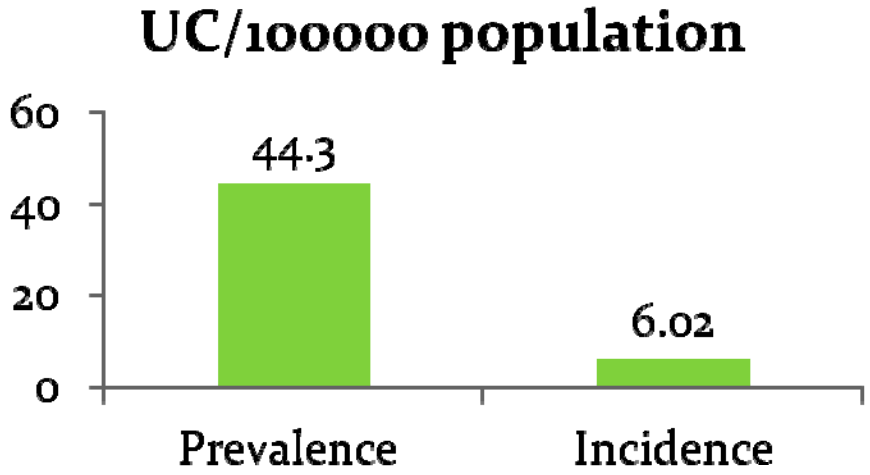
- **Japan – (1990 -2005)**
  - UC - Incidence 1.95 & prevalence -18.12/100000/year
  - CD - Incidence 0.51 & prevalence 5.85/100000/year

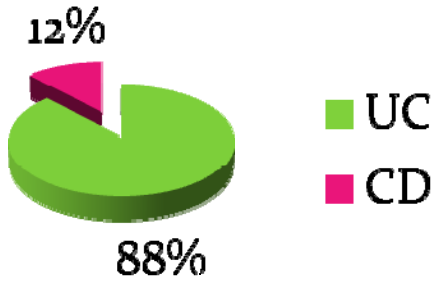
  Incidence in Japan increased 3 times

- **Korea (per 100000)**
  - Incidence rates of UC 0.34/ (1990) – 3.08 (2005)
  - Incidence rates of CD 0.05 (1990) – 1.34 (2005)
  - Prevalence rates – UC 30.87 and CD – 11.24 (2005)

J Gastroenterology, 1995;Inflamm Bowel Dis 2007; Gut 2003

Indian data





UC: CD – 8: 1

North Indian data shows *incidence* and prevalence rates of UC- similar to the west

CD is more in South India and presents one decade later

Crohn's colitis is more common in India

Inflamm Bowel Dis 2010, Ind J Gastroenterol 2007

Asia- Pacific

- UC incidence is increasing with some exceptions
  - ? True increase or increased awareness
- UC incidence is lower as compared to the west with a few exceptions
- Incidence of UC is higher than CD
- Low prevalence areas of IBD have more of UC and CD follows
- High prevalence areas have more of CD relatively

AP consensus on UC -J Gastroenterology Hepatology 2010

Idiopathic ulcerative colitis	Crohn's disease
Colon and terminal ileum	All parts of GIT
Mucosa and submucosa except in fulminant disease	All layers of the gut wall
Rectum involved in 95% pts	Rectum involved in 50% of colitis
Rectum to caecum to terminal ileum	Patchy involvement of GIT
Caecal patch present	May be absent
Contiguous involvement of colon	Discontinuous involvement
Generally no skip areas	Present
Terminal ileum involved - 15-20%	Terminal ileum involved in 75%
Perianal disease uncommon	Common - large anal tags, fissures, fistulas

CD is distinguished from UC by disease proximal to the colon, perineal disease, fistulas (25%), histologic non caseating granulomas (50%) and full thickness disease

Ulcerative colitis	Crohn's disease
Rectal bleeding or bloody diarrhoea	Bleeding only with colitis
Tenemus +	May be present if rectum involved
Lower abdominal cramps	Periumbilical cramps/right iliac fossa pain
Abdominal Mass uncommon	May be present in right iliac fossa
Intestinal obstruction uncommon – strictures suggest adenocarcinoma	Common with stenotic lesions
Malabsorption uncommon	Can present as malabsorption - isolated jejunoileitis
Presentation as PUO - uncommon	May present
Fistulas – external /internal uncommon except rectovaginal	Internal/external fistulas including perianal -25%

CD is distinguished from UC by disease proximal to the colon, perineal disease, fistulas (25%), histologic non caseating granulomas (50%) and full thickness disease

Ulcerative Colitis vs Crohn's Disease

Endoscopic Appearance

Normal colon

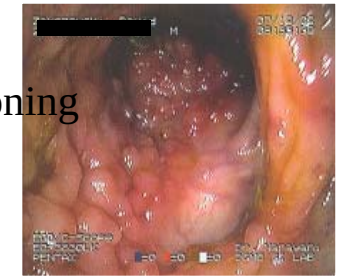
Ulcerative Colitis

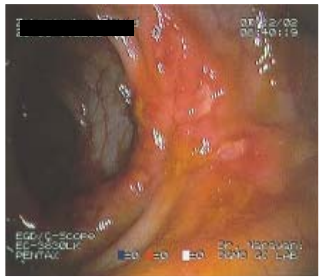
Friability
Exudate
Spontaneous bleeding

Diffuse ulceration

Crohn's Disease

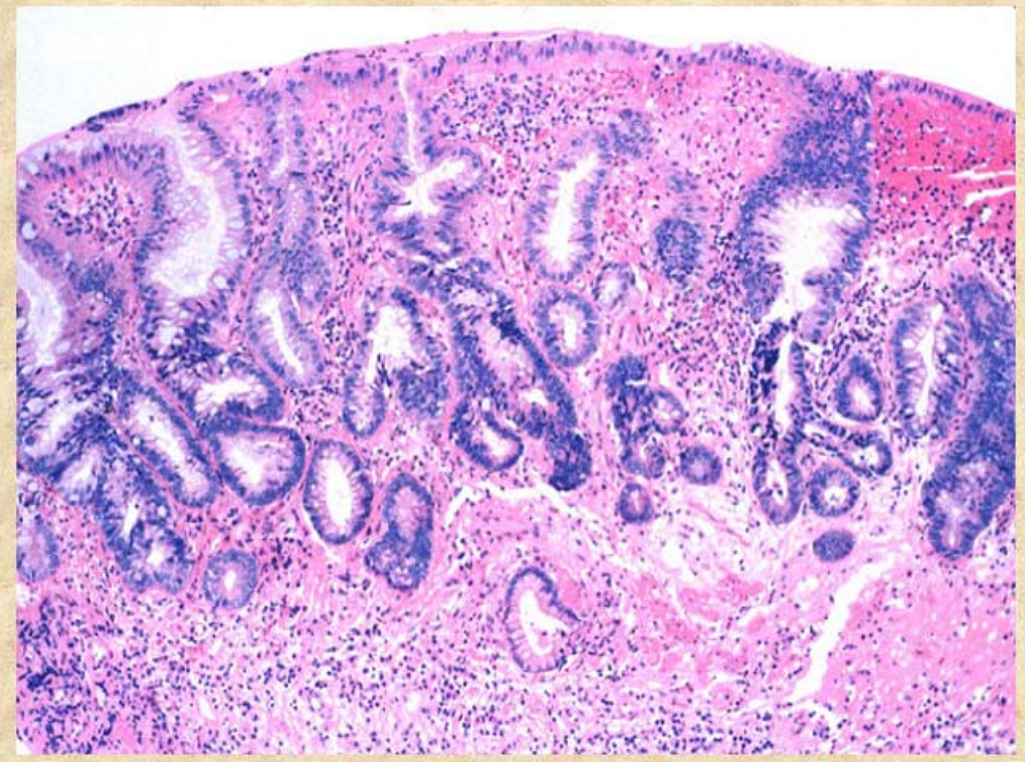
Cobblestoning





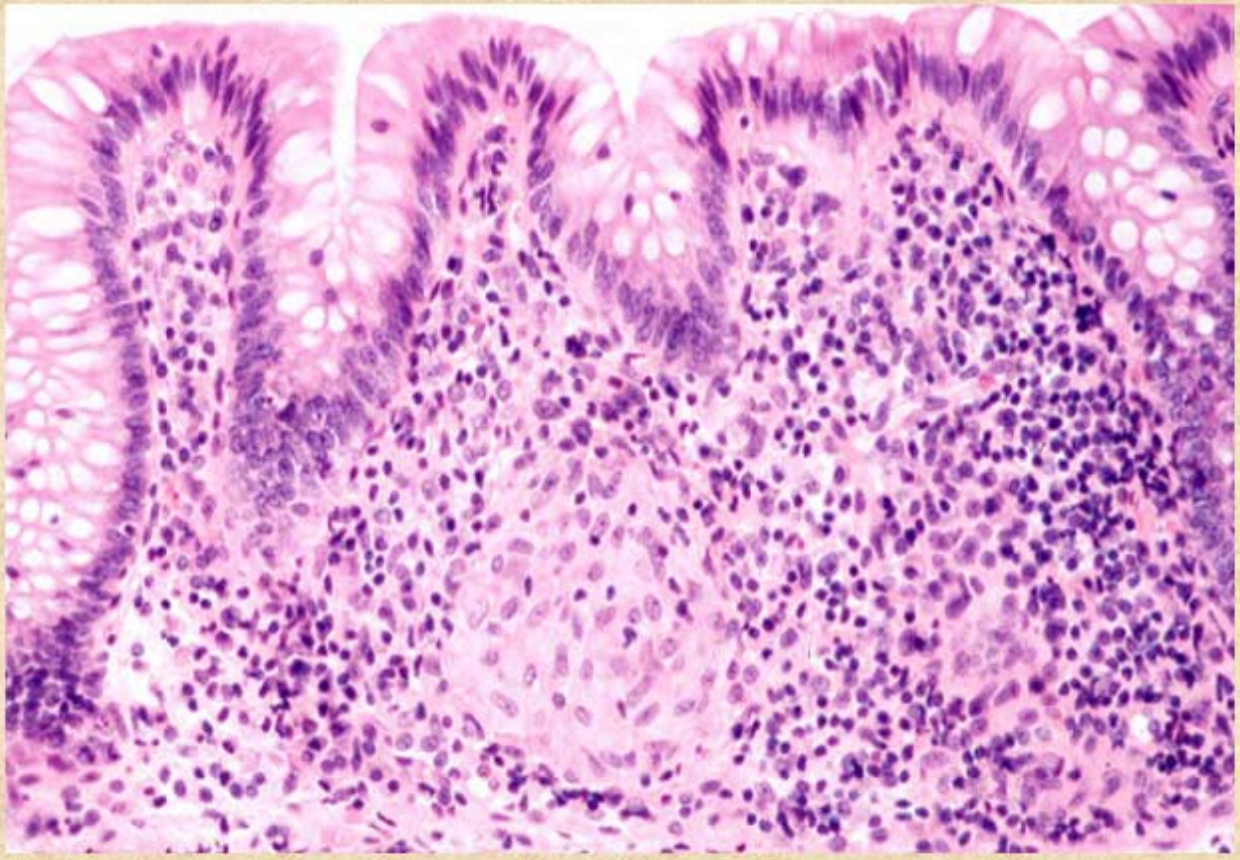
Focal ulceration
Aphthous
Deep serpiginous

Ulcerative colitis



Cryptitis Crypt abscesses, Neutrophilic infiltration
Crypt branching, Crypt loss and distortion
Basal plasmacytosis

Crohns disease with granuloma



Focal intestinal inflammation – crypt involvement, focal areas of chronic inflammation, Apthous ulcers, skip areas , granulomas in 50-60%
Transmural involvement depends upon chronicity

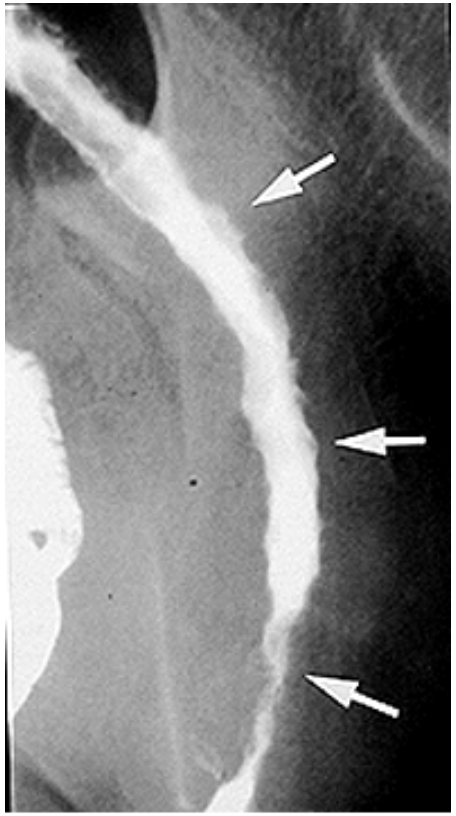
Serological markers for IBD

- p-ANCA (perinuclear antineutrophilic cytoplasmic antibodies)
  - +ve in 60-70% of IUC(in pancolitis, early surgery, pouchitis, PSC)
  - 5-10% of CD
- ASCA – anti Saccharomyces cerevisiae antibodies
  - in 60-70% of CD
  - 10-15% of IUC

- Limited data from Asian countries
- P-ANCA
  - 55.3% sensitivity
  - 88.5% specificity
- Combination of p-ANCA & ASCA improved specificity to 94.3% but sensitivity of only 51.3%

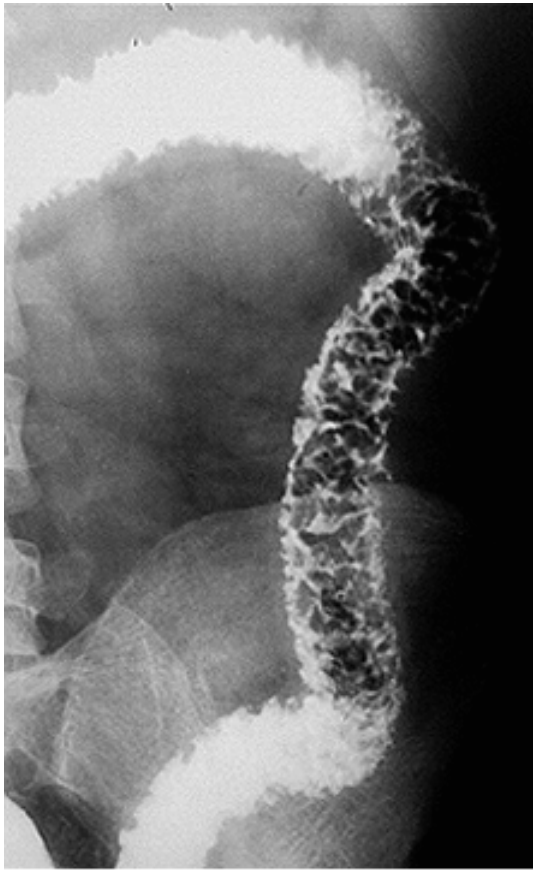
AJG, 2006; AJG 2004, Inflamm Bowel Dis 2007

Crohn's Dx – String Sign



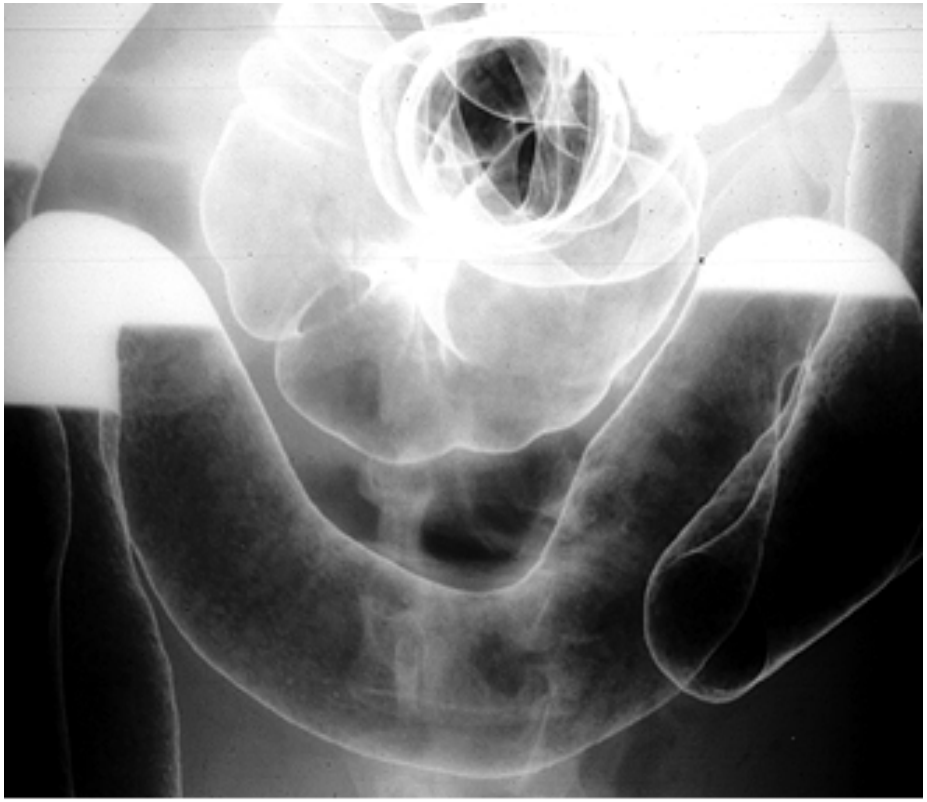
String sign in Crohn's disease Small bowel follow through study shows marked narrowing, irregularity and ulceration in the distal ileum (arrows) in a patient with Crohn's disease. Courtesy of Jonathan Kruskal, MD, PhD.

Ulcerative Colitis - Ulcerations



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

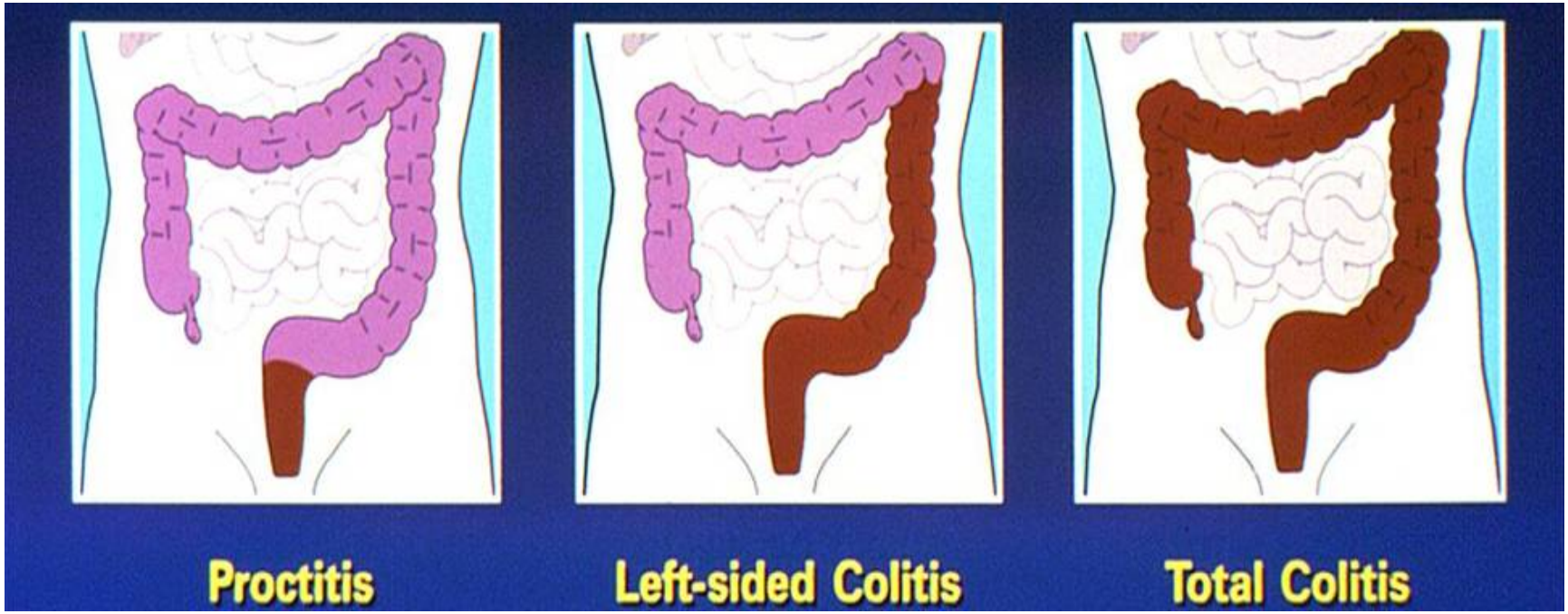
Ulcerative Colitis – “Lead Pipe”



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.

Ulcerative Colitis – Disease distribution (Montreal classification)

30% 40% 30%

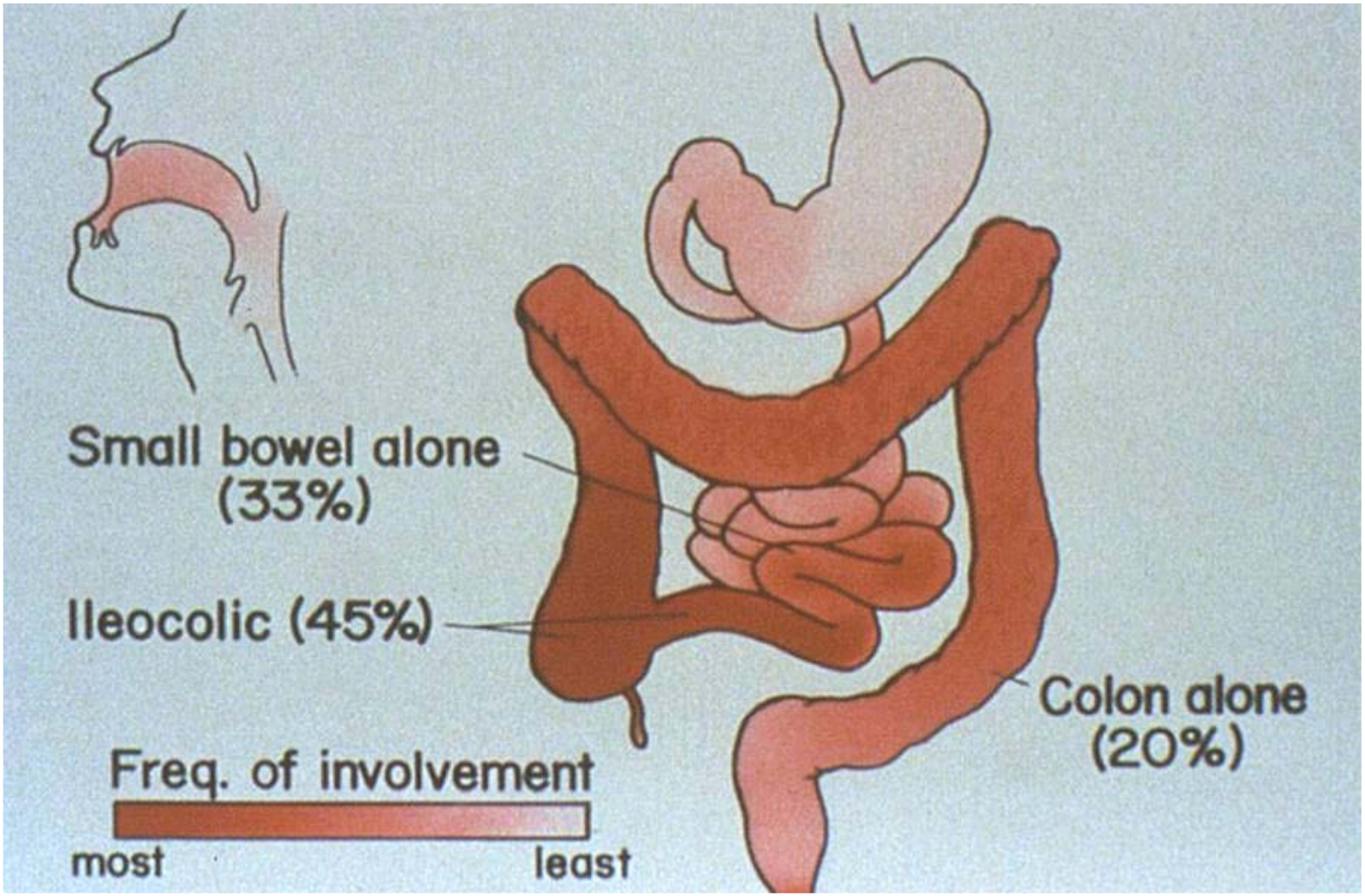


E1 E2 E3

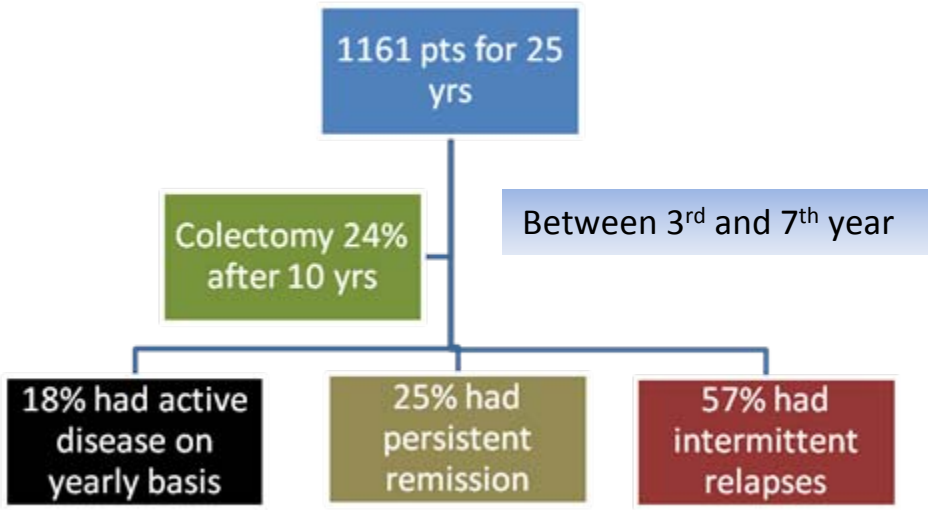
Mild → Severe

Asian population have similar distribution as the western populations
J Gastroenterol Hepatol 2010

Crohn's Disease – Disease distribution



Natural history of UC



Norwegian study
83% have a relapsing course
Colectomy 9.8% in 10 years
20% proctitis pts progress

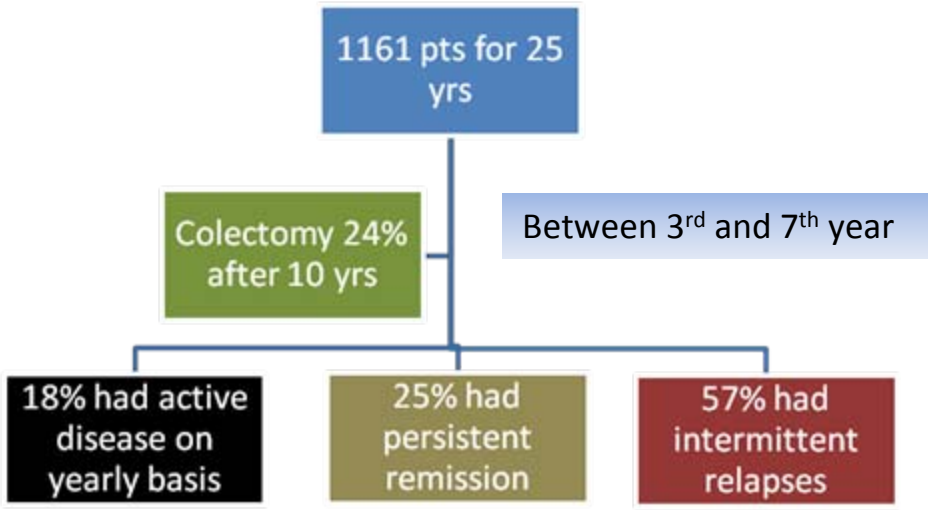
Solberg Scand J Gastroenterol, 2009

Proctosigmoiditis extending to pancolitis likelihood 53%
Pancolitis to lesser disease – likelihood 75%

Langholz Gastroenterol 1994

Upto 25% chance of colectomy in 10 years
Upto 25% may have persistent remission

Natural history of UC



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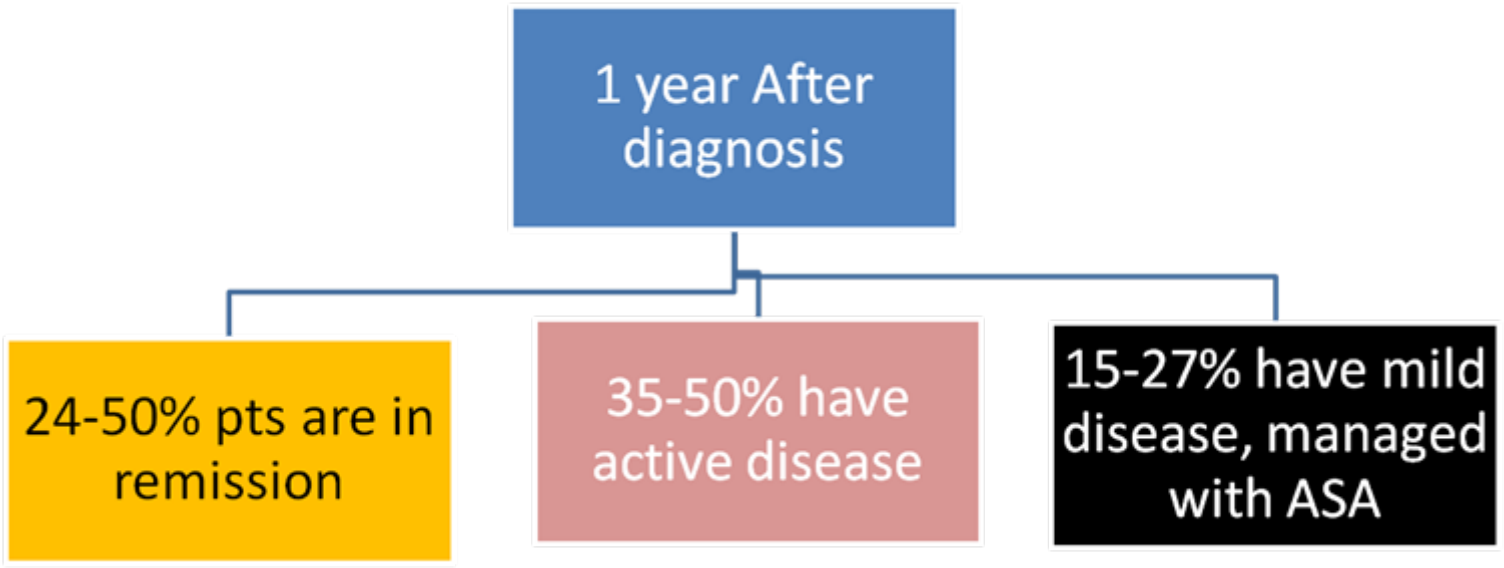
Pancolitis to lesser disease – likelihood 75%

UC is a heterogenous disease in terms of location, extent, change over time and disease course
Active disease can be predicted depending upon active disease in previous years, disease relapses and presence of systemic features

Natural history of Crohn's disease



Silverstein Gastroenterol 1999

Munkholm Scand J Gastroenterol, 1995

CD also has a heterogenous presentation and course, but it is more difficult to predict the natural history than UC

Younger age of onset, active smoking, extensive small bowel disease, perianal disease, deep colonic ulcers, initial need for steroids, upper GI involvement

Infectious diseases mimicking IBD

Bacterial	Mycobacterial	Viral	Parasitic	Fungal
Salmonella	Tuberculosis	CMV	Amoebiasis	Histoplasmosis
Shigella	M avium intacellulare	Herpes simplex	Isospora	Candida
Toxigenic E coli		HIV	T trichiura	Aspergillus
Campylobacter			Hookworm	
Yersinia			Strongyloides	
C difficile				
Gonorhoea				
C trachomatis				

Infectious diseases mimicking IBD

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Campylobacter			Hookworm	
Yersinia			Strongyloides	
C difficile				
Gonorhoea				
C trachomatis				

Acute or chronic colitis – mimic IUC
May also precipitate a relapse

Infectious diseases mimicking IBD

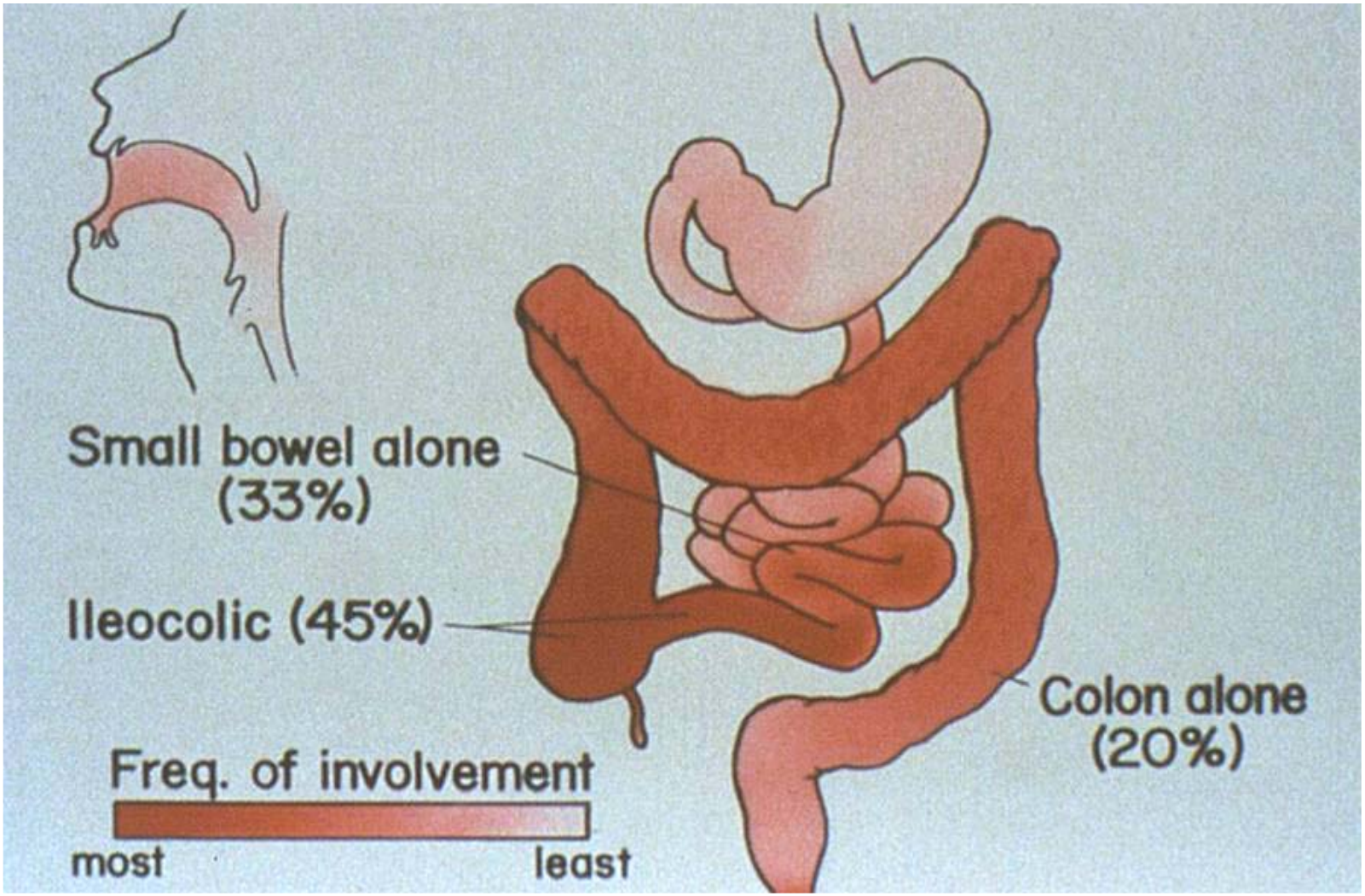
Bacterial	Mycobacterial	Viral	Parasitic	Fungal
Salmonella	Tuberculosis	CMV	Amoebiasis	Histoplasmosis
Shigella	M avium intacellulare	Herpes simplex	Isospora	Candida
Toxigenic E coli		HIV	T trichiura	Aspergillus
Campylobacter			Hookworm	
Yersinia			Strongyloides	
C difficile				
Gonorhoea				
C trachomatis				

May mimic Crohn's disease

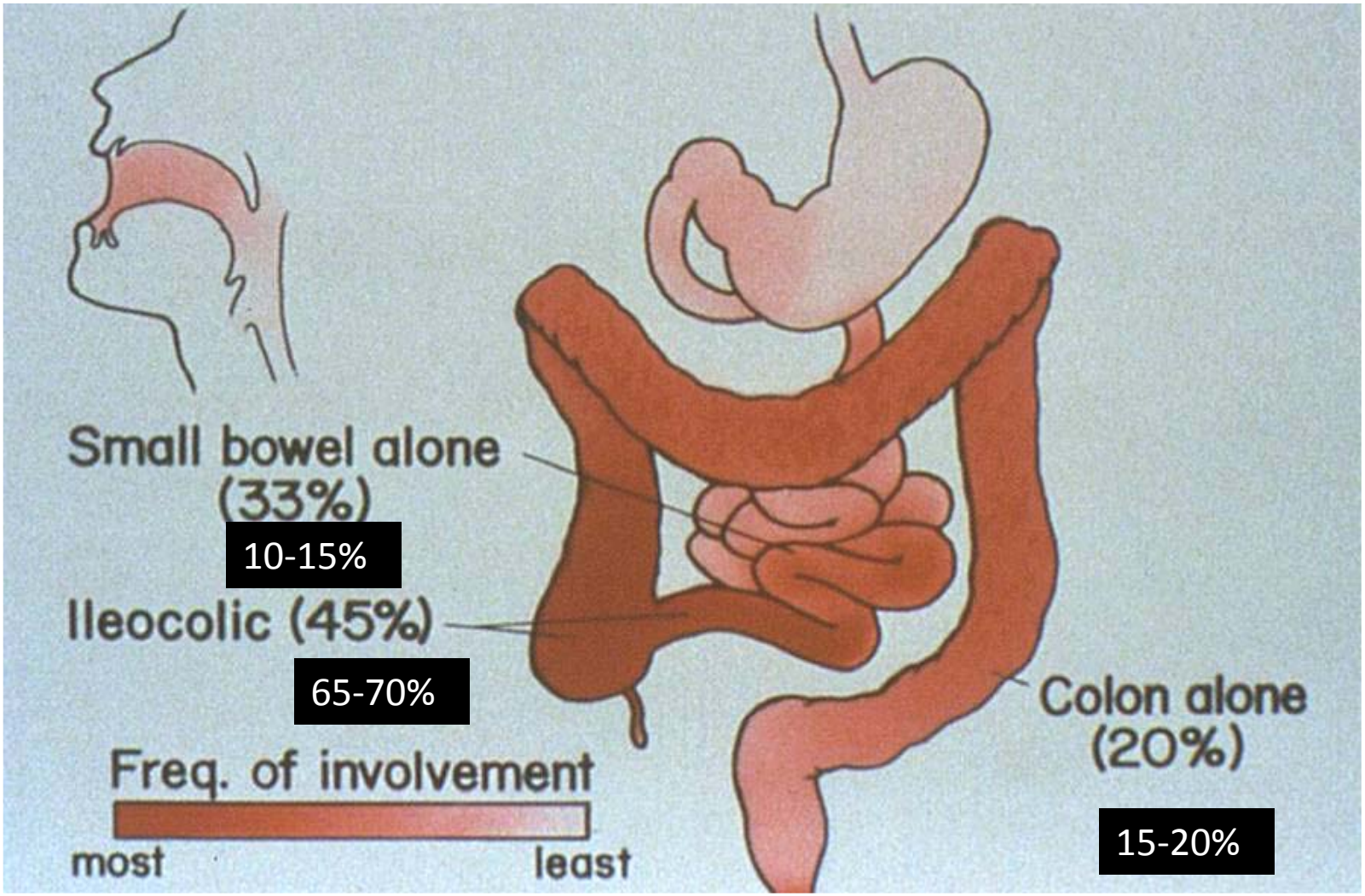
Non infectious diseases mimicking IBD

Inflammatory	Neoplastic	Drugs and chemicals
Appendicitis	Lymphoma	NSAIDs
Diverticulitis	Metastatic carcinoma	Phosphosoda
Diversion colitis	Carcinoma ileum	Cathartic colon
Collagenous/ lymphocytic colitis	Carcinoid	Gold
Ischemic colitis	Familial polyposis	Oral contraceptive
Radiation colitis		Cocaine
Solitary rectal ulcer syndrome		Chemotherapy
Eosinophilic gastroenteritis		
Neutropenic colitis		
Behcet's syndrome		
Graft vs Host disease		

Crohn's Disease – Disease distribution



GI TB – Disease distribution



CD vs TB – Clinical features

- **Constitutional symptoms** - fever, anorexia and weight loss
- **Symptoms due to mucosal ulceration** - diarrhoea, ***hematochezia*** and malabsorption
- **Symptoms due to transmural involvement** - abdominal pain, distention and vomiting due to luminal obstruction, a palpable lump, intestinal perforation
- **Perianal and intestinal fistualization**
- **Extra-intestinal manifestations** such as arthritis, ***sclerosing cholangitis in CD*** and joints, lungs, peritoneum and lymph nodes in the case of TB
- ***A family history*** of inflammatory bowel disease (IBD) in the case of CD or a history of family contacts in the case of TB

Pulimood et al World J Gastroenterol 2011

Diagnosis of Crohn's disease in India where tuberculosis is widely prevalent
Deepak N Amarapurkar, Nikhil D Patel, Priyamvada S Rane
World J Gastroenterol 2008;14(5):741-6

Characteristics	CD (n = 26)	GITB (n = 26)	P value
Demographic features			
Age (range), yr	36.6 ± 8.6 (6-79)	37.2 ± 9.6 (18-78)	NS
Sex (male:female) ratio	16:10	15:11	NS
Clinical features			
Duration of symptoms (range), mo	58.1 ± 9.8 (8-240)	7.2 ± 3.4 (2-24)	S
Chronic diarrhoea, n (%)	18 (69.2)	9 (34.6)	S
Hematochezia, n (%)	8 (30.7)	1 (3.8)	S
Fever, n (%)	6 (23.1)	18 (69.2)	S
Weight loss, n (%)	18 (69.2)	19 (73.1)	NS
Abdominal pain, n (%)	17 (65.4)	22 (84.6)	NS
Intestinal obstruction, n (%)	5 (19.2)	3 (11.5)	NS
Growth retardation, n (%)	2 (7.7)	0 (0)	NS
Ascites, n (%)	2 (7.7)	9 (34.6)	S
Abdominal lump, n (%)	2 (7.7)	4 (15.4)	NS
Extra-intestinal features, n (%)	16 (61.5)	6 (23.1)	S
Laboratory/radiological features			
Anaemia, n (%)	15 (57.7)	7 (26.9)	S
Hypoproteinemia, n (%)	11 (42.3)	9 (34.6)	NS
ESR (range) mm at 1 h	54.7 ± 12.2 (10-104)	59.7 ± 13.6 (19-110)	NS
Pulmonary infiltration/fibrosis, n (%)	1 (3.8)	10 (38.4)	S
Abdominal lymphadenopathy, n (%)	3 (11.5)	11 (42.3)	S
Generalized lymphadenopathy, n (%)	0 (0)	2 (7.7)	NS

	CD (n=26)	TB (n=26)	P value (<0.05)
Duration of symptoms	**58±9.8m(8-240m)**	7.2±3.4m(2-24m)	S
Chronic diarrhoea n (%)	**18(69.2%)**	9(34.6%)	S
Hematochezia n(%)	**8(30.7%)**	1(3.8%)	S
Fever n(%)	6(23.1%)	18(69.2%)	S
Ascites n (%)	2(7.7%)	9(34.6%)	S
Extra-intestinal features	**16(61.5%)**	6(23.1%)	S
Anemia n(%)	**15(57.7%)**	7(26.9%)	S
Pulmonary infiltrates	1(3.8%)	10(38.4%)	S
Abd. lymphadenopathy n (%)	3(11.5%)	11(42.3%)	S

Amrapurkar et al World J Gastroenterol 2008

Role of– colonoscopy, enteroscopy, gastroduodenoscopy

Transversely placed ulcers, nodularity and hypertrophic lesions resembling masses characteristic of TB.

Aphthoid or longitudinal, deep, fissuring ulcers and a cobblestone appearance are said to be more typical of CD.

Epstein et al*Aliment Pharmacol Ther* 2007; **25: 1373-1388**
Ouyang Q, *J Gastroenterol Hepatol 2006;* ***21: 1772-1782***
Leighton JA*Gastrointest Endosc 2006;* ***63:*** 558-565

Very few studies have directly compared these or evaluated their diagnostic value and inter -observer agreement.

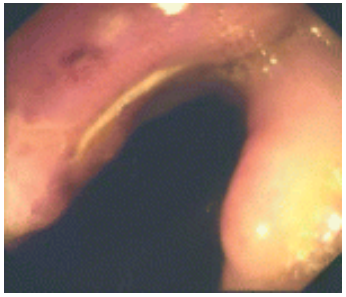
Role of– colonoscopy, enteroscopy, gastroduodenoscopy

Lee YJ et al Analysis of colonoscopic findings in the differential diagnosis between intestinal tuberculosis and Crohn's disease. Endoscopy 2006; 38: 592-597

Ano-rectal lesions, longitudinal ulcers, aphthous ulcers, and a cobblestone appearance were significantly more common in CD,

Involvement of fewer than four segments, a patulous ileocecal valve, transverse ulcers, and pseudopolyps were more frequent in intestinal TB.

Role of– colonoscopy, enteroscopy, gastroduodenoscopy



Makharia GK et al Clinical, endoscopic, and histological differentiations between Crohn's disease and intestinal tuberculosis. *Am J Gastroenterol 2010;* ***105: 642-651***

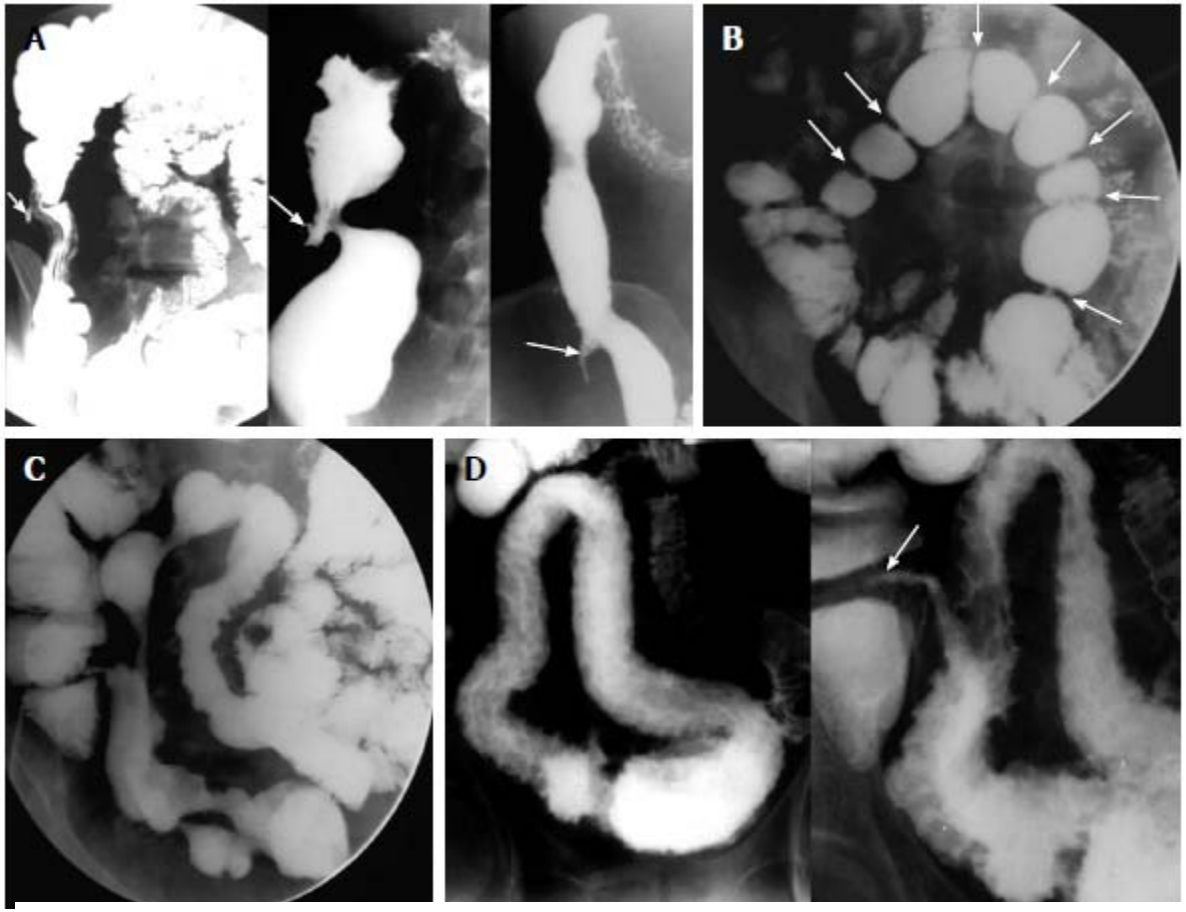
In a prospective study	**(CD vs TB)**
Skip lesions in colon	(66% *vs 17%)*
Aphthous ulceration	*(54% vs 13%)*
Linear ulceration	(30% *vs 7%)*
Superficial ulceration	(51% *vs 17%)*

Cobblestoning of the colonic mucosa was seen only in CD (17% *vs 0%)*

.

Nodularity of the colonic mucosa was significantly more common in patients with TB than in those with CD (49% *vs 24.5%).*

Radiology – BMFT



TB - Ileocaecal valve, caecal and ascending colon involved

Strictures are short, smooth & concentric with prestenotic dilatation

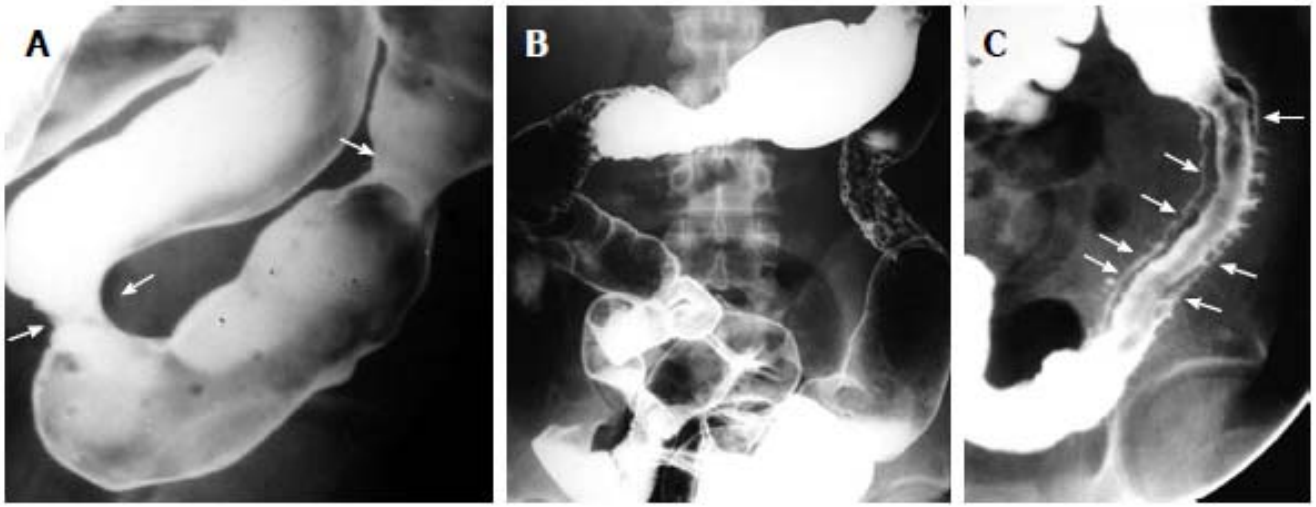
Apthous ulcers or ulcernodular Pattern pathognomic of CD

CD - Isolated ileum involvement with sparing of valve & caecum

Strictures are long, eccenteric with sacculations on antimesenteric border and no poststenotic dilatation

Nagi B et al Abdominal Imaging 2004
Lundtsted Acta radiol 1996

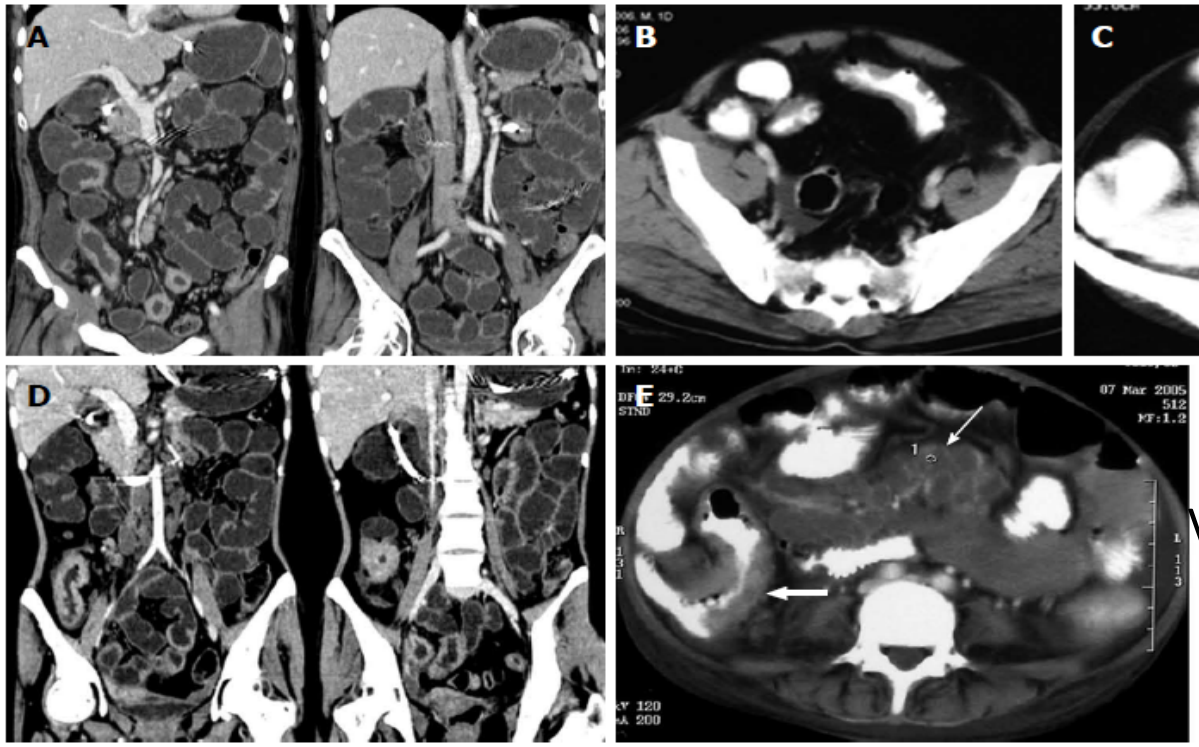
Radiology – Barium enema



TB strictures are concentric and smooth (A)

Segmental colitis, aphthous ulcers, cobblestoning (B)
Double tracking with collar stud ulcers favour CD

Nagi B et al Abdominal Imaging 2004;29:335-40



Vascular mesenteric engorgeme
and fibrofatty proliferation

Tuberculosis	Crohn's disease
Mural thickening without stratification	Mural thickening with stratification in active inflammation
Strictures concentric	Strictures eccentric
Fibrofatty proliferation of mesentery very rare	Fibrofatty proliferation of mesentery
Mesenteric inflammation but no vascular engorgement	Hypervascular mesentery (comb sign)
Hypodense lymph nodes with peripheral enhancement	Mild lymphadenopathy
High density ascites	Abscesses

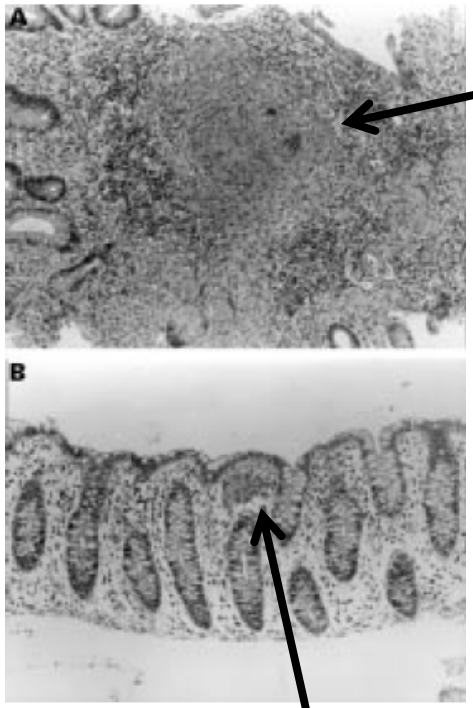
Nagi B et al Abdominal Imaging 2004;29:335-40

Gut 1999;45:537–541

Endoscopic mucosal biopsies are useful in distinguishing granulomatous colitis due to Crohn's disease from tuberculosis

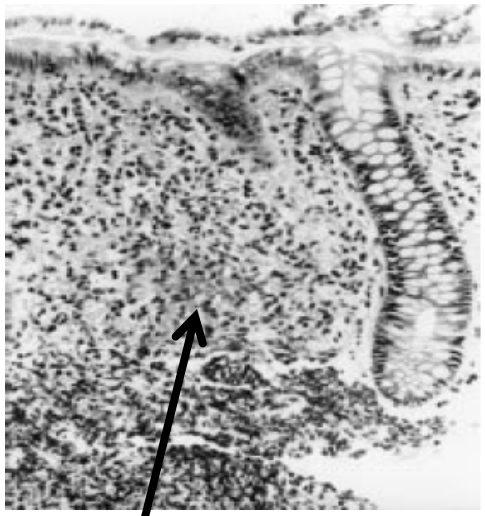
A B Pulimood, B S Ramakrishna, G Kurian, S Peter, S Patra, V I Mathan, M M Mathan

	All patients			*All biopsy specimens*			*Endoscopically abnormal mucosa*			*Endoscopically normal mucosa*		
Parameters	*TB (n=20)*	*CD (n=20)*	*p Value*	*TB (n=61)*	*CD (n=112)*	*p Value*	*TB (n=43)*	*CD (n=49)*	*p Value*	*TB (n=18)*	*CD (n=63)*	*p Value*
Granulomas	100%	55%	0.0006*	46%	14%	0.0000*	63%	27%	0.0004*	5%	5%	1.0000
Average size of granulomas (µm)	193	95	0.0001*	204.94	102.08	0.0001*	207.90	101.63	0.0003*	125.00	104.17	0.6547
Granuloma >200 µm	90%	5%	0.0000*	33%	1%	0.0000*	47%	2%	0.0000*	0%	0%	
Average no of granulomas/section	5.35	0.75	0.0007*	4.82	1.44	0.0025*	4.96	1.54	0.0066*	1	1	1.0000
>5 granulomas/section	40%	0%	0.0016*	18%	0%	0.0000*	26%	0%	0.0002*	0%	0%	
Caseation	40%	0%	0.0016*	13%	0%	0.0002*	19%	0%	0.0015*	0%	0%	
Confluence	60%	0%	0.0000	15%	0%	0.0001*	21%	0%	0.0006*	0%	0%	
Location of granuloma												
Mucosa	70%	50%	0.1967	23%	13%	0.0745	33%	22%	0.2768	5%	5%	1.0000
Submucosa	45%	5%	0.0034*	18%	6%	0.0000*	25%	2%	0.0008*	0%	0%	
Granulation tissue	50%	15%	0.0181*	23%	2%	0.0000*	33%	4%	0.0003*	0%	0%	
Microgranulomas	5%	40%	0.0098*	2%	9%	0.0528	2%	8%	0.2240	0%	10%	0.2093
Ulcers	75%	65%	0.4901	44%	15%	0.0000*	60%	33%	0.0075*	5%	2%	0.3972
Aphthous	5%	5%	0.2435	2%	1%	0.5822	2%	0%	0.4673	0%	2%	0.7777
Deep	80%	50%	0.0467*	41%	11%	0.0000*	58%	24%	0.0010*	0%	0%	
With epithelioid histiocytes	45%	5%	0.0034*	15%	2%	0.0000*	21%	2%	0.0040*	0%	0%	
Architectural alteration	65%	75%	0.4901*	41%	40%	0.9179	53%	57%	0.7249	11%	30%	0.1371
Chronic inflammation	90%	90%	0.6975	51%	75%	0.0012*	67%	80%	0.1854	11%	71%	0.0000*
Discontinuous inflammation	50%	50%	1.0000	23%	19%	0.5110	30%	31%	0.9685	5%	10%	0.5108
Focally enhanced colitis	20%	50%	0.0467*	7%	14%	0.1287	9%	24%	0.0551	0%	6%	0.3580
Disproportionate submucosal inflammation	65%	5%	0.0001*	25%	2%	0.0000*	35%	2%	0.0000	0%	0%	

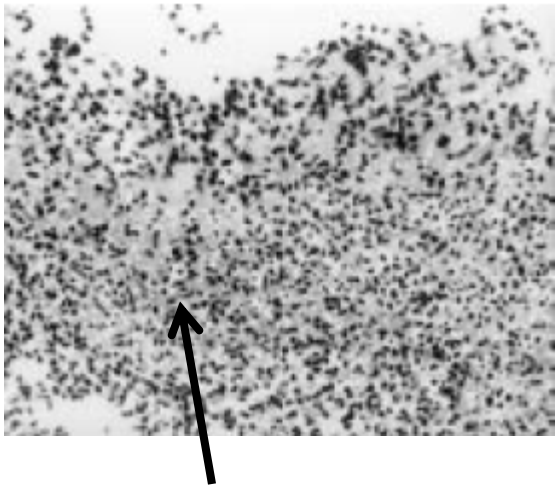


Caseating granuloma (TB)

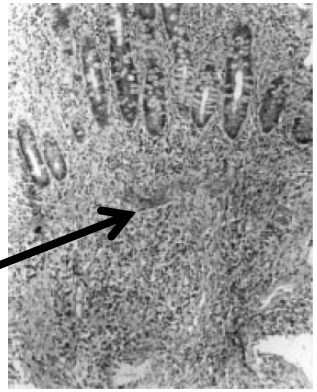
Non-caseating granuloma (CD)



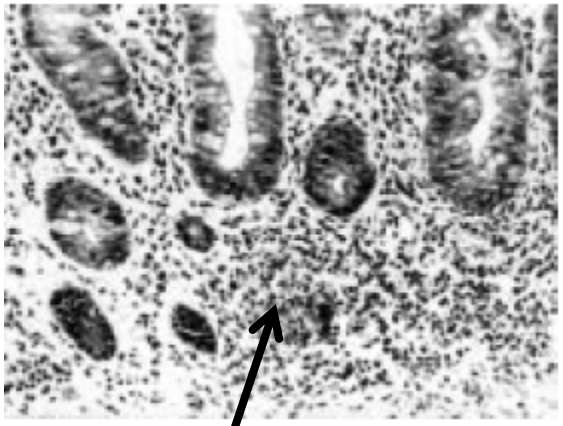
Microgranuloma in CD



Conglomerate epitheloid band TB

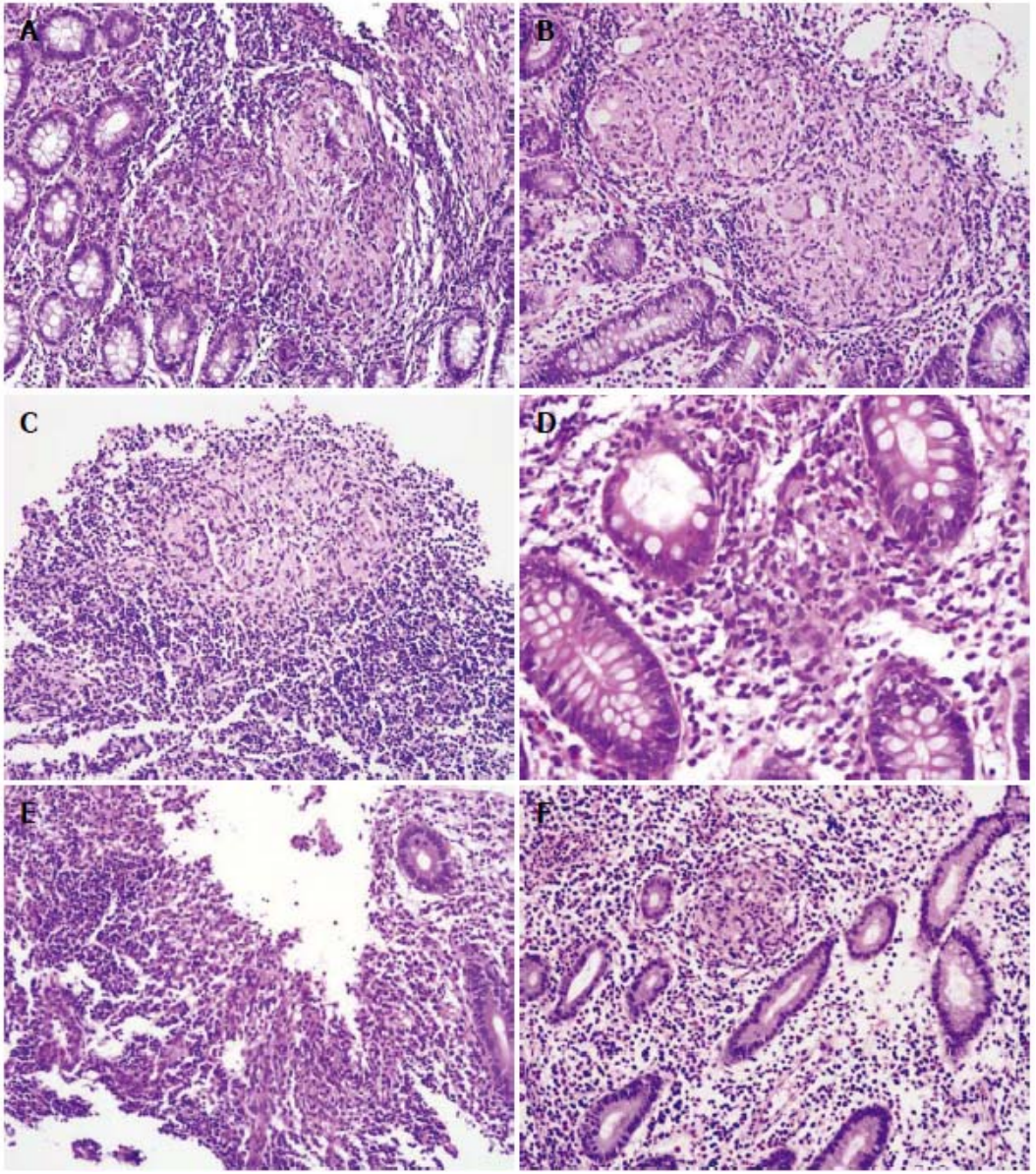


Disproportionate submucosal inflammation Ileal TB



Focally enhanced colitis (CD)

Confluent granuloma (TB)



Confluent granuloma with caseation (TB)

Granuloma with Lymphoid cuff (TB)

Vague granuloma (CD)

Band of epithelioid histiocytes in ulcer base (TB)

Small granuloma (CD)

Xian et al World J Gastroenterol 2008

The histological parameters characteristic of tuberculosis were

a)Multiple (mean number of granulomas per section: 5.35),

b)Large (mean widest diameter: 193 µm)

c)Confluent granulomas often with caseating necrosis

d) Ulcers lined by conglomerate epithelioid histiocytes

e) Disproportionate submucosal inflammation.

The features characteristic of Crohn's disease were

a)Infrequent (mean number of granulomas per section: 0.75)

b)Small (mean widest diameter: 95 µm) granulomas

c)Microgranulomas (defined as poorly organised collections of epithelioid histiocytes)

d) Focally enhanced colitis

e) A high prevalence of chronic inflammation, even in endoscopically normal appearing areas.

inflammation	65%	5%	0.0001*	25%	2%	0.0000*	35%	2%	0.0000	0%	0%

CD Vs TB – serology

Anti-*Saccharomyces cerevisiae antibody (ASCA)*

- A non-specific antibody resulting from macromolecular transport of food antigens partly resulting from an increase in intestinal permeability
- **TB – 7% vs 49% with CD**

Kim et al Dis Colon Rect 2002;45:1062-9

- **Two studies from India involving a larger number of patients showed that ASCA was +ve in 50% in intestinal TB & CD**

Ghoshal et al J Postgrad Med 2007;53:166-70
Makharia et al Dig Dis Sci 2007;52:33-39

γ Interferon release assays

Quantiferon-TB Gold (*QFT-G), an in vitro ELISA test which detects the* release of interferon-gamma after stimulation by MTB antigen.

- Approved by FDA as an aid in diagnosing MTB infection (latent & disease)
- Performed by incubating fresh heparinized whole blood from sensitized persons with mixtures of synthetic peptides *: early* secretory antigenic target-6 (ESAT-6) and culture filtrate protein-10 (CFP-10).

- Does not get affected by previous BCG
- Poor sensitivity (possibly lower than Mx test) and specificity
- Does not differentiate between latent and active TB

- **Role in intestinal TB yet to be clearly defined**

- Important to make a correct diagnosis because treatment is radically different

Extraintestinal manifestations

- **Dermatologic**- erythema nodosum, pyoderma gangrenosum, oral aphthous ulcers
- **Rheumatologic -** arthritis, ankylosing spondylitis, sacroileitis, osteoporosis, osteomalacia, hypertrophic osteoarthropathy
- **Ocular** – conjunctivitis, anterior uveitis/iritis, episcleritis
- **Hepatobiliary** - fatty liver, cholelithiasis, PSC, biliary cirrhosis, pericholangitis, hepatic failure
- **Urologic** – calculi, ureteral obstruction, fistulas
- **General** – thrombosis, DVT, PTE, endocarditis, myocarditis, interstitial lung disease, amyloidosis

In conclusion

- IUC and Crohn's must be differentiated from each other
- Important to differentiate first attack of IUC from bacterial or amoebic causes
- Crohn's and TB must be differentiated

Diagnosis of TB

(1) Presence of caseating granuloma on histology of diseased tissue (intestine, peritoneum or lymph nodes)

(2) Demonstration of acid-fast bacilli (AFB) on smear or on histological section

(3) Positive culture for AFB

(4) Histological or microbiological confirmed TB at extraintestinal site or Intra-abdominal operative or other findings consistent with TB with confirmed disease elsewhere

(5) Positive TB PCR

(6) Response to ATT

.

Diagnosis of TB

(1) Presence of caseating granuloma on histology of diseased tissue (intestine, peritoneum or lymph nodes)

(2) Demonstr

(3) Positive c

(4) Histologic
Intra-abd
confirme

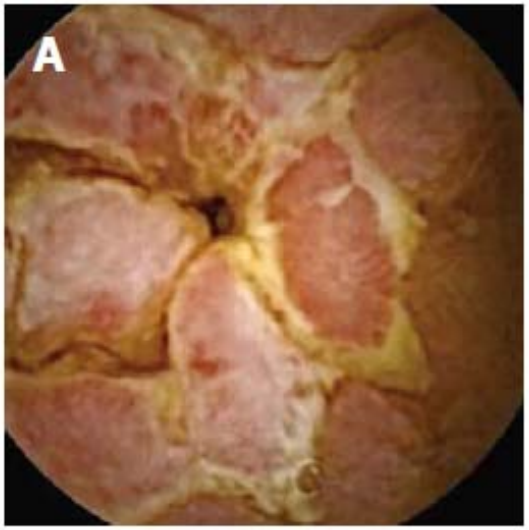
(5) Positive T

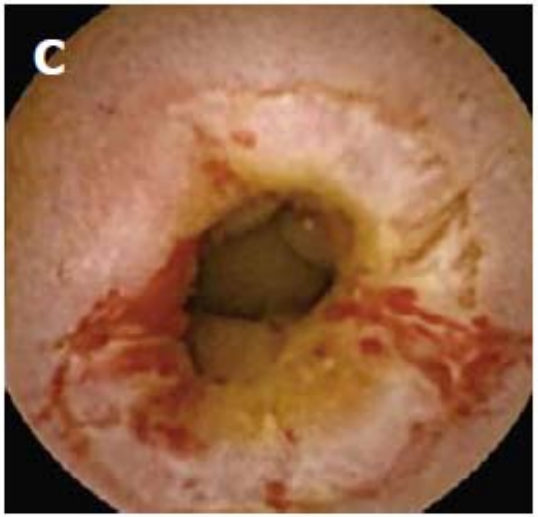
(6) Response to ATT

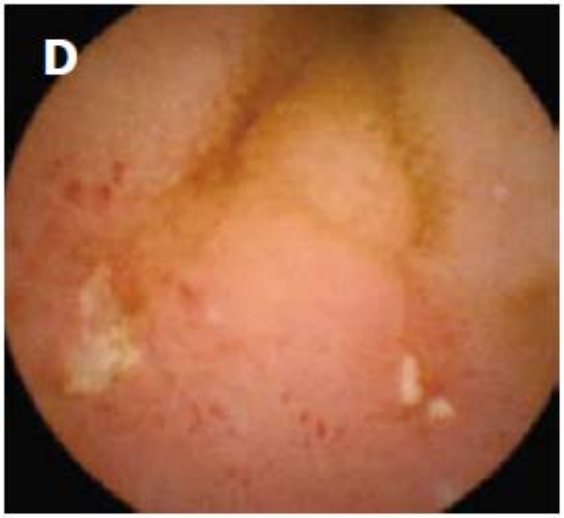
.

Granulomas - in CD	55-80% vs 15-65%
Caseation –	18-33%
AFB-	5-20%
AFB culture in	30%
PCR (IS6110) –	35-45% sensitivity
PCR + Histopathology –	60% sensitivity

Role of capsule endoscopy







Cobblestone

Circumferential ulcers

Superficial ulcers

Crohn's disease

Tuberculosis

385 pts with obscure GI bleed, 42 with CD, 12 with TB
Sensitivity is similar with ileocolonoscopy but specificity is lower
Comparable with enteroscopy

Expensive and biopsies are not possible

Goenka et al World J Gastroenterol 2011
Solem et al Gastrointes Endosc 2008

Complications of IUC

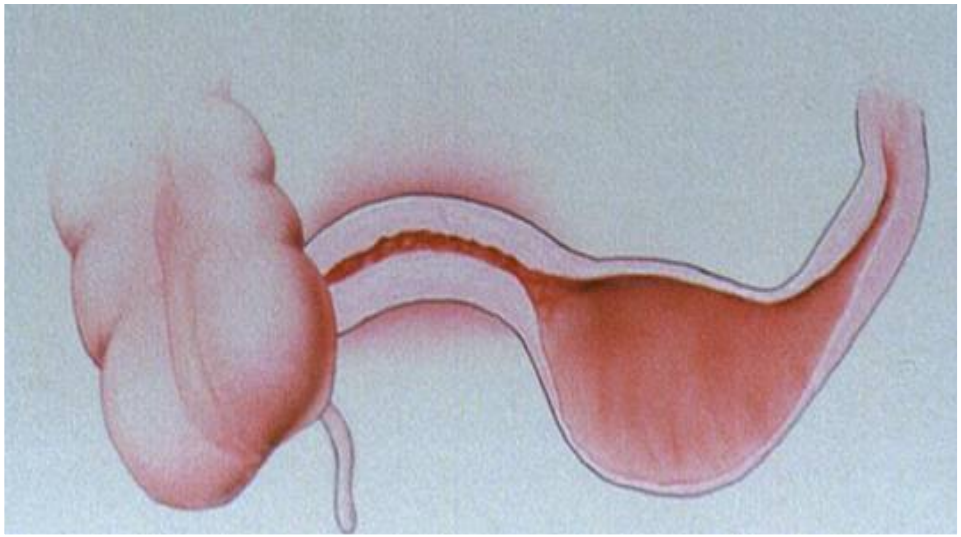
- 15% have catastrophic presentation
- Massive hemorrhage in 1%
- Perforation
- Toxic megacolon
- Obstruction in 10% cases
- Carcinoma
- Perianal disease

Complications of CD

- Adhesions
- Obstructions
- Toxic megacolon
- Hemorrhage
- Malabsorption
- Perianal disease
- Cancer

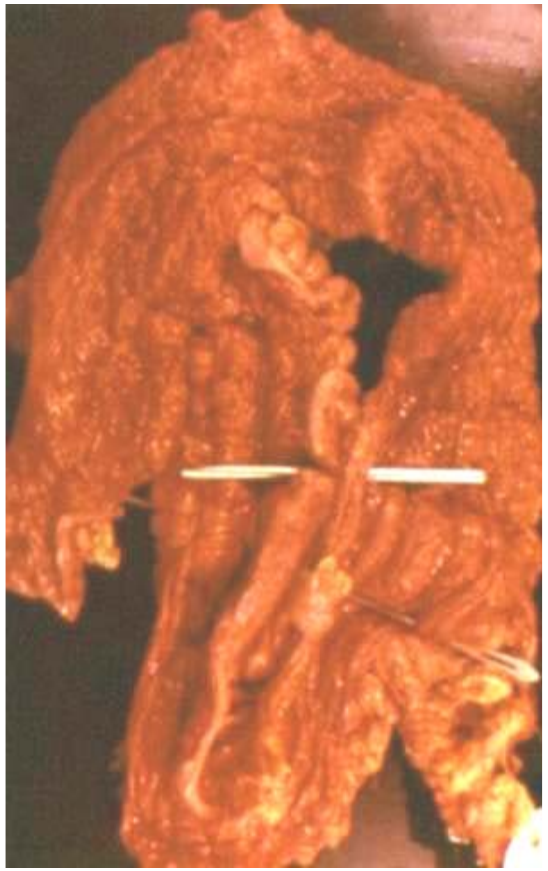
Complications of Crohn's Disease

Crohn's Strictures



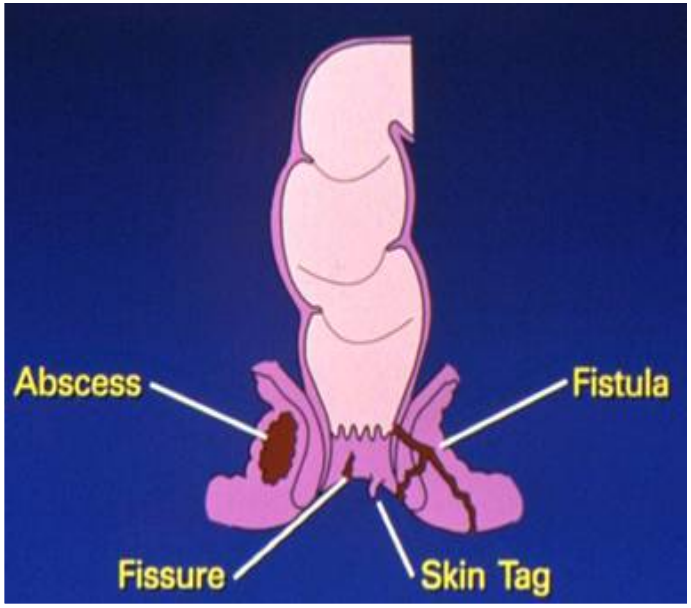
Complications of Crohn's Disease

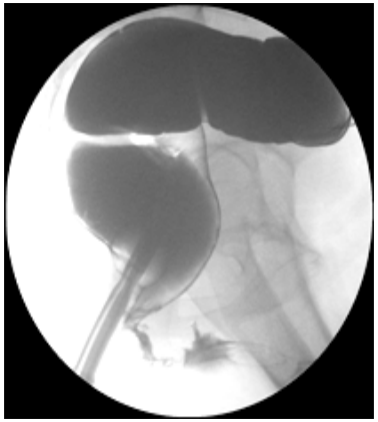
Crohn's Fistulae



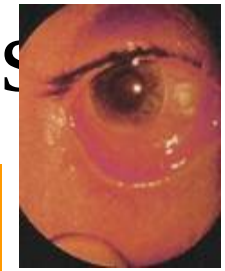
Complications of Crohn's Disease

Crohn's Fistulae





Extraintestinal Inflammatory Bowel Diseas

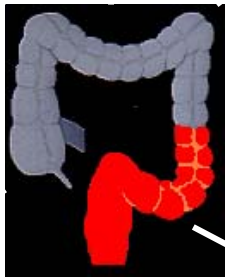


Eyes

Mouth

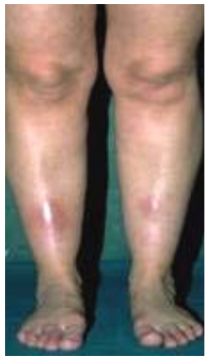
Heart

Liver



Joints

Blood



Skin

Diseases mimicking IBD

Infectious

- Bacterial – Salmonella, Shigella, Esch. coli, Campylobacter, Yersinia, Gonococci, Clostridia, Chlamydia
- Mycobacterial – tubercular & atypical
- Parasitic- amebiasis, Isospora, Trichuriasis, Hook worm
- Viral- CMV, HSV, HIV
- Fungal- candida, asperigillosis

Noninfectious

- Inflammatory- appendicitis, diverticulitis, diversion colitis, ischemic colitis, radiation colitis, SUR, eosinophilic colitis, neutropenic colitis, behcet's disease, graft vs host disease, collagenous & lymphocytic colitis
- Neoplastic- lymphoma, carcinoma, carcinoid, familial polyposis
- Drugs & chemicals- NSAIDs, OCPs, cocaine, gold

CD differentiated from UC

- Disease proximal to the colon
- Perineal disease
- Fistulas – 25%
- Non caseating granulomas on histology – 50%
- Full thickness disease

Crohn's Disease Vs Tuberculosis

- CD incidence is increasing and TB is endemic
- Overlapping Clinical, radiologic, endoscopic, pathologic, and surgical features
- Exact differentiation difficult
- No single differentiating feature
- Important to have specific diagnosis