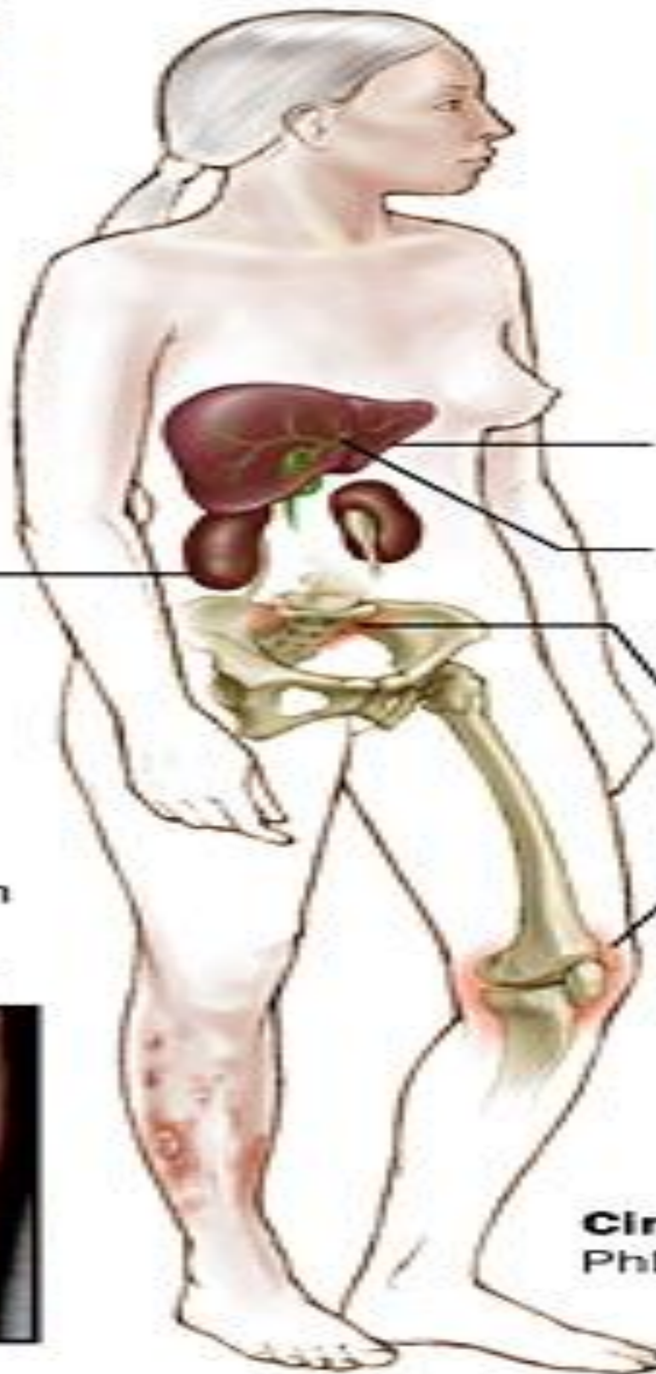
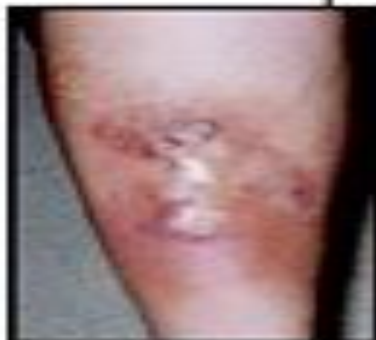
ULCERATIVE COLITIS

U.C. is ulceroinflammatory disease limited to mucosa and submucosa It extends in continuous fashion proximally from rectum. Well formed granulomas are absent. In some pt. It is associated with migratory polyarthitis, sacroilitis, uveitis and hepatic involvement.

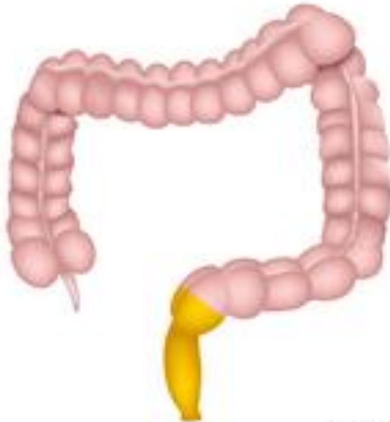

Eyes
Episcleritis
Uveitis
Mouth
Stomatitis
Aphthous ulcers
Liver
Steatosis
Biliary tract
Gallstones
Sclerosing cholangitis
Kidneys
Stones
(nephrolithiasis)
Hydronephrosis
Fistulae
Urinary tract
infection
Joints
Spondylitis
Sacroiliitis
Peripheral arthritis
Skin
Erythema nodosum
Pyoderma
grangrenosum
Circulation
Phlebitis

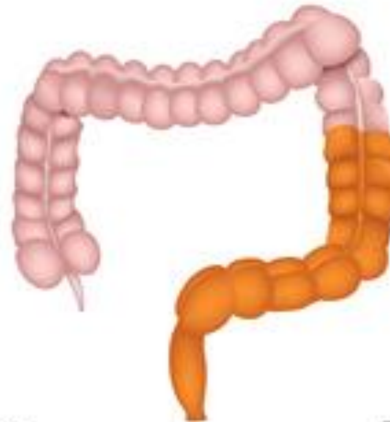


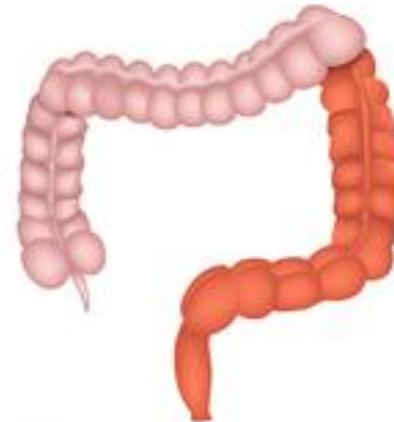
MORPHOLOGY:

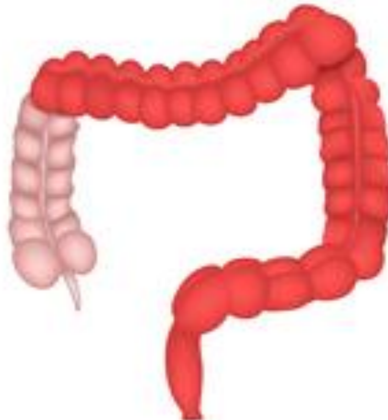
- U.C. involves rectum extends proximally in retrograde fashion to involve entire colon "PANCOLITIS".
- Disease limited to the rectum or rectosigmoid may be referred to as **ulcerative proctitis** or ulcerative **proctosigmoiditis**.
- Disease of continuity no skip lesion.
- In severe pancolitis distal ileum is involved with mucosal inflammation "BACK WASH ILEITIS". This is due to incompetence of iliocecal valve- reflux of inflammatory material From colon.

TYPES OF ULCERATIVE COLITIS







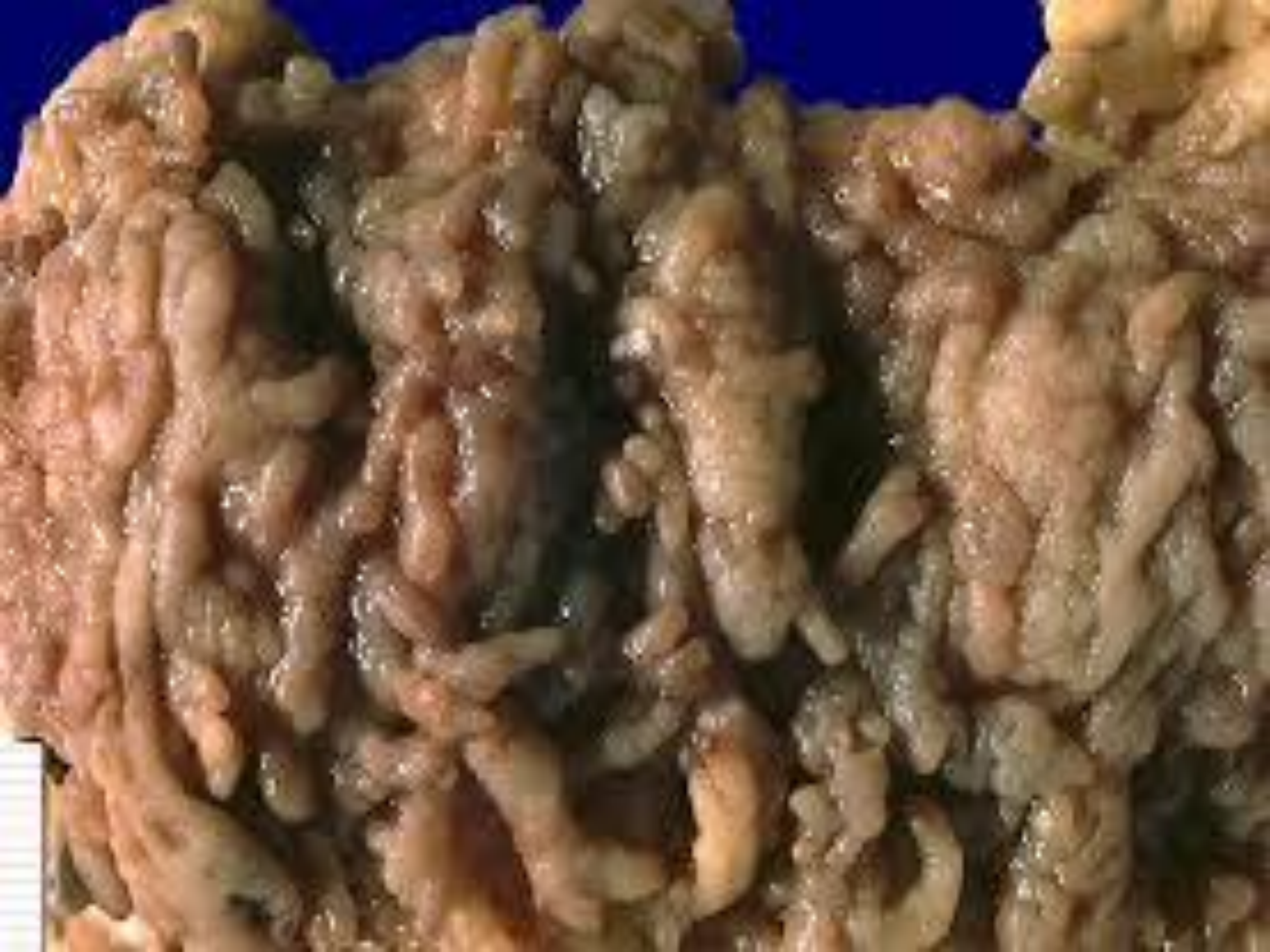


- Appendix may be involved.
- MUCOSA- Reddening, granularity with friability and easy bleeding.
- Extensive broad based ulceration.
- Ulcers are along the long axis of colon.(not surpentine ulcers)
- Isolated island of regenerating mucosa bulge upward to create “PSEUDOPOLYPS”
- Tips of polyps may fuse to create mucosal bridges.
- Indolent chronic disease- progressive mucosal atrophy and a flat , smooth mucosal surface lacking folds.

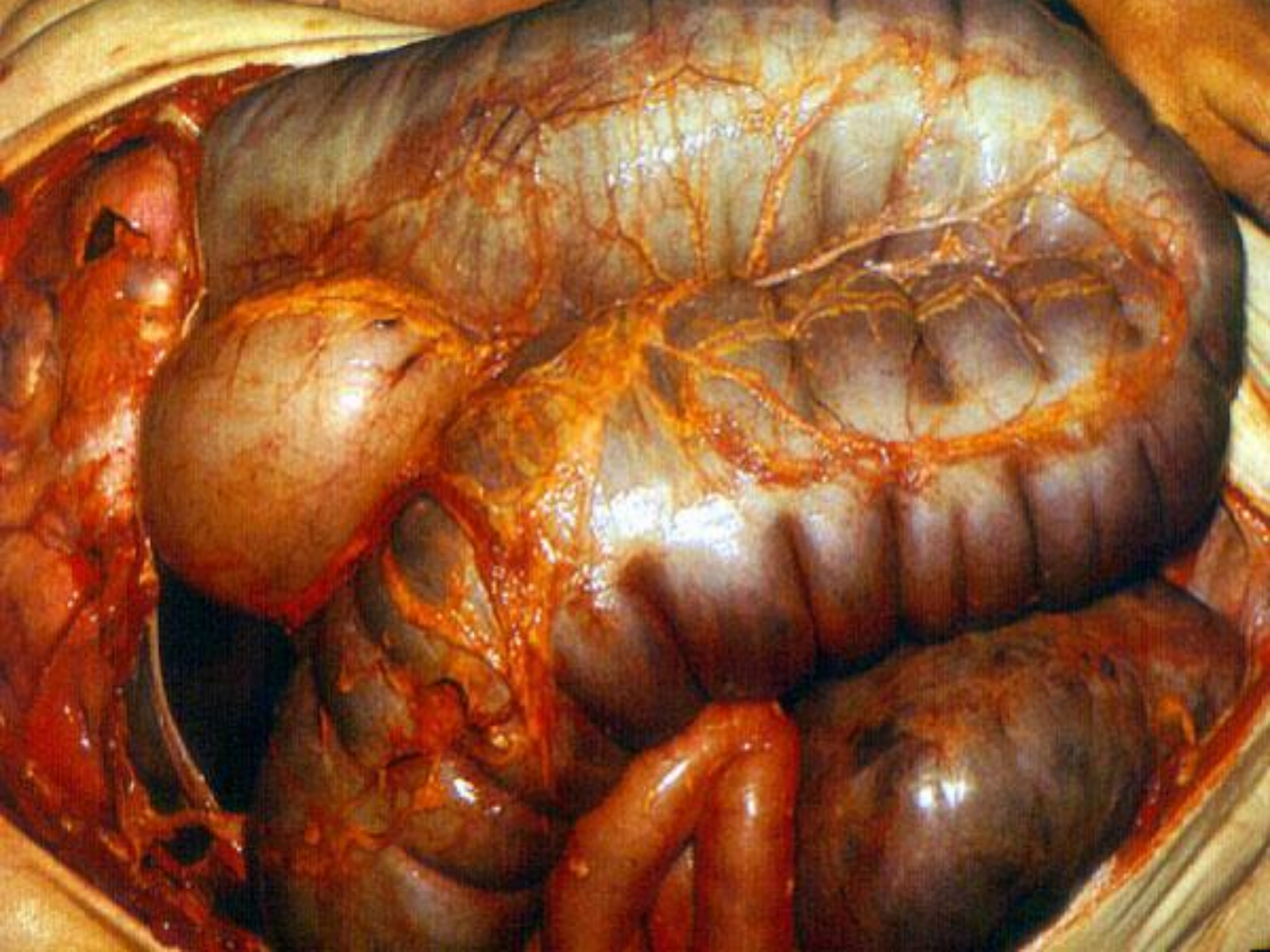
Healthy Colon

Ulcerative Colon

Pseudopolyps



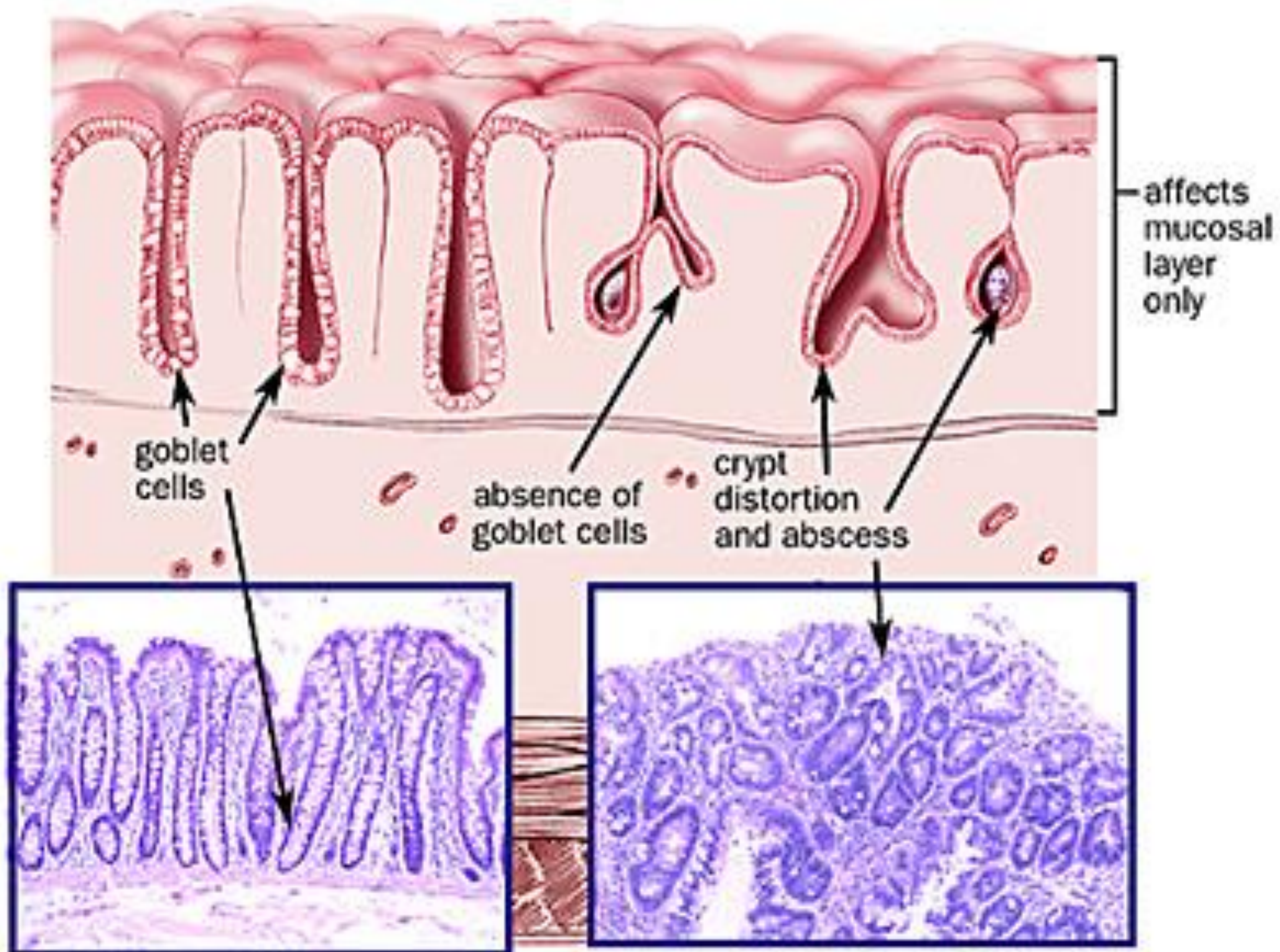
- No mural thickening.
- Serosal surface completely normal.
- Strictures do not occur.
- In severe cases toxic damage to muscularis propria and neural plexus lead to shut down of neuromuscular function.In this instance colon progressively dilates and becomes gangrenous. i.e. TOXIC MEGACOLON.
- It carries significant risk of perforation.

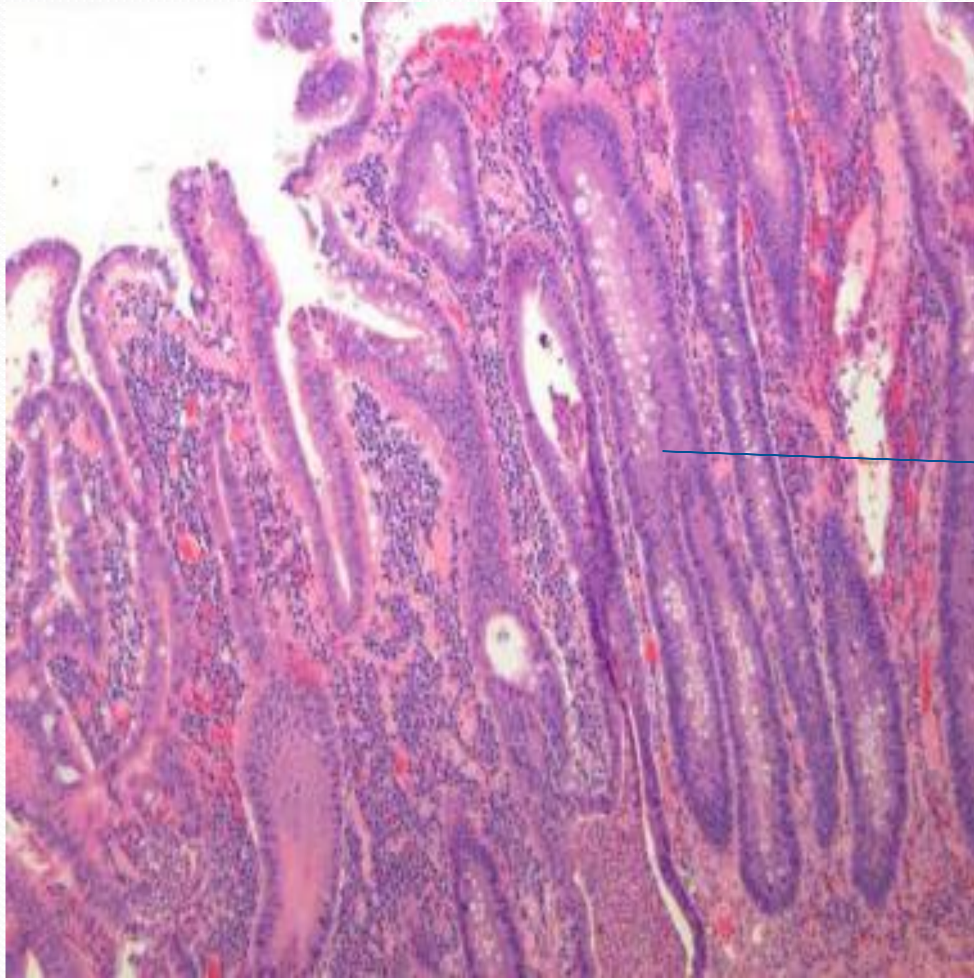


MICROSCOPIC EXAMINATION:

Diffuse mononuclear cell infiltration in lamina propria.

- Crypt abscesses (collection of neutrophils in crypt lumina.), crypt distortion & pseudopyloric metaplasia.
- Inflammatory process is diffuse & limited to mucosa & superficial submucosa.
- No granuloma formation.
- Further destruction of mucosa broad based ulceration limited to mucosa and submucosa but the muscularis propria is rarely involved.
- Submucosal fibrosis,mucosal atrophy and distorted mucosal architecture remains as residua of healed disease.

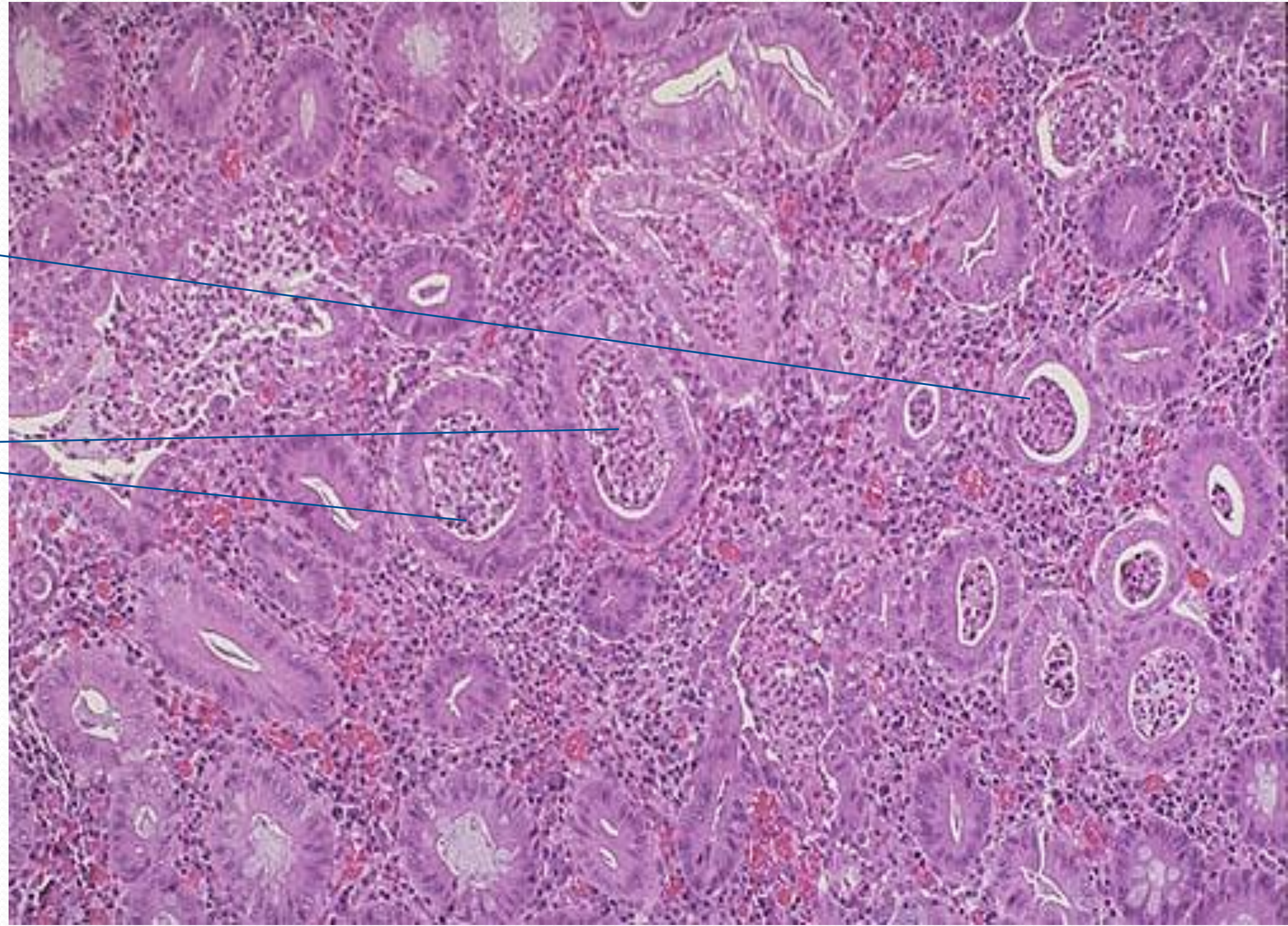

Normal colon
Ulcerative colitis
affects mucosal layer only
goblet cells
absence of goblet cells
crypt distortion and abscess

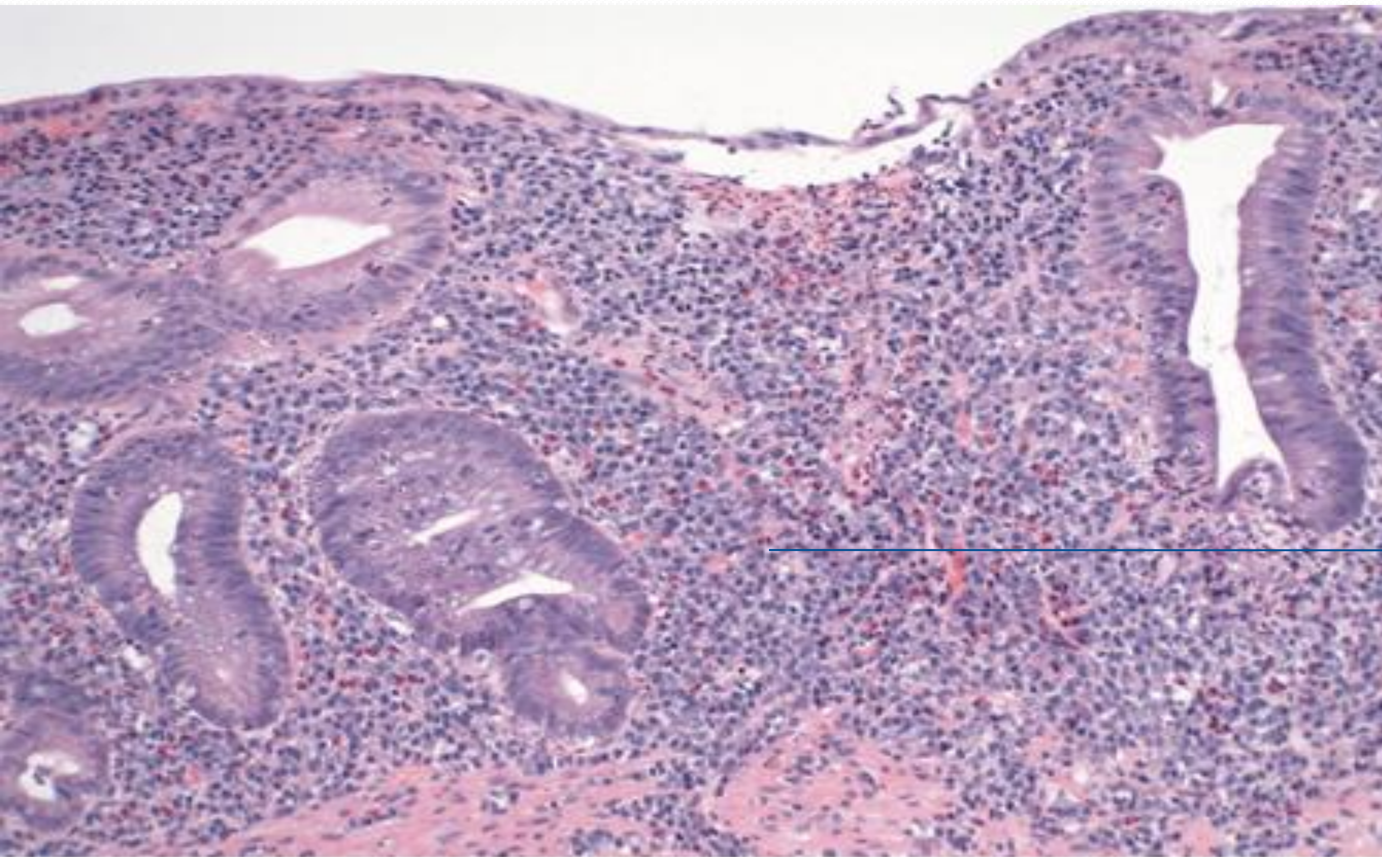


Distorted mucosal architecture :crowding & branching of crypts

Small crypt abcess

Large crypt abcess





Source: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J: *Harrison's Principles of Internal Medicine, 18th Edition*: www.accessmedicine.com

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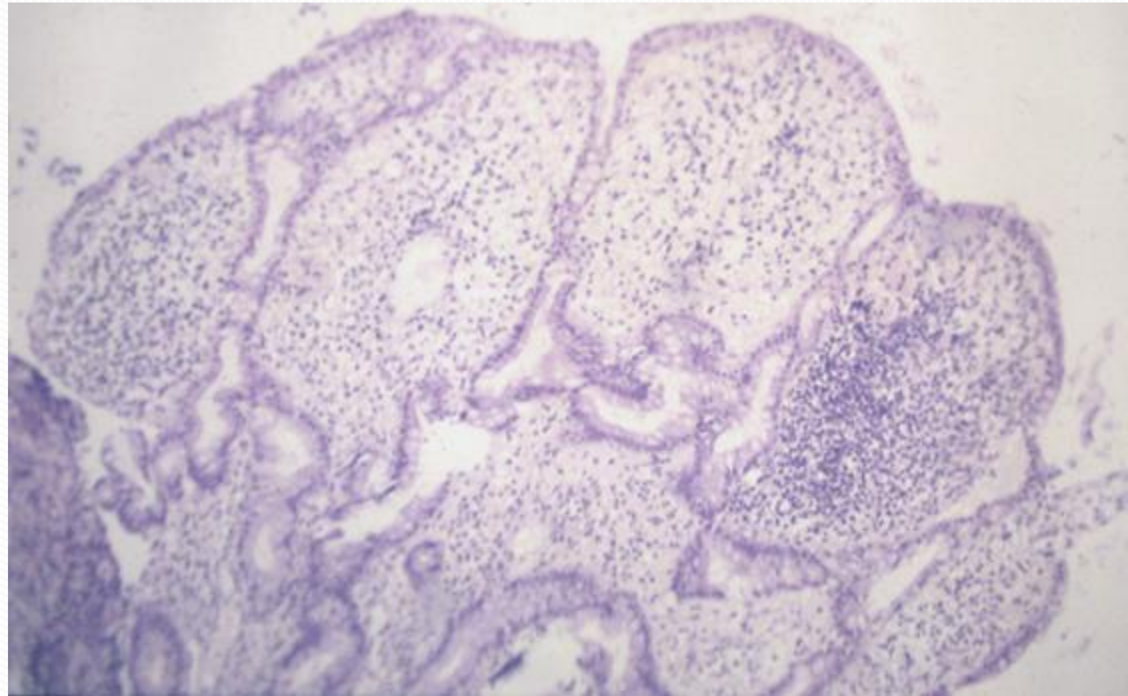
UC-diffuse mucosal inflammation

Chronic inflammation :

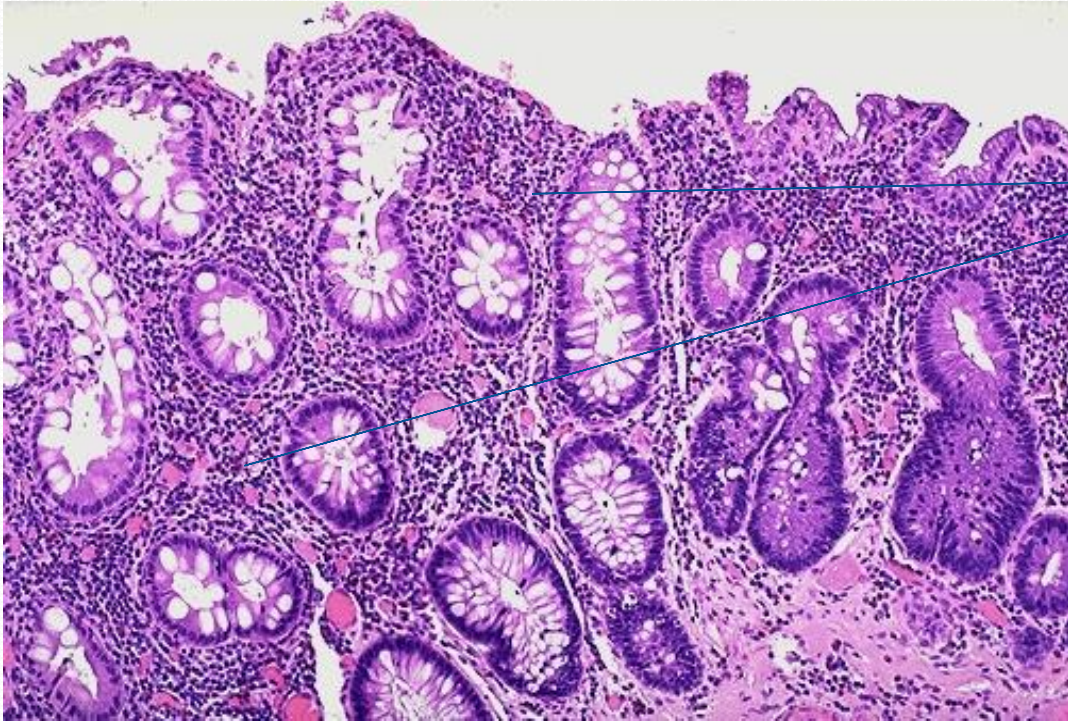
Crypt and villus architectural changes

- villous changes: blunting, atrophy, diffuse or irregular shortening
- crypts: branching, shortening, atrophy, grouping



Drumstick appearance

Ulcerative colitis



Mucosal inflammation

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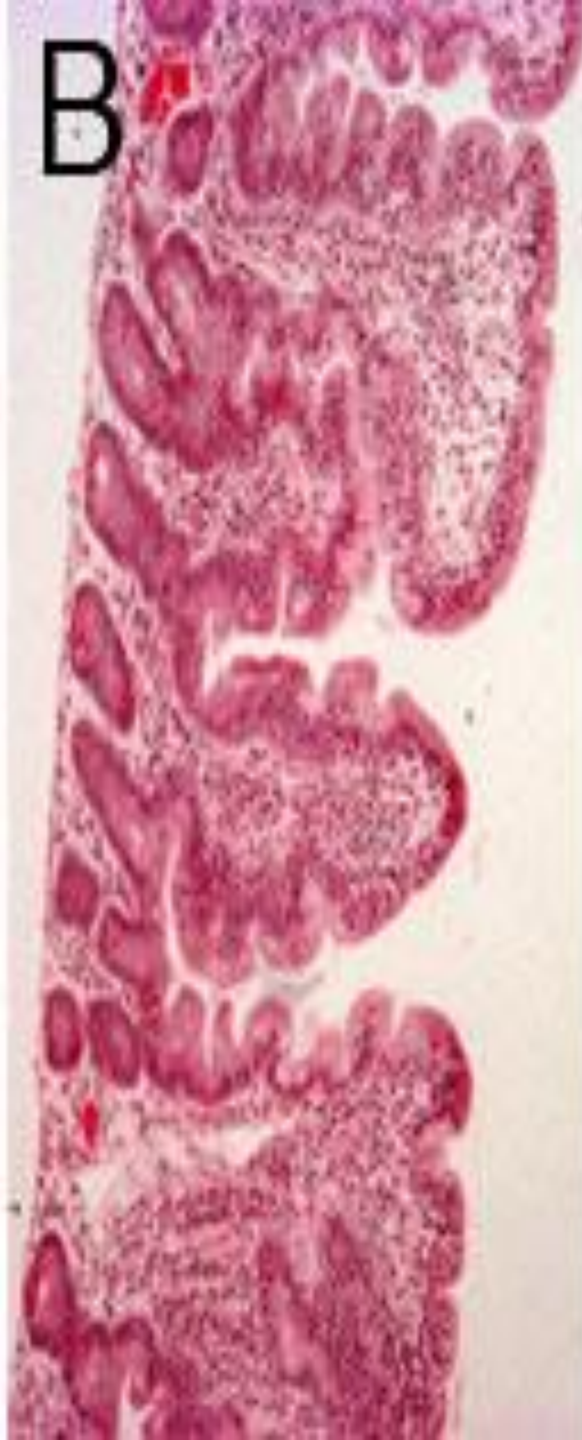
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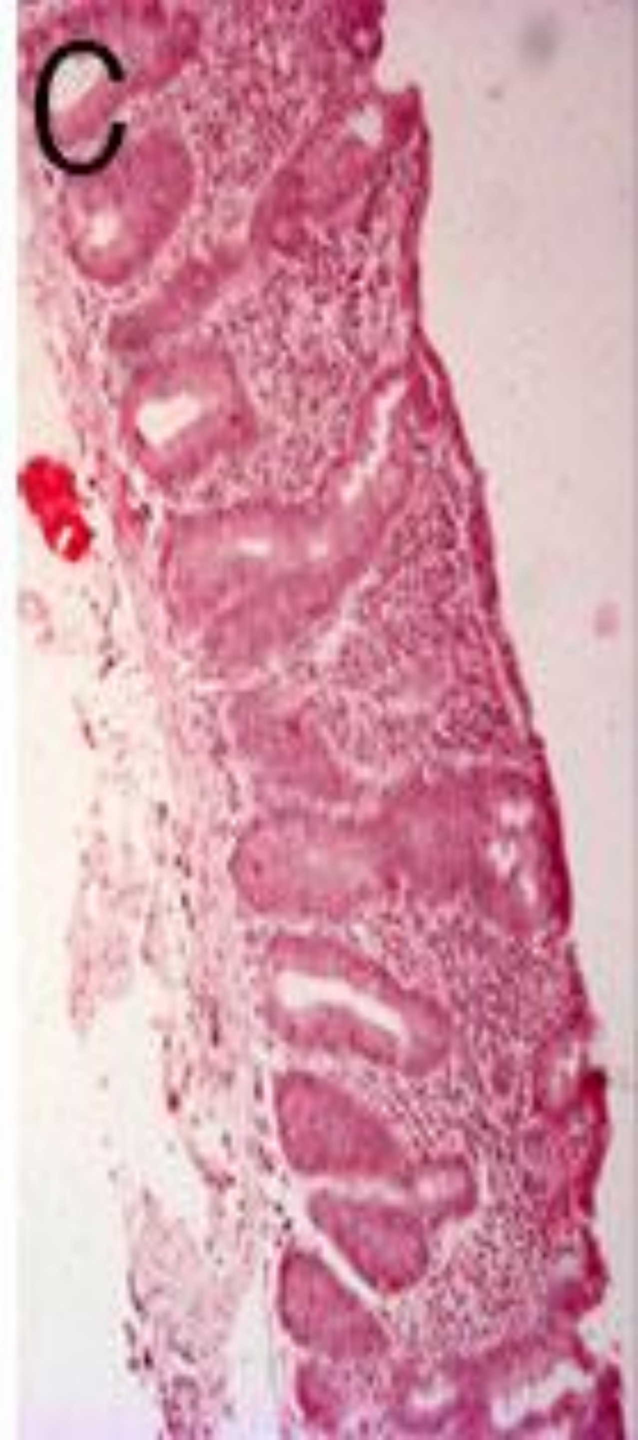
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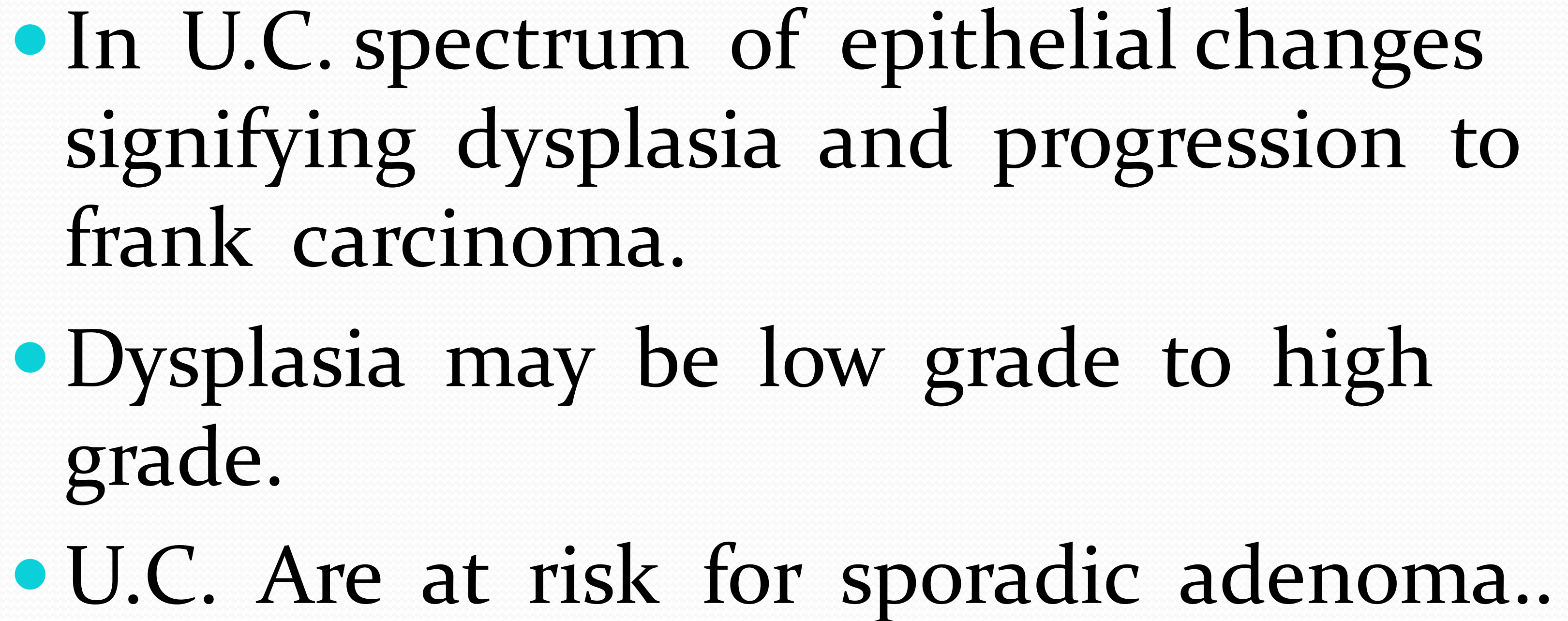
In U.C. spectrum of epithelial changes signifying dysplasia and progression to frank carcinoma.
Dysplasia may be low grade to high grade.
U.C. Are at risk for sporadic adenoma..

CLINICAL FEATURES:

- Relapsing disorder marked by attacks of bloody mucoid diarrhoea persist for days weeks or months.
- Asymptomatic interval of months to yrs. or decades.
- Fortunate pts. 1st attack is last attack.
- In some pts. Explosive initial attack may lead to serious bleeding fluid and electrolyte imbalance as to constitute medical emergency.

- Lower abdominal pain and cramps.
- Constipation in some patient due to disruption of normal peristalsis.

COMPLICATIONS :

- Toxic megacolon.
- Perforation & Death.
- U.C.- Dysplasia- Adenocarcinoma.

- INDETERMINATE COLITIS :
- In 10 % of patients,no definative diagnosis of U.C. or C.D. is possible. It is known as indeterminate colitis.
- Only colonic involvement.
- Patchy disease,fissures & family history of C.D.
- Antibody detection is helpful.

- Colitis-Associated Neoplasia

- Dysplasia arises in multiple sites underlying inflammatory disease mask symptoms and signs of carcinoma.
- U.C. characterised by DNA damage with microsatellite instability.
- Genomic instability and DNA repair deficiency throughout intestinal tract.

- The risk of dysplasia is related to several factors :
- Risk increases sharply after 8 to 10 years after disease initiation
- Patients with pancolitis are at greater risk than those with only left-sided disease.
- Greater frequency and severity of active inflammation may increase risk.

Associated carcinoma are often infiltrative without obvious exophytic masses further underscoring importance of early diagnosis. To facilitate early detection of neoplasia, patients are enrolled in surveillance programs approx. 8 years afer diagnosis of IBD. Exception to this is patients with primary sclerosing cholangitis , with markedly increased risk are enrolled at the time of diagnosis.

Important features to differentiate U.C FROM C.D.

Features	Crohn 's disease	Ulcerative Colitis
Macroscopic		
Bowel region affected	Ileum ± Colon	Colon only
Rectal involvement	Sometimes	Always
Distribution	Skip lesions	Diffuse
Stricture	Yes	Rare
Bowel wall appearance	Thick	Thin

Microscopic	Crohn 's disease	Ulcerative Colitis
Inflammation	Transmural	Upto mucosa & submucosa
Pseudopolyps	Moderate	Marked
Ulcers	Deep, knife like	Superficial,broad-based
Lymphoid reaction	Marked	Moderate
Fibrosis	Marked	Mild to none
Serositis	Marked	No
Granulomas	Yes (35 %)	No
Fistulas / Sinuses	Yes	No

Clinical	Crohn's Disease	Ulcerative Colitis
Perianal fistula	Yes (in colonic disease)	No
Fat / Vitamin malabsorption	Yes	No
Malignant potential	With colonic involvement	Yes
Recurrance after surgery	Common	No
Toxic megacolon	No	Yes

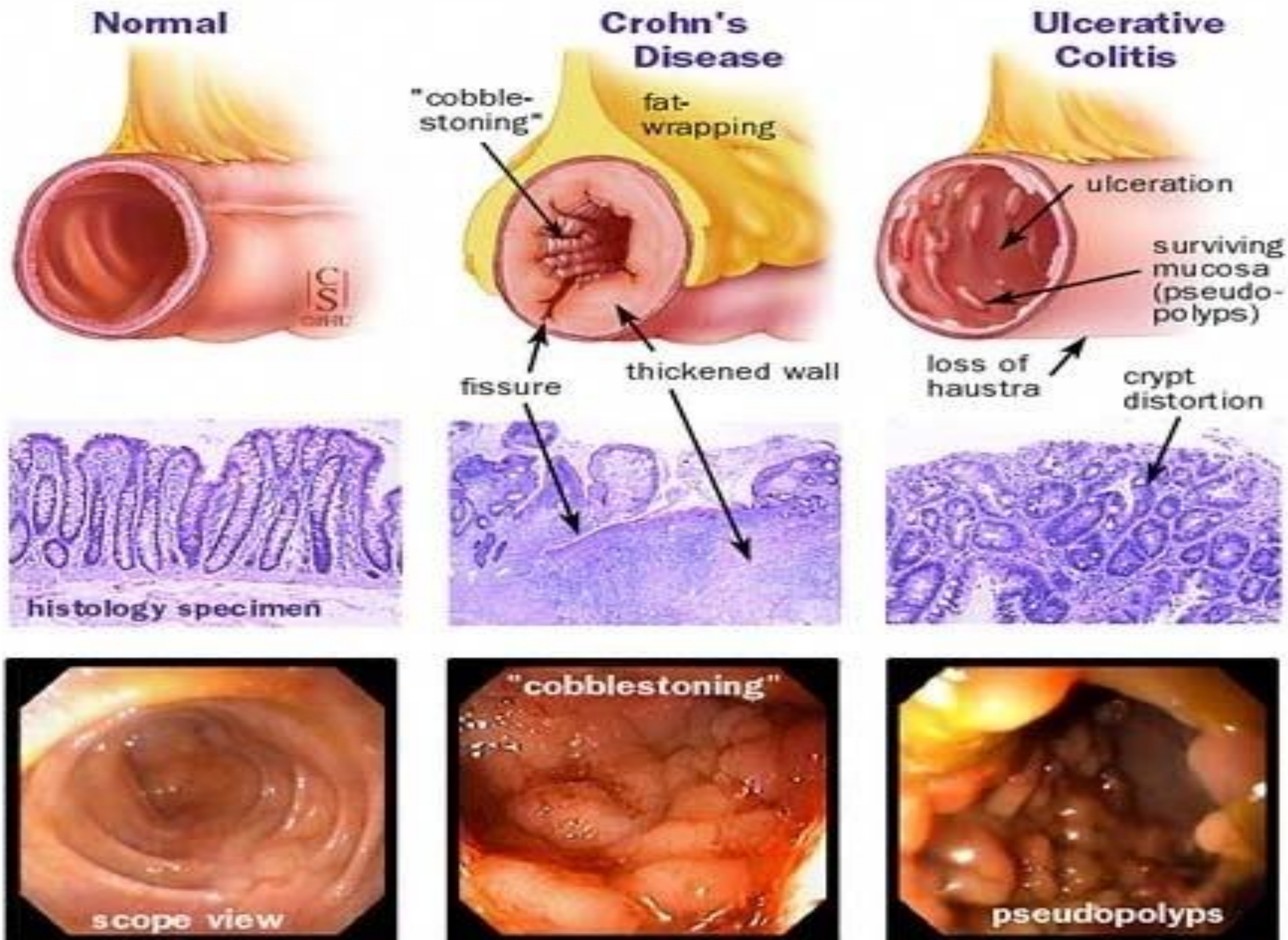

Figure 4. Gross (**top**), histological (**center**), and endoscopic (**bottom**) appearance of normal colon, Crohn's disease, and ulcerative colitis.

Diagnosis of IBD :

- 1-clinical history
- 2-radiographic examination
- 3-Lab findings
- 4pathological examination of tissue
- Laboratory test
- 1.PANCA i.e.perinuclear antineutrophilic cytoplasmic antibody
- +ve in 75 % pt.of UC & +ve in 11 % pt of CD.
- 2.ASCA i.e.antibody against sacchromyces cerevisiae
- Elevated in CD patient

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