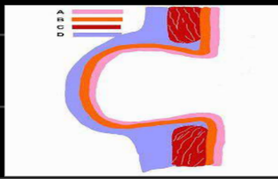
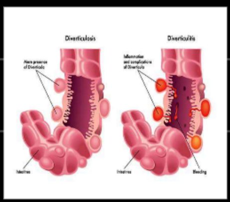
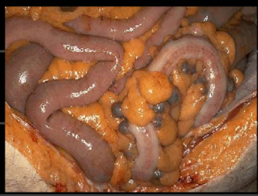
Sigmoid Diverticulitis: acquired pseudodiverticular outpouching of the Colonic Mucosa and SubMucosa. generally Multiple



-> Refferred to as diverticulosis
-> Increase in the pressure in the sigmoid colon. , Cause → exaggerated peristaltic contractions, why? diet low in fiber or constipation, which then reduce stool bulk. (↳ Amount of rehydrated stool.)
→ Result? → outpouching of the wall segments to the lumen.

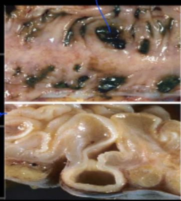
Morphology: ↳ Flask like outpouching,
- where? sigmoid colon
- Thin wall, why? atrophic Mucosa, compressed Submucosa.
- Attenuated or absent Musculosa.
- obstruction leads to → diverticulitis.
- Risk of perforations
- Recurrent diverticulitis leads to strictures.

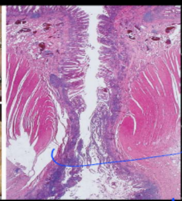




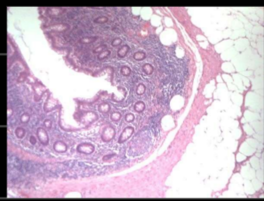
Cross section: outpouching of Mucosa beneath the Muscularis Propria.

Stool filled diverticula





Protrusion of the Mucosa and SubMucosa through the Muscularis propria.



Complications:
① obstruction ⇒ leads to inflammatory changes, Producing diverticulitis and peridiverticulitis.
② Perforations ⇒ How? it is only lined by Muscularis Mucosa and a thin layer of subserosal adipose tissue
may lead to perforation ← obstruction ← ↑ pressure ← Inflammation

Clinical Features:
① Mostly asymptomatic
② Intermittent lower Abdominal pain
③ Constipation or diarrhea

Tx:
① High fiber diet
② Antibiotics in case of diverticulitis.
③ Surgery.

Inflammatory Bowel Diseases: ⇒ inappropriate mucosal immune activation.

2 entities → Crohn disease / → Ulcerative colitis (UC). → Key to distinguish is the affected sites and the morphologic expression.

⇒ They affect the Female more! - frequently affect during Adolescence or young Adults. , Hygiene Hypothesis ⇒ more childhood exposure to microbes prevents excessive immune system reactions. Not Approved!

Pathogenisis ⇒ there is no certain cause!
① Combined effects
② Alteration in host interactions w/ Intestinal microbiota
③ Intestinal epithelial dysfunction
④ Aberrant mucosal immune response
⑤ Altered composition of gut Microbes.

Crohn disease

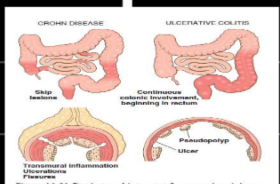
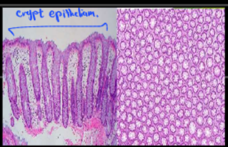
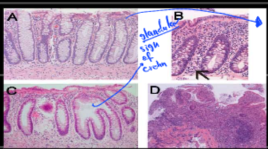


Figure 14–26 Distribution of lesions in inflammatory bowel disease. The distinction between Crohn disease and ulcerative colitis is based primarily on morphology.

- Might affect any part of the tract. Regional
  ↳ But Most common: ① terminal ilium ② ileocecal valve ③ cecum.
- affects all the layers. Transmural
- Multiple, seperate, sharply delineated areas of the disease Resulting in skip lesions, characteristic.
- Strictures are common
- Cobblestone appearance due to Sparing of interspersed mucosa and its coarsely textured, the diseased tissue is depressed than normal

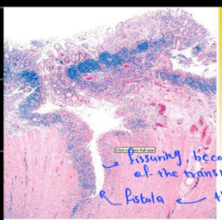


Normal Histology of the large Bowel ⇒

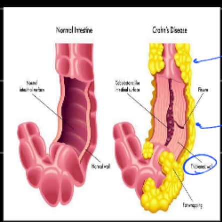


disturbance of the crypt lumina sign of crohinity

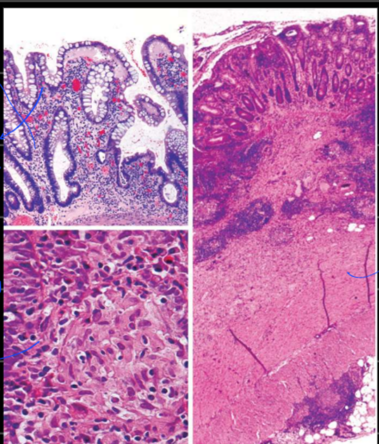
- Fissures frequently develop between Mucosal folds and may extend deeply to become sites of perforations or fistula tracts.
- The intestinal wall is thickned.



Crohn disease of the colon showing a deep fissure extending into the muscle wall, a second, shallow ulcer (upper right), and relative preservation of the intervening mucosa. Abundant lymphocyte aggregates are present, evident as dense blue patches of cells at the interface between mucosa and submucosa



in case w/ extensive transmural disease mesenteric fat frequently extends around the serosal surface → Creeping fat



① Abundant Neutrophils that infiltrate and damage crypt epithelium
② Crypt Abscess: clusters of Neutrophils w/in a crypt and often associated w/ crypt destruction.
③ Repeated cycles of crypt destruction and regeneration. ⇓ leads to bizzare looking and distortion of Mucosal archeticture.
④ noncaseating granulomas "Hall mark of crohn disease"
⑤ Paneth cell Metaplasia.

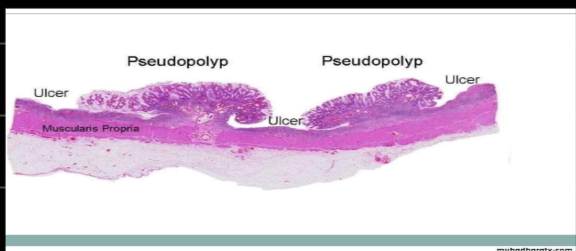
Ulcerative colitis.

- limited to the Colon and Rectum.
- extends only into mucosa and SubMucosa.

- Some extraintestinal manifestations of UC overlaps w/ those of crohn including:
① Migratory polyarthritis ② Sacroiliitis ③ Ankylosing spondilitis.
④ Uveitis ⑤ Skin lesions ⑥ Pericholangitis ⑦ Primary sclerosing cholangitis.

Morphology:
① always involves the Rectum
② Extends proximally in continuous pattern
③ Pan Colitis
④ Occasionally focal appendecial or cecal inflammation
⑤ Ulcerative Proctitis or Ulcerative Proctosigmoiditis
⑥ Small intestine is normal, except in Backwash ileitis

Macroscopic:
① Broad based ulcer
② Pseudopolyps
③ Mucosal atrophy
④ Mural thickening
⑤ Serosal surface is normal
⑥ No strictures
⑦ Toxic Megacolon



Microscopic:
① Inflammatory infiltrates
② Crypt Abscesses
③ Crypt distortion
④ Epithelial Metaplasia
⑤ SubMucosal fibrosis
⑥ No Skip lesions.
⑦ No granulomas
⑧ Inflammation is limited to Mucosa and Submucosa.

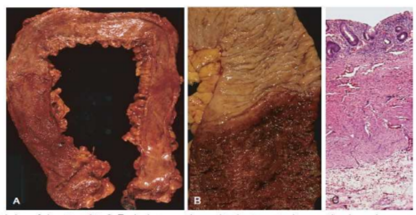
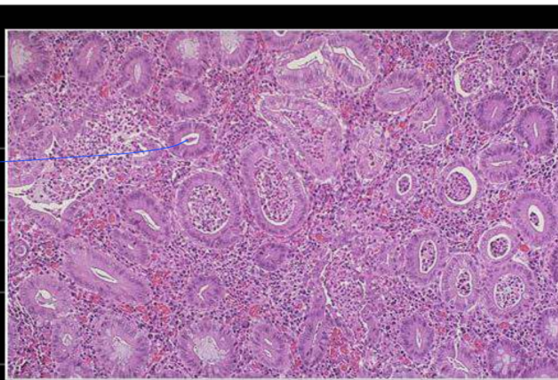


Figure 14–30 Pathology of ulcerative colitis. A, Total colectomy with pancolitis showing active disease, with red, granular mucosa in the cecum (left) and smooth, atrophic mucosa distally (right). B, Sharp demarcation between active ulcerative colitis (bottom) and normal (top). C, This full-thickness histologic section shows that disease is limited to the mucosa. Compare with Figure 14–28, C.

Crypt Abscesses ←



Clinical Features

- **The clinical manifestations of Crohn disease are extremely variable.** ***In most patients, disease begins with intermittent attacks of relatively mild diarrhea, fever, and abdominal pain.***

Vit.B12 is absorped in the iluem

- **Iron deficiency anemia, nutrient malabsorption, or malabsorption of vitamin B12 and bile salts may developed.**

uveitis is inflammation of the uvea — "a blood-vessel-rich lining inside the eye that brings nutrition to the cornea, retina, iris, and lens

- **Extraintestinal manifestations of Crohn disease include uveitis, migratory polyarthritis, sacroiliitis, ankylosing spondylitis, erythema nodosum, and clubbing of the fingertips, any of which may develop before intestinal disease is recognized.**

Erythema nodosum: skin inflammation that is located in a part of the fatty layer of skin.

- **The risk of colonic adenocarcinoma is increased in patients with long-standing colonic Crohn disease.**

Clinical Features

- Ulcerative colitis is a relapsing disorder characterized by attacks of bloody diarrhea with expulsion of stringy, mucoid material and lower abdominal pain and cramps that are temporarily relieved by defecation.
- These symptoms may persist for days, weeks, or months before they Subside.
- More than half of the patients have mild disease.
- The factors that trigger ulcerative colitis are not known, but as noted previously, infectious enteritis precedes disease onset in some cases.
- The initial onset of symptoms also has been reported to occur shortly after smoking cessation in some patients, and smoking may partially relieve symptoms.

Table 14–5 Features That Differ Between Crohn Disease and Ulcerative Colitis

Feature	Crohn 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
Inflammation	Transmural	Limited to mucosa and submucosa
Pseudopolyps	Moderate	Marked
Ulcers	Deep, knifelike	Superficial, broad-based
Lymphoid reaction	Marked	Moderate
Fibrosis	Marked	Mild to none
Serositis	Marked	No
Granulomas	Yes (~35%)	No
Fistulas/sinuses	Yes	No
Clinical		
Perianal fistula	Yes (in colonic disease)	No
Fat/vitamin malabsorption	Yes	No
Malignant potential	With colonic involvement	Yes
Recurrence after surgery	Common	No
Toxic megacolon	No	Yes

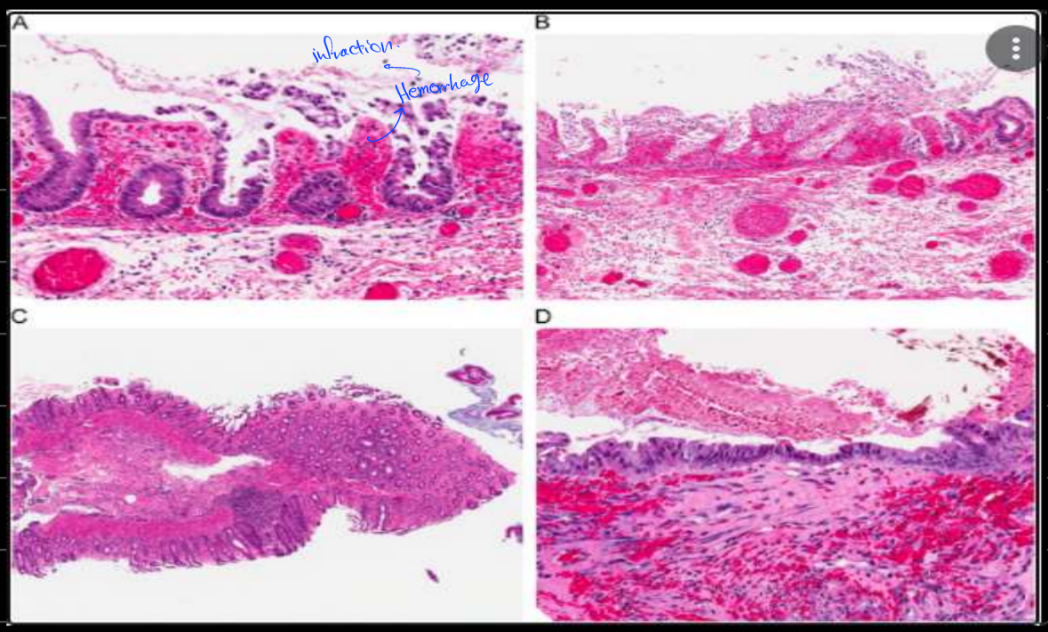
NOTE: Not all features may be present in a single case.

Ischemic Bowel diseases

Can range from:
- ① Mucosal infraction ⇒ Extend no deeper than the Muscularis Mucosa
- ② Mural infraction ⇒ mucosa + Submucosa
- ③ Trans Mural infraction ⇒ all the layers

] ⇒ caused by Secondary to acute or chronic hypoperfusion

] ⇒ due to Vascular obstruction.



Other Causes:
- ① CMV infection
- ② Radiation enterocolitis
- ③ Necrotizing enterocolitis
- ④ Angiodysplasia is characterized by malformed Submucosal and Mucosal blood vessels.

Clinical Features

- Ischemic bowel disease tends to occur in older persons with coexisting cardiac or vascular disease.
- Acute transmural infarction typically manifests with sudden, severe abdominal pain and tenderness, sometimes accompanied by nausea, vomiting, bloody diarrhea, or grossly melanotic stool.
- Peristaltic sounds diminish or disappear, and muscular spasm creates board like rigidity of the abdominal wall.
- *Mucosal and mural infarctions* by themselves may not be fatal. However, these may progress to more extensive, in transmural infarction.