Inflammatory Bowel Disease

Important

Notes (Doctors)

431 SURGERY TEAM

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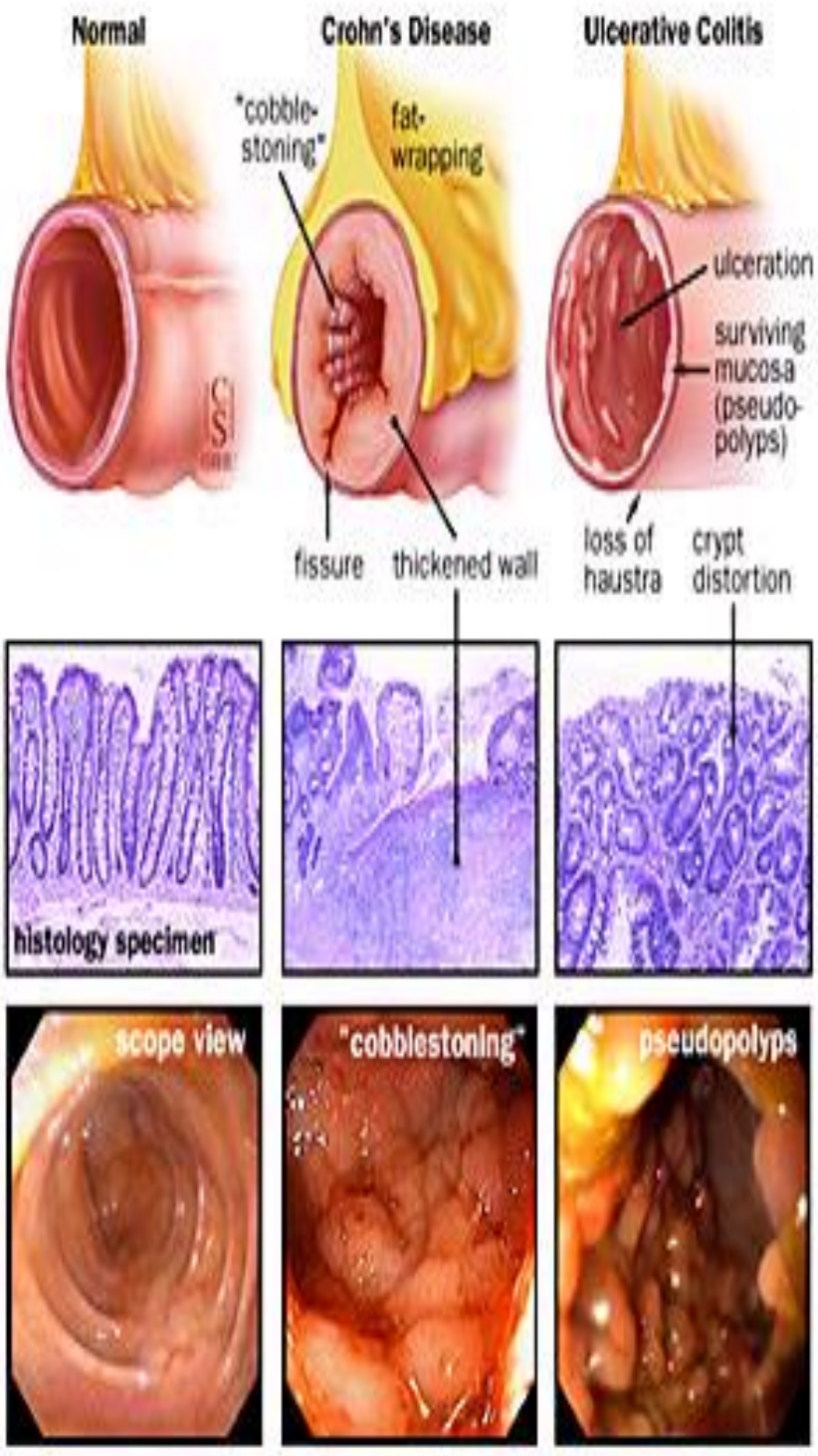
The doctor said we should know and we will be asked about:

Pathological features, endoscopic features, gross features, surgical indications and the differences between the two.

Crohn's and Ulcerative Colitis

- Two chronic diseases that cause ulceration & inflammation of the intestines.
- They have some features in common but there are some important differences.
- **Increasingly diagnosed in Saudi Arabia (Maybe due to lifestyle westernization).**
- **Pathophysiology:** is **unclear (Unknown)** a number of factors may be involved:
  - Host Factors
    - Genetics (Twins, Relatives, & children)
    - Obesity
    - Appendectomy (protective of ulcerative colitis)
  - Current Theory:
    There is a genetic defect that affects the immune system, so that it attacks the bowel wall in response to stimulation by an offending antigen, like bacteria, virus, or protein in the food.
  - Environmental Factors
    - Smoking (Protective in ulcerative and a risk in crohn's)
    - Infection **(Mycobacterium avium paratuberculosis was isolated in CD)**
    - Oral Contraception



	UC	*Crohn's disease*
Blood in stool	Yes	Occasionally
Mucus	Yes	Occasionally
Systemic symptoms	Occasionally	Frequently
Pain	Occasionally	Frequently
Abdominal mass	Rarely	Yes
Perineal disease	No	Frequently
Fistulas	No	Yes
Small intestine obstruction	No	Frequently
Colonic obstruction	Rarely	Frequently
Response to antibiotic	No	Yes
Recurrence after surgery	No	Yes
Rectal sparing	Rarely	Frequently
Continuous disease	Yes	Occasionally
„cobblestoning"	No	Yes
Granuloma on biopsy	No	Occasionally

Ulcerative Colitis

- An inflammatory disease of the large intestine
- Recurring Inflammation and ulceration of the mucosa of the large intestine
- Almost always involve the rectum and extend proximally
- It extends in a **continuous** fashion
  - 40-50% **of patients have disease limited to the rectum and rectosigmoid (Majority)**
  - 30-40% of patients have disease extending beyond the sigmoid
  - 20% of patients have a total colitis

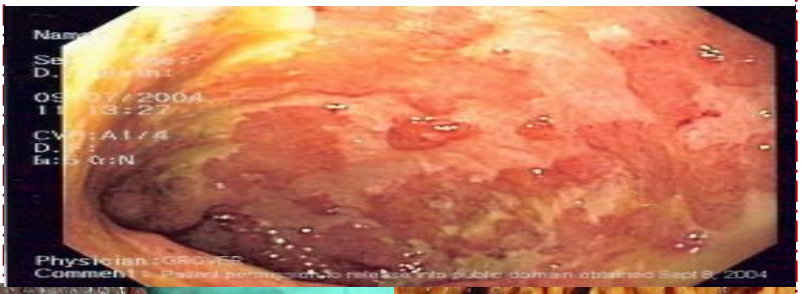
Crohn's Disease

- An inflammatory disease that affects **any part** of the GI tract (mouth to anus).
- Recurring **transmural** Inflammation of the bowel
- About 80% have small bowel involvement, mostly the **terminal ileum (and rectum is spared)**
- Characterized by **skip** lesions
  - **40-55% of patients have both small and large intestines disease**
  - 30-40% of patients have small bowel disease alone
  - 15-25% of patients have colitis alone

20% of patients have indeterminate colitis. In this case the patient has features of CD and the true Diagnosis is UC, or vice versa. It's very important to differentiate them, because treatment varies.

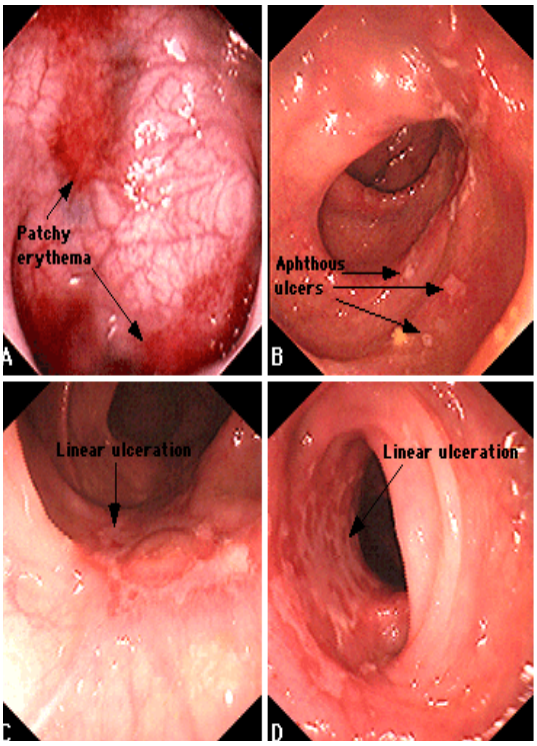
Macroscopic Appearance

- Erythematous mucosa, has a granular surface (=pseudopolyps), looks like sand paper
- In more severe diseases hemorrhagic, edematous and ulcerated
- In fulminant disease a toxic colitis or a toxic megacolon may develop (A surgical ER, very severe)
- (Normal outside, pathology inside)



Macroscopic Appearance

- Mild disease has aphthus or small superfecial ulcers (linear ulcers)
- In more severe diseases there is the characteristic **cobblestone** appearance
- Thickening of the bowel wall with **creeping fat** (Pathology from outside, not the lumen)



Endoscopic progression of Crohn's disease Ulcers are the dominant endoscopic feature in Crohn's disease. These tend to be linear and discontinuous, or "skip lesions". Early changes may be only patchy erythema (panel A) or aphthoid ulcers (panel B). Linear ulcers (panel C) are seen with more advanced disease, culminating in very deep and long serpiginous ulcers (panel D). Courtesy of James B McGee, MD.

Microscopic Appearance

- **Crypt abscesses**
- Branching of crypts
- Atrophy of glands
- **Loss of mucin in Goblet cells**

Microscopic Appearance

- **Transmural** inflammation
- **Focal ulcerations**
- Acute and chronic inflammation
- **Granulomas** may be noted in up to 30 percent of patients **(Non caseating granulomas, Unlike TB which causes caseating granulomas)**

Presentation

- The major symptoms of UC are:
  - **Diarrhea** (4 to more than 10 per day)
  - Rectal **bleeding**
  - Tenesmus & Passage of mucus
  - Crampy abdominal pain & Fever
- Exam is often normal unless complications occur.

(Tenesmus pathophysiology: Rectum is involved and fibrosed; sends messages to the brain that stool needs to be evacuated while it doesn't)

Extra-intestinal manifestations

- Arthritis (most common extra-intestinal manifestation) *according to step-up.
- Uveitis and Episcleritis
- Erythema Nodosum and Pyoderma Gangrenosum
- Ankylosing Spondylitis
- Sclerosing cholangitis (more common than chron's)

(All extra intestinal manifestations disappear after colectomy except the last two)

Complications

- Hemorrhage
- Toxic megacolon
- Perforation
- Stricture
- Cancer (Proven risk factor for colorectal cancer; almost annual biopsies are taken to look for dysplasia)

Treatment

- Mainly medical treatment
- Indications for surgical treatment: **(Elective)**
  - **Failure of medical management** (despite maximum medical therapy)
  - **Treating complications** (E.g: Steroid dependency – failure to thrive – SE of medications)
  - **Prophylaxis for cancer**
  - **Cure after colectomy**
- **Emergent surgeries:**
  - **Hemorrhage**
  - **Toxic megacolon (Fulminant colitis)**
  - **Perforation**
  - **Stricture**
- You enter the abdomen once and take everything (remove the entire colon and do a pouch; contraindicated in emergency and cancer).
- Curable, no need for medication after surgery.

Presentation

- The major presentations of CD are:
  - Crampy abdominal pain
  - **Diarrhea (occasionally bloody; not as frequent as in ulcerative)**
  - **Weight loss**
  - Colitis and **Perianal** disease
  - Duodenal Disease

Extra-intestinal manifestations

- Arthritis (most common extra-intestinal manifestation). *according to step-up.
- Uveitis and Episcleritis
- Erythema Nodosum and Pyoderma Gangrenosum
- Renal stones
- Gall stones
- Amyloidosis

Complications

- Phlegmons & abcesses
- Fistulas
- Stricture
- Malabsorption and weight loss
- Perianal disease
- Cancer

Treatment

- Mainly medical treatment
  - Oral 5-aminosalicylates (sulfasalazine)
  - Antibiotics (Ciprofloxacin, Metronidazole)
  - Glucocorticoids (Prednisone)
  - Immunomodulators (Azathioprine)
  - Biologic therapies (infliximab)
- Indications for surgical treatment:
  - **Failure of medical management**
  - **Treating complications**
  - **Not a Cure**
- Surgery is only to keep the patient in the remission phase; even if surgery is performed there is a high incidence for recurrence and patient will still be on medications. So if you do surgery you keep it minimal to the lesion only.

Questions:

1- 30 years old female presented with abdominal pain and bloody diarrhea, colonoscopy and biopsy was done. Which one of the following histological features will be suggested diagnosis Ulcerative Colitis?

A. Uniform crypt abscess with goblet depletion

B. Mononuclear cell infiltrate with non caseating granuloma

C. Mucosal and submucosal thickening with fibrosis and stricture

D. Neuronal hyperplasia with vacuities and aphthoid ulcer

2- Which one of the following organisms is thought have a role in etiology of Crohn's disease:

A. Mycobacterium tuberculosis

B. Mycobacterium paratubercolosis

C. Campylobacter jujeni

D. Salmonella typhosa

3- A 22 y/o male presents to the clinic complaining of abdominal pain, diarrhea and weight loss lasting for one month. He gave a history of occasional occult bleeding in stool. The most likely diagnosis is:

A. Crohn's disease

B. Peptic ulcer

C. Incarcerated hernia

D. Intestinal obstruction

4- Features of the previous diagnosis include all the followings EXCEPT:

A. Mucosal ulceration separated by normal mucosa

B. All cases should be treated surgically

C. The most common site is the ilium

D. Development of fistulae is a known complication

5- Crypt abscesses are a feature of:

A. Crohn's Disease

B. Ulcerative Colitis

C. Colon cancer

D. Both A & B

6- Transmural inflammation of the colon is seen in:

A. Crohn's Disease

B. Ulcerative Colitis

C. Colon cancer

D. Both A & B

7- A 25 year old female presents to your clinic complaining of 3 months history of recurrent crampy abdominal pain. Which one of the following points in history is suggestive of crohn's disease:

A. family history of inflammatory bowel disease

B. history of being non smoker

C. history of bloody diarrhea

D. history of perianal fissure

Answers: 1-A 2-B 3-A 4-B 5-B 6-A 7-A