INFLAMMATORY INTESTINAL DISEASE

Sigmoid Diverticulitis

- Acquired:(It affects older adults)
- Elevated intraluminal pressure in the sigmoid colon ➡️ Exaggerated peristaltic contractions ➡️ Low fiber diet and constipation ➡️ Outpouchings of colonic mucosa and submucosa ➡️ Pseudodiverticulae
- called pseudodiverticulae, as it lacks the four layers of the bowel wall.
- MORPHOLOGY
  - Flask like outpouchings
  - Mostly in sigmoid colon.
  - Thin wall (atrophic mucosa, compressed submucosa)
  - Attenuated or absent muscularis.
  - Obstruction by afecalith material leads to inflammation resulting in diverticulitis.
  - Risk of perforation. (With perforation,the fecal material will go out into the peritoneal cavity with resultant peritonitis and severe abdominal pain)
  - Recurrent diverticulitis leads to strictures
- Microscopy
  - the muscular propria is not a part of the wall. Therefore, the wall is thin and is exposed to perforation if diverticulitis takes place.
- Clinical Features
  - Mostly asymptomatic.(other than the symptoms of constipation)
  - Intermittent lower abdominal pain
  - Constipation or diarrhea.
- Tx
  - High fiber diet
  - Antibiotics in diverticulitis
  - Surgery:If the symptoms are very severe with resultant stenosis and stricture formation, then surgery is offered (sigmoidectomy).

Chronic Inflammatory bowel diseases (CIBD)

- Genetic predisposition(Familyhistory is very important to take.)
- Inappropriate mucosal damage.
- subdivided into two groups:
  - Ulcerative colitis(UC):
    - Description
      - Always involves the rectum
      - Extends proximally in continuous pattern so we do not have skip lesions .
      - Pan colitis.(the disease is only restricted to the rectum and the sigmoid and may extend to different distances from the rectum.,itcan reach up to the cecum Where we can call it pancolitis)
      - Occasionally focal appendiceal or cecal inflammation
      - Ulcerative proctitis(which is only involving the rectum) or ulcerative proctosigmoiditis(rectum and the sigmoid)
      - Small intestine is normal (except in backwash ileitis very small area just a few centimeters of the terminal ileum are affected through the ileocecal valve but the small intestine is normal in ulcerative colitis)
    - Morphology
      - Macroscopic:
        - Broad-based ulcers.(they are none deep non-serpentine non- linear shallow ulcers usually affecting mucosa and submucosa.)
        - Pseudopolyps (the unaffected fragments of the bowel may appear elevated above the level of mucosa so we call them pseudopolyps)
        - Mucosal atrophy in long standing
        - Mural thickening absent
        - Serosal surface normal
        - No strictures
        - Toxic megacolon — (It is not specific for ulcerative colitis)
      - Microscopic:
        - Inflammatory infiltrates
        - Crypt abscesses(in the active state)
        - Crypt distortion(in the chronic state)
        - Epithelial metaplasia (like Paneth cell metaplasia)
        - Submucosal fibrosis(we do not see thickening)
        - Inflammation limited to mucosa and submucosa.
        - ➡️ No skip lesions ➡️ No granulomas.
    - Clinical Features
      - Relapsing remitting disorder
      - Attacks of bloody mucoid diarrhea +lower abdominal cramps
      - Temporarily relieved by defecation
      - Attacks last for days, weeks, or months.
      - Asymptomatic intervals.
      - Infectious enteritis may trigger disease onset(remember it is a trigger not a cause), or cessation of smoking.
      - Colectomy cures intestinal disease only
  - Crohn disease(CD):
    - Morphology
      - Macroscopic:
        - Regional enteritis.
        - Any area of GIT.
        - Most common sites: terminal ileum, ileocecal valve, and cecum.
        - Affected Organs:
          - Small intestine alone 40%
          - Small intestine and colon 30%
          - Colon only 30%
        - Skip lesions
        - Strictures common — There is transmural inflammation and when it subsides, fibrosis takes place resulting in strictures.
        - Earliest lesion: aphthous ulcer, shallow ulcer
        - Elongated, serpentine ulcers.
        - Edema , loss of bowel folds
        - Cobblestone appearance — The depressions "between stones"are the ulcerations and affected areas. The "stones" are the unaffected (or slightly affected) mucosa
        - Fissures, fistulas, perforations.
        - Thick bowel wall (transmural inflammation, edema, fibrosis, hypertrophic muscularis propria MP)
        - Creeping fat- Mesenteric fat will go and attach to the area of transmural inflammation.
      - Microscopic:
        - Neutrophils in active disease.
        - Crypt abscesses.(crypts are the glands that are found in the colon or in the small bowl
        - Ulceration
        - Distortion of mucosal architecture
        - Panethcell metaplasia in left colon(normally in the colon we do not see Paneth cells, so when we start seeing them in the rectum and the sigmoid and in the descending colon this is considered metaplastic change and it is an abnormal change due to chronic inflammation)
        - Mucosal atrophy.
        - Noncaseating granulomas (hallmark) only in 35% of cases. Where?????? In any area of the bowel whether affected by inflammation or not affected by inflammation and also we can see them in mucosa, submucosa, muscularis and serosa in the affected areas or unaffected areas
    - Clinical Features
      - Intermittent attacks of mild diarrhea, fever, and abdominal pain
      - Acute right lower-quadrant pain and fever
      - Bloody diarrhea(if there is a colonic involvement) and abdominal pain (colonic disease)
      - Asymptomatic intervals (weeks to months)
      - Triggers: physical or emotional stress, specific dietary items, NSAID use, and cigarette smoking.
    - Complications:
      - Iron-deficiency anemia(due to loss of blood in bloody diarrhea)
      - Hypoproteinemia and hypoalbuminemia, malabsorption of nutrients, vitamin B12 and bile salts
      - Fistulas, peritoneal abscesses, strictures (due to the fibrosis and the thickening in the bowel wall)
      - Risk of colonic adenocarcinoma
    - Extra intestinal manifestations
      - Uveitis (inflammation of the iris)
      - Migratory polyarthritis,(the joint is affected by pain, redness and swelling .. And this arthritis is not infectious it is immune mediated)
      - Sacroiliitis
      - Ankylosing spondylitis
      - Erythema nodosum — These red elevated lesions (they are usually tender so they are painful on touch) that appear on the lower limbs mainly are an extra intestinal manifestation in a patient with crohn's disease
      - Clubbing of the fingertips — long standing manifestation of Crohn's disease. It is not a specific sign for Crohn's disease because it can be seen in other chronic conditions like in Cirrhosis and chronic pulmonary diseases
- Epidemiology
  - Adolescence & young adults
  - 2nd peak in fifth decade.
  - Geographic variation.
  - The underlying cause is not well established but there is the Hygiene hypothesis: childhood exposure to environmental microbes prevents excessive immune system reactions. Firm evidence is lacking!!!.

Colitis-Associated Neoplasia

- Long standing UC and CD.
- Begins as dysplasia >>>> carcinoma.
- Risk depends on
  - Duration of disease: increase after 8-10 years .
  - Extent of involvement: more with pancolitis.
  - Inflammation: frequency & severity of active disease with neutrophils.

When the rectum is spared, it is unlikely to be UC and more likely to be CD.

Primary sclerosing cholangitis (more with UC)(which is a disease affecting the bile ducts in the liver causing their fibrosis and narrowing leading to elevated levels of bilirubin and jaundice and it is more associated with ulcerative colitis than Crohn's disease

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