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Inflammatory Bowel Diseases

The images below have file sizes ranging from 50 to 250k.

Inflammatory bowel disease (IBD) can involve either or both the small and large bowel. Crohn's disease and ulcerative colitis are the best known forms of IBD, and both fall into the category of "idiopathic" inflammatory bowel disease because the etiology for them is unknown. Pathologic findings are generally not specific, although they may suggest a particular form of IBD. "Active" IBD is characterized by acute inflammation. "Chronic" IBD is characterized by architectural changes of crypt distortion and scarring. Crypt abscesses (active IBD consisting of neutrophils in crypt lumens) can occur in many forms of IBD, not just ulcerative colitis.

Ulcerative Colitis

Ulcerative colitis (UC) involves the colon as a diffuse mucosal disease with distal predominance. The rectum is virtually always involved, and additional portions of colon may be involved extending proximally from the rectum in a continuous pattern. The etiology for UC is unknown. UC is more common in persons of Caucasian race, in women, and in young persons (peak incidence at ages 20 - 25 years).

Clinical findings can include diarrhea, but the amount of diarrheal stool is not great, and is often accompanied by tenesmus. Patients with prolonged UC are at increased risk for developing colon cancer. Colonic biopsy can be used to detect dysplasia, a neoplastic change in the mucosa which implies an increased probability of malignancy. Patients with UC are also at risk for development of liver diseases including sclerosing cholangitis and bile duct carcinoma.

1. **Ulcerative colitis, colon, gross.**
2. **Ulcerative colitis, colon, gross.**
3. **Ulcerative colitis, microscopic.**
4. **Ulcerative colitis, microscopic.**
5. **Ulcerative colitis, microscopic.**
6. **Colonic adenocarcinoma, gross.**

Crohn's Disease

Crohn's disease can involve any part of the GI tract, but most frequently involves the distal small bowel and colon. Inflammation is typically transmural and can produce anything from a small ulcer over a lymphoid follicle (aphthoid ulcer) to a deep fissuring ulcer to transmural scarring and chronic inflammation. One third of cases have granulomas, and extracolonic sites such as lymph nodes, liver, and joints may also have granulomas. The transmural inflammation leads to the development of fistulas between loops of bowel and other structures. Inflammation is typically segmental with uninvolved bowel separating areas of involved bowel.

The etiology is unknown, though infectious and immunologic mechanisms have been proposed. There is a bimodal incidence and an increased incidence in women and persons of Caucasian race. The clinical manifestations are variable and can include diarrhea, fever, and pain, as well as extraintestinal manifestations of arthritis, uveitis, erythema nodosum, and ankylosing spondylitis.

1. **Crohn's disease, gross.**
2. **Crohn's disease, microscopic.**
3. **Crohn's disease, microscopic.**
4. **Crohn's disease, microscopic.**

Comparison of Ulcerative Colitis and Crohn's Disease

Feature	Ulcerative Colitis	Crohn's Disease
Distribution	Diffuse, distal predominance	Segmental or diffuse, often proximal predominance
Rectum	Always involved	Often spared
Microscopic Distribution	Diffuse	Often focal
Depth of Inflammation	Mucosal	Transmural
Sinus Tracts and Fistulae	Absent	Often present
Strictures	Absent	Often present
Granulomas	Absent	Often present

Other Causes for Inflammatory Bowel Disease

Infectious causes for IBD generally have a more acute onset and run a shorter course than idiopathic forms of IBD. Bacterial organisms that can produce IBD include Shigella, Salmonella, Campylobacter, and some E. coli. Bacteria are a common cause of acute self-limited colitis - active IBD without chronic changes. Viral etiologies include Norwalk-like virus and rotavirus (small bowel) as well as cytomegalovirus (CMV) and herpes simplex virus in immunocompromised persons. Other causes include chlamydial infection and amebiasis.

Antibiotic associated IBD can occur from therapy with broad spectrum antibiotics leading to overgrowth of Clostridium difficile or other organisms such as Candida. This produces a toxin which causes mucosal damage (pseudomembranous colitis). An IBD can also occur with ischemia. A less common disease is collagenous colitis, which is seen as a chronic watery diarrhea in middle-aged women and is characterized by lymphocytic inflammation of surface epithelium and thickened sub-epithelial collagen table.

1. **Pseudomembranous colitis, gross.**
2. **Pseudomembranous colitis, microscopic.**
3. **Amebiasis, microscopic.**