Crohn's Disease Characteristics

Crohn’s disease and ulcerative colitis are inflammatory bowel diseases characterized by chronic inflammation of a portion of the GI tract resulting from inappropriate mucosal immune activation. Unlike ulcerative colitis, Crohn’s disease can affect any area of the GI tract but the most common sites of involvement are the terminal ileum and colon. The rectum is characteristically spared. Crohn’s disease is also characterized by transmural granulomatous inflammation with the presence of multiple, separate, sharply delineated regions of disease resulting in skip lesions. Sparing of interspersed mucosa results in a coarsely textured cobblestone appearance. Fissures commonly develop between mucosal folds and can extend deeply to become fistula tracts or lead to perforation. In cases of extensive transmural disease, the mesenteric fat can be involved and extend around the serosal surface, commonly called creeping fat. On histologic examination, multiple large lymphoid aggregates can be found in the mucosa and submucosa. Perianal disease is frequent including fissures, fistulas, and abscesses and can cause significant morbidity. On barium swallow, string sign can be indicative of Crohn’s.

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Terminal Ileum and Colon
Terminal Ileum and Colon
Unlike ulcerative colitis, Crohn's disease can affect any area of the GI tract, but the most common sites of involvement are the terminal ileum and colon.

Rectal Sparing
Spared Rectum-rectangle
The rectum is characteristically spared in Crohn's disease, as opposed to ulcerative colitis, in which the rectum is always involved.

Transmural Inflammation
Flames engulfing the Entire Thickness of canyon walls
Crohn's disease is characterized by transmural inflammation involving the entire thickness of the bowel wall, as opposed to inflammation of only the mucosal and submucosal layers seen in ulcerative colitis. Chronic transmural inflammation can lead to fissures, fistulas, or strictures.

Granulomas
Granny-llama
50% of individuals with Crohn's disease demonstrate noncaseating granulomas, which are aggregates of giant cell macrophage derivatives. Findings of granulomas are highly specific for Crohn's disease.

Skip Lesions
Skipping granny
Crohn's disease is characterized by the presence of multiple, separate, sharply delineated regions of disease, resulting in skip lesions. This is different from the continuous stepwise inflammation seen in ulcerative colitis.

Cobblestone Mucosa
Cobblestone road
Sparing of regions of mucosa in between the patchy distribution of affected areas results in a coarsely textured cobblestone appearance, which is characteristic of Crohn's disease.

Fissures
F-shaped Fissures
Chronic transmural inflammation can cause development of fissures in the bowel wall, which can lead to fistulas and abscesses.

Fistulas
Fist-shaped-tunnel
Chronic transmural inflammation can cause development of fistulas between the bowel and other organs including enteroenteric, enterovaginal, enterocutaneous, and enterovesicle fistulas.

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Perianal Disease

Pear-with-hole

Perianal disease is common in Crohn's disease. The major perianal complications include fissures, fistulas, abscesses, and stenosis and can cause anal pain, purulent discharge, bleeding, and incontinence.

Creeping Fat

Creepy fat-guy

Hyperplasia of the subserosal and mesenteric adipose tissue can lead to the appearance of creeping fat, which is highly characteristic of the serosal surface.

Lymphoid Aggregates

Lymph-limes

On histologic examination, Crohn's disease is characterized by transmural inflammation with multiple large lymphoid aggregates in the mucosa and submucosa.

String Sign on Barium Swallow

Stringed Berries with Bear Swallow

String sign is a medical term for a radiographic finding in which a patient is given barium to swallow and X rays are subsequently taken of the patient's stomach and intestines. String sign signifies severe narrowing of a loop of bowel, causing a thin stripe of contrast. Differential diagnosis for string sign includes Crohn's disease, hypertrophic pyloric stenosis, and colon cancer.

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