

Gastrointestinal tract pathology 2022-2023

INFLAMMATORY BOWEL DISEASES (Idiopathic)

1. CROHN DISEASE
2. ULCERATIVE COLITIS

COMMON FEATURES

- ✚ Idiopathic
- ✚ Colonic inflammation
- ✚ Similar treatment
- ✚ Both have systemic, extraintestinal inflammatory manifestations
- ✚ Both have cancer risk

Crohn disease (Regional ileitis)

- Crohn disease may affect any part of GI tract, but the most commonly sites involved are the terminal ileum, ileocecal valve, and cecum.
- Clinically patients presented with diarrhea and malabsorption
- It is a systemic inflammatory disease with predominant gastrointestinal involvement
- Extra intestinal manifestations include uveitis, migratory polyarthritis, sacroiliitis, ankylosing spondylitis, and erythema nodosum.

Morphological features

Gross features

- Skipped lesions presence of multiple, separate, sharp demarcation of diseased bowel segment from adjacent un-involved bowel wall.
- The mucosa is edematous and hyperemic and shows, linear longitudinal ulcers causing fissures
- Fissure may extend deeply to become fistula tracts or sites of perforation.
- Cobblestone appearance (the combination of linear ulceration and mucosal remnants)
- **In advanced stage**, fibrosis of the wall occurs, this cause thickened wall + narrowed lumen leading to stricture formation.

Microscopical features

- Crypt architectural distortion
- **Transmural inflammation** (affects all layers of the wall) characterized by Infiltration of lymphocytes, plasma cells and macrophages.
- Crypt abscesses: Clusters of neutrophils within a crypt.
- **Non-caseating epithelioid granuloma**; a hallmark of crohn disease (found in 35% of cases, in all tissue layers).

Complications of Crohn disease (CD)

- Intestinal obstruction (due to extensive fibrosis and narrowing of the lumen).
- Perforation of deep fissures → peritonitis.
- Sinus to skin or fistulas to colon, bladder.
- Carcinoma (less than in UC)

Ulcerative colitis (UC)

- An ulcero- inflammatory disease affecting the colon
- UC involves the rectum and extends proximally in a continuous fashion to involve part or the entire colon.
- Limited to the mucosa and sub mucosa
- Extra-intestinal manifestations of ulcerative colitis overlap with those of Crohn disease and include: migratory polyarthritis, sacroiliitis, ankylosing spondylitis, uveitis, skin lesions, pericholangitis, and primary sclerosing cholangitis.
- Clinically patients presented with diarrhea and bleeding per rectum.

Pathological features (Morphological)

Grossly:

- Ulcerative colitis is diffuse lesion.
- The involved colonic mucosa may be slightly erythematous and granular or have extensive, broad-based ulcers
- Pseudopolyp formation due to regenerating mucosal island between areas of ulceration.
- Serosa normal.
- **Toxic megacolon** - rare complication - prominent dilatation and thinning of the colonic wall.

Microscopical features

- ✓ Diffuse lymphoplasmacytic inflammation in the lamina propria.
- ✓ Cryptitis and crypt abscess (collections of neutrophils with in the crypts).
- ✓ Mucosal ulceration extending into the sub mucosa.
- ✓ Granulomas are not present in UC.

Complications:

- Toxic megacolon → perforation → peritonitis → fatal.
- Massive hemorrhage (rectal bleeding).
- Colorectal carcinoma.

• CROHN (CD)	• ULCERATIVE (UC)
Any part of GIT and mainly Terminal ileum	Always in rectum and part of entire colon.
Transmural inflammation.	Mucosal and submucosal.
Deep ulcer	Superficial ulceration
Bowel wall: thick	Bowel wall: thin
Skip lesions present	Skip lesions absent
“Crypt” abscesses not common	“Crypt” abscesses common
Cobblestoning	Pseudopolyp
Granulomas common	No granulomas
Fistulae and stenosis complication common	Fistulae and stenosis rare
Less risk of malignancy	More risk
Malabsorption	No malabsorption

Intestinal polyps and neoplastic disease

- Is a mass that protrudes into the lumen of GIT
- Either with stalks (pedunculated) or without stalk (Sessile)

Two types:

A- Non – neoplastic polyps

1- Hamartomatous polyp (rare).

a- Juvenile: commonly found in children younger than age 5 and usually solitary, characterized by cystically dilated glands filled with mucin and inflammatory debris.

b- Peutz Jeghers polyp: Large polyp with arborizing (Christmas tree-like) projections.

2- Inflammatory polyp: form as a result of chronic cycles of injury and healing. (Seen in large bowel in inflammatory diseases as CD or UC)

- **Solitary rectal ulcer syndrome** is another example, Patients present with the clinical triad of rectal bleeding, mucus discharge, and an inflammatory lesion of the anterior rectal wall. The underlying cause is impaired relaxation of the anorectal sphincter, creating a sharp angle at the anterior rectal shelf. This leads to recurrent abrasion and ulceration of the overlying rectal mucosa. Chronic cycle of injury and healing produce a polypoid mass.

3- Hyperplastic polyps: are most commonly found in the left colon and typically are less than 5 mm in diameter.

Histologically: serrated surface architecture with a sawtooth appearance.

B- Neoplastic polyps (Adenomas)

Adenomas are precursors of carcinoma.

On the basis of epithelial architecture Adenomas are classified into:

1- Tubular adenomas

2- villous adenomas

3- Tubulo villous adenomas or mixed

Tubular adenomas:

Single or multiple, tend to be small pedunculated polyps

- **Histologically:**
- The stalk is covered by normal colonic mucosa
- The head is composed of neoplastic epithelium, forming branching rounded or tubular glands.

Villous adenomas

- Often large and sessile (broad base rather than a stalk).
- Composed of numerous, finger-like projections of epithelium.

Tubulovillous adenoma

- Features of both adenomas (tubular and villous lesions).

✚ **Sessile serrated adenomas (Sessile serrated polyps):** are most commonly found in the right colon

Histologically: serrated architecture throughout the full length of the glands, including the crypt base, associated with crypt dilation and lateral growth.

➤ The risk of malignant transformation is correlated with:

- **Size:** the larger the size, the greater the risk.
- **Histological type:** villous adenoma has high risk.
- **Dysplasia :** sever dysplasia causes ↑ the risk.
- **Number :** increase in number ↑ the risk.