

# Gastrointestinal tract pathology 2023-2024

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## Learning objectives:

- Commonest gastric tumor.
- Morphological features of gastric carcinoma.
- Definition and causes of malabsorption syndrome.
- Difference between Celiac Disease and Environmental Enteric Dysfunction.

## GASTRIC TUMORS

### + **Benign:**

- POLYPS ( Hyperplastic 75%, fundic15% and adenomatous10%)
- LEIOMYOMAS
- LIPOMAS

### + **Malignant**

- ADENOCarcinoma (90-95%)
- LYMPHOMA (mucosa associated lymphoid tissue tumor or MALTomas)

### + **Potentially malignant**

- G.I.S.T. (Gastro-Intestinal Stromal Tumor)
- CARCINOID (Neuroendocrine tumor)

**Polyp:** is any nodule or mass that projects above the level of the surrounding mucosa.

**Hyperplastic & Inflammatory polyps:** Usually arising in a background of chronic gastritis that initiates the injury and reactive hyperplasia that causes polyp growth.

- ✓ The frequency of dysplasia in this polyp correlates with size (polyps larger than 1.5 cm in size ---- ↑↑ risk).

### Fundic gland polyps:

- ✓ Common among people who regularly take proton pump inhibitors to reduce stomach acid.

**Adenomatous polyps:** are true benign neoplasms and may turn into carcinomas, particularly if exhibit dysplasia on biopsy.

## **Gastric adenocarcinoma**

- Insidious (slowly developing)
- Usually discovered in advanced stages
- Occurs between the ages of 50-60, Men>Women

## Risk factors for gastric carcinoma

### 1. Environmental

- High intake of alcohol and smoking
- Nitrate or nitrite in the food

### 2. EBV is associated with 10% of adenocarcinoma

### 3. Pre malignant conditions (Host factor)

- Gastric adenoma
- H.pylori chronic gastritis

### 4. Genetic factors

- Blood group A have high incidence for gastric carcinoma

## Gross features

1. Exophytic (large fungating mass).
2. Ulcerative the border of the ulcer is nodular and beaded, irregular not demarcated from the surrounding tissue.
3. Diffuse infiltrating the wall, causing marked thickening and loss of elasticity (leather bottle or linitis plastica).

## Histological features

According to the Laurens classification:

### 1. Intestinal type:

- Tubular or Glandular structure
- *H. Pylori* chronic gastritis

### 2. Diffuse type:

- Signet ring cell appearance (the tumor cells accumulate intracellular mucin pushing the nucleus to the periphery)
- No glandular formation

## Spread of gastric Cancer:

1. Local spread to adjacent structures such as pancreas and duodenum.
2. Lymphatics to regional L.N or distant L.N (supra clavicular L.N).
3. Intra peritoneal spread and implanted in both ovaries (Krukenburg tumors).
4. Haematogenous spread to liver and lung

## Gastric lymphoma:

- 5% of all gastric malignancies
- Better prognosis
- Helicobacter pylori has been associated with the development of extranodal marginal zone B cell lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma or MALTomas).

## **SMALL AND LARGE INTESTINE**

### **Malabsorption syndrome**

Failure of absorption of nutrient fats, proteins, carbohydrates, vitamins & minerals.

**Clinically:** Chronic malabsorption can be accompanied by ; weight loss, anorexia, abdominal distention, and muscle wasting.

A hallmark of malabsorption is **steatorrhea** (excessive fecal fat; bulky, frothy, greasy and yellow or clay colored stools).

Malabsorption results from disturbance in at least one of the following:

- 1) **Intraluminal digestion** of proteins, carbohydrates, and fats in to absorbable form (e.g., Chronic pancreatitis/insufficiency)
- 2) **Terminal digestion:** Hydrolysis of carbohydrates and peptides by disaccharidases and peptidases in the brush border of the small bowel (e.g.,disaccharidase deficiency and brush border damage by bacteria).
- 3) **Transepithelial transport**, in which nutrients, fluid, and electrolytes are transported and processed within the small intestinal epithelium (e.g., Abetalipoproteinemia).
- 4) **Other**
  - Reduced mucosal surface area: Celiac, Crohn
  - Lymphatic obstruction: lymphoma, TB
  - Infection; environmental (tropical) enteropathy , whipple disease
  - Iatrogenic

### **Villous atrophy**

It is the most important pathological changes in malabsorption syndrome and can be classified into :

1. Partial villous atrophy
2. Subtotal villous atrophy

#### **Partial villous atrophy**

- The villi are shorter and broader than normal.

#### **Subtotal villous atrophy**

- It is more sever than partial villous atrophy
- There is sever shortening of the villi .
- The mucosa looks flat.

## **CELIAC DISEASE**

- Also called **celiac sprue** or **gluten-sensitive enteropathy**

- It is an immune-mediated enteropathy triggered by the ingestion of gluten-containing cereals, such as wheat, rye, or barley
- Relieved by gluten withdrawal
- Risk of malignancy –lymphoma.
- **Morphology:**
  - ✓ Biopsy specimens from the **second portion of the duodenum** or **proximal jejunum**
  - ✓ Increased numbers of **intraepithelial T lymphocytes**, **crypt hyperplasia**, and **villous atrophy**.

### **Environmental Enteric Dysfunction**

- Also called **environmental enteropathy** , **tropical enteropathy** or **tropical sprue**.
- Occur in people living or visiting the tropical areas (sub- Saharan Africa such as Gambia, india, Southeast Asia & northern Australia)
- NOT related to gluten
- The exact cause is **unknown**
- Response to antibiotics
- Small intestinal biopsy shows partial villous atrophy and inflammation of the intestinal mucosa.

THANK YOU