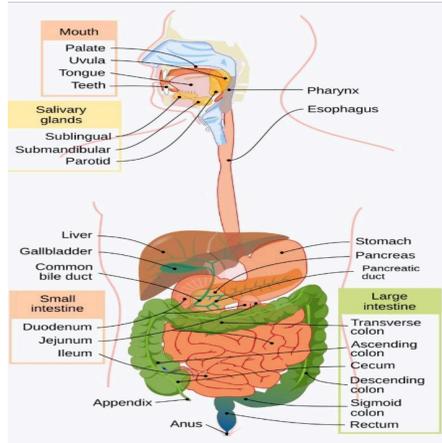# GIT

Esophagus

Hiatal hernia

- Abnormal protrusion of the upper part of the stomach through the diaphragm's hiatus

* Types:
1. Sliding hernia
2. Paraoesophageal hernia

* Causes:
1. Congenital anatomical defect
2. Increased intraabdominal pressure (as in pregnancy, obesity, chronic coughing)
3. Age-related changes in the diaphragm's muscle tone.

* Clinically:
Heart burn, Dysphagia

Infectious esophagitis

* Infection caused by viruses, Fungi

Candida is MC

Barret esophagus

· **Is a complication of chronic GERD.**

* Morphology: characterized by metaplastic change in esophageal lining in which the normal squamous epithelium change into columnar (intestinal) epithelium.

· **It is associated with an increased risk of cancer (adenocarcinoma)**

Reflux esophagitis

➢ Definition: Reflux of gastric contents into the lower esophagus.

➢ Causes: Inappropriate relaxation of the LES, following abrupt increases in intra-abdominal pressure, e. g. , after coughing, straining, or bending/ Other conditions that are associated with GERD include alcohol and tobacco use, obesity, central nervous system depressants, pregnancy, hiatal hernia.

➢ Clinically: heartburn, dysphagia, and regurgitation of sour-tasting gastric contents, most often postprandially
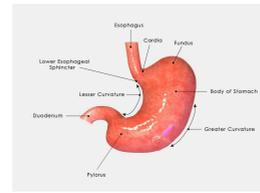
Tumors

Adenocarcinoma
➢ Site: almost all cases occur in the lower third of the esophagus and esophagogastric junction

Squamous cell carcinoma:
➢ More common than adenocarcinoma worldwide.
➢ Site: half of squamous cell carcinomas occur in the middle third of the esophagus
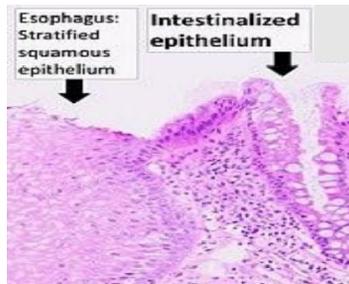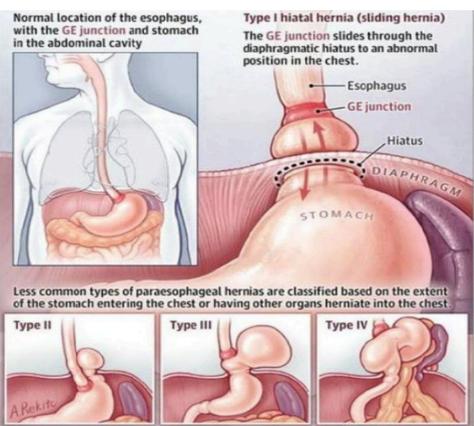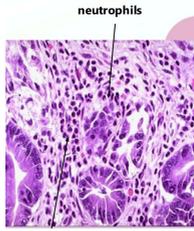
Stomach

Gastritis

neutrophils

➤ Characterized by: presence of neutrophils in lamina propria and gastric glands (on gastric biopsy)

❖ **Chronic gastritis associated with H.Pylori microorganism:**
➤ It's a Gram negative bacteria producing (Urease, Adhesins, and Toxins), destroying the mucosa.

➤ Located in antrum.

➤ Morphology:
Lymphoid aggregates with or without germinal centers and abundant plasma cells within the superficial lamina propria/ and Intraepithelial neutrophils.

➤ Investigations:
1) histologic identification of the organism,
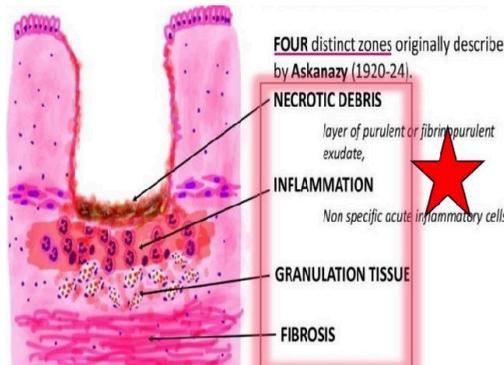2) the urea breath test, which is positive due to ammonia produced by the bacterial urease.

Peptic ulcer disease

➤ Site: Most common in Duodenum (first part)/ then Stomach (lesser curvature near the junction between body and antrum)

➤ Risk factors: almost always associated with H. pylori infection.

➤ Symptoms:
1) Epigastric burning
2) Pain worse at night, within 1–3 hours after meals
3) Pain may decrease with food / alkali
4) Perforation associated with pain in back, left upper quadrant, chest

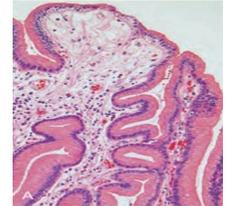FOUR distinct zones originally described by **Askanazy** (1920-24).
NECROTIC DEBRIS layer of purulent or fibrinopurulent exudate,
INFLAMMATION Non specific acute inflammatory cells
GRANULATION TISSUE
FIBROSIS

Gastric Polyps

❖ **The most common types:**
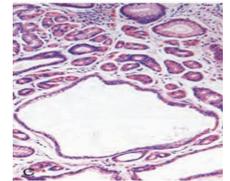
1) **Inflammatory and hyperplastic polyps:**
➤ Up to 75% of all gastric polyps

2) **fundic gland polyps:**
➤ germline mutations in the APC gene

➤ Associated with increased use of proton pump inhibitors

3) **Gastric adenoma:**
➤ develop in a background of chronic gastritis with atrophy and intestinal metaplasia.

➤ The risk of adenocarcinoma within gastric adenomas correlates with size and is particularly elevated in lesions greater than 2 cm in diameter.

➤ Morphology: All adenomas exhibit dysplasia, which is classified as low– or high– grade. Both grades of dysplasia are characterized by nuclear enlargement, elongation, pseudostratification , and hyperchromasia.

Tumors of stomach

Gastric Adenocarcinoma:
➤ Adenocarcinoma is the most common malignancy of the stomach.

➤ Classification:
➤ 1) Intestinal type: form bulky masses, and composed of neoplastic glands (intestinal like glands)
➤ 2) diffuse type: infiltrates and thickens the gastric wall, typically composed of signet–ring cells

these tumors are often discovered at advanced stages, when symptoms such as weight loss, anorexia, early satiety (primarily in diffuse cancers), anemia, and hemorrhage appear
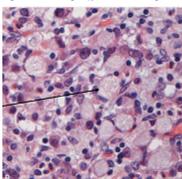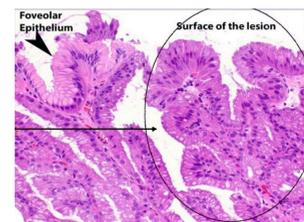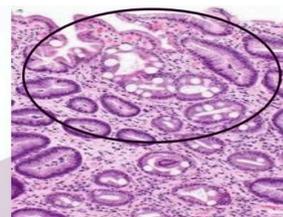

Gastric Lymphoma:
➤ The most common site of extranodal lymohoma is the Gi tract particularly the stomach.
➤ The most common type is Extranodal marginal zone B–cell lymphomas (referred to as lymphomas of MALT, or MALToma's)

Intestinal metaplasia

Foveolar Epithelium
Surface of the lesion
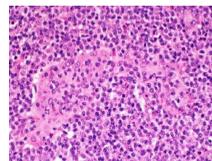
Intestine

Infectious diseases

Cholera

➢ It is primarily transmitted by drinking contaminated water.

➢ The rate of diarrhea may reach 1 L per hour, leading to dehydration, hypotension.

Campylobacter Enterocolitis

– is an important cause of traveler's diarrhea.

➢ Infections are most often associated with ingestion of improperly cooked chicken, unpasteurized milk and contaminated water

➢ Watery diarrhea is the primary symptom

Salmonella

➢ Salmonella is transmitted via contaminated food, particularly raw or undercooked meat, poultry, eggs, and milk

➢ Antibiotic therapy is not generally recommended

Viral Gastroenteritis

Rotavirus outbreaks in hospitals and daycare centers are common.

Other diseases of intestine

1. Irritable Bowel Syndrome

➢ the endoscopic and microscopic evaluations are normal in IBS patients.

➢ IBS is currently divided into diarrhea-predominant, constipation-predominant, and mixed subtypes.

➢ there is a significant female predominance

➢ IBS is presently diagnosed using clinical criteria that require the occurrence of abdominal pain or discomfort at least 3 days per month over 3 months with improvement following defecation and a change in stool frequency or form.

2. Celiac disease

➢ An immune-mediated disorder triggered by the ingestion of gluten-containing foods such as wheat, rye, or barley in genetically predisposed individuals.

➢ Biopsy specimens from the second portion of the duodenum

➢ The histopathology is characterized by increased numbers of intraepithelial CD_{8+} T lymphocytes (intraepithelial lymphocytosis), crypt hyperplasia, and villous atrophy

➢ The only treatment currently available for celiac disease is a gluten-free diet.

IRRITABLE BOWEL SYNDROME (IBS)

Symptoms
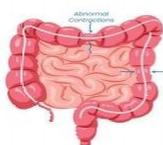
Abdominal Pain   Diarrhea   Cramping

Mucus In Poop   Constipation   Bloating And Gas

Abnormal Contractions

Abnormal Contractions

LARGE INTESTINE

3 Inflamatory Bowel disease types :

1) Ulcerative colitis:
➢ Site of inflammation: It most commonly start from the rectum involving the entire colon (pancolitis). May extend to ilium causing Backwash ileitis.

➢ Layers affected: the superficial layers (mucosa and submucosa)

➢ Morphology grossly: Presence of regenerating mucosa which project in the lumen called Psuedopolyps.

➢ Morphology microscopically: Ulceration, cryptitis and crypt abscess , Absence of granuloma and fissuring
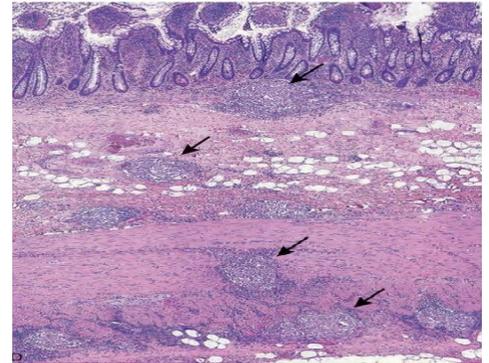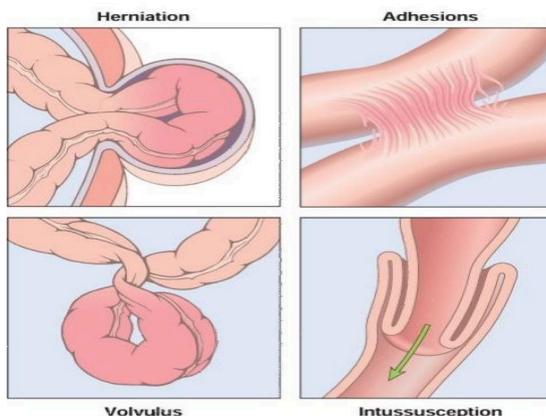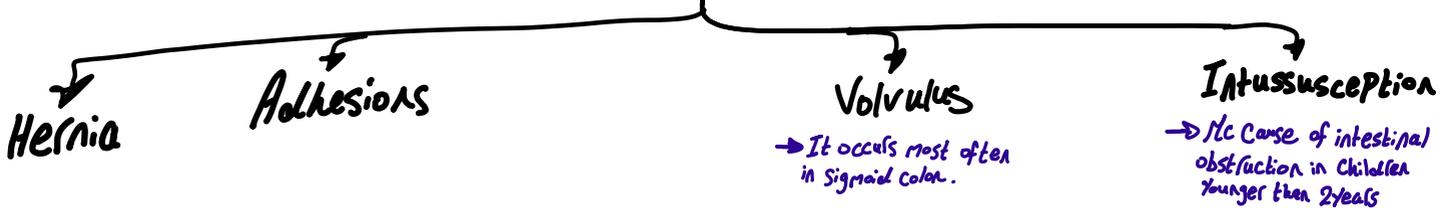
➢ Serology: p–ANCA antibody

pseudopolyps

2) Crohn's disease:
➢ Site of inflammation: can affect any part of the GIT from the esophagus to the large intestine.

➢ Layers affected: full thickness (transmural inflammation)

➢ Patchy involvement of the GIT known as "Skip lesions"

➢ Morphology microscopically: non–caseating granuloma

➢ Serology: ASCA antibody

granulomas

4 Intestinal obstruction Causes:

Hernia

Adhesions

Volvulus
→ It occurs most often in Sigmoid colon.

Intussusception
→ Mc Cause of intestinal obstruction in Children younger than 2years

Herniation   Adhesions   Volvulus   Intussusception
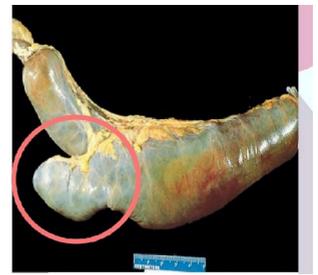
5. Mickel Diverticulum:

The most common true diverticulum, and the most common congenital anomaly of the GI tract, is Meckel diverticulumThe most common true diverticulum, and the most common congenital anomaly of the GI tract, is Meckel diverticulum

6. Hirschsprung disease

➤ Pathogenesis: distal intestinal segment that lacks both the Meissner submucosal plexus and the Auerbach myenteric plexus, termed aganglionosis. Result in absence of coordinated peristaltic contractions, and functional obstruction occurs, resulting in dilation proximal to the affected segment.
➤ Diagnosed by absent of ganglion cells on biopsy.
➤ Clinically: typically presents with a failure to pass meconium in the immediate postnatal period.
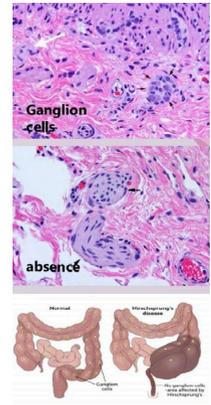
7. Adenocarcinoma of intestine :

Adenocarcinoma of the colon is the most common malignancy of the GI tract and is a major cause of morbidity and mortality worldwide

➤ The dietary factors most closely associated with increased risk of colorectal cancer are low intake of unabsorbable vegetable fiber and high intake of refined carbohydrates and fat.

➤ Clinically: Unfortunately, colorectal cancers develop insidiously and may go undetected for long periods.

➤ The two most important prognostic factors are depth of invasion and the presence or absence of lymph node metastases.

Appendix :

➤ The appendix is a normal true diverticulum of the cecum that is prone to acute and chronic inflammation

➤ Acute appendicitis:
➤ Microscopically: neutrophilic infiltration of the muscularis propria

➤ Clinically: Typically, early acute appendicitis produces periumbilical pain that ultimately localizes to the right lower quadrant, followed by nausea, vomiting, low–grade fever, and a mildly elevated peripheral white cell count.

Gallbladder :

Gallstones (Cholelithiasis):

➤ There are two general classes of gallstones:
➤ 1) Cholesterol stones, containing more than 50% of crystalline cholesterol monohydrate. the liver excretes more cholesterol than bile salts and phospholipids can dissolve. So Excess cholesterol forms crystals, which clump together and harden into stones (appears yellow)
➤ 2) Pigment stones composed predominantly of bilirubin calcium salt.
➤ Form from too much bilirubin (from red blood cell breakdown) or bacterial infection,.

Table 18.11 Risk Factors for Gallstones

Cholesterol Stones
Demography: northern Europeans, North and South Americans, Native Americans, Mexican Americans
Advancing age
Female sex hormones
Female gender
Oral contraceptives
Pregnancy
Obesity and metabolic syndrome
Rapid weight reduction
Gallbladder stasis
Inborn disorders of bile acid metabolism
Hyperlipidemia syndromes
Pigment Stones
Demography: Asians more than Westerners, rural more than urban
Chronic hemolytic anemias
Biliary infection
Gastrointestinal disorders: ileal disease (e.g., Crohn disease), ileal resection or bypass, cystic fibrosis with pancreatic insufficiency