Esophagus

- OBSTRUCTIVE DISEASES
  - Mechanical
    - Stenosis "Narrowing"
      - Due to inflammation and scarring — Caused by //
        - Chronic gastroesophageal reflux
        - Irradiation
        - Caustic injury
      - Can be
        - Acquired, predominant
        - Congenital
      - Clinical presentation
        - Progressive dysphagia
        - Difficulty eating solids — Progresses to problems with liquids
      - Can be associated with tumors
      - Fibrous thickening of the submucosa & atrophy of the muscularis propria
    - Absence, or agenesis, of the esophagus is extremely rare
    - Atresia
      - In which a thin, noncanalized cord replaces a segment of esophagus
      - Clinical presentation — Shortly after birth: regurgitation during feeding
      - Needs prompt surgical correction (rejoin).
      - Complications if w/ fistula "to know what is fistula refer to slide 21"
        - Aspiration
        - Sufficocation
        - Pnemonia
        - Severe fluid and electrolyte imbalances
  - Functional
    - Dysfunction in peristalsis
    - Achalasia
      - Characterized by Triad of
        - Incomplete LES (Lower esphagus sphincter) relaxation
        - Increased LES tone
        - Esophageal aperistalsis
      - Caused by Degenerative changes in neural innervation
      - Can be
        - Primary — Caused by Diabetes
        - Secondary — Caused by Chagas diseases
      - Clinical presentation
        - Difficulty in swallowing
        - Regurgitation
        - Ssometimes chest pain
      - Diagnosis by radiology
- Vascular diseases
  - Esophageal Varices
    - It's the development of collateral channel that enlarge the subepithelial and submucosal venous plexi within the distal esophagus lower 1/3
    - Caused by Portal hypertension worldwidely, due to alcholic liver disease
    - Hepatic schistosomiasis is the second most common cause of varices
    - Varices often are asymptomatic, but their rupture can lead to massive hematemesis and death
    - Diagnosed by
      - Angiography
      - Endoscopy
  - Laceration — Linear and longitudinally oriented
    - The most common esophageal lacerations are Mallory- Weiss tears
      - Which are often associated with severe retching or vomiting — Then blood vomiting
      - Due to improper relaxation of LES
      - Superficial since it's in the mucousal layer
    - Boerhaave syndrome
      - Characterized by transmural esophageal tears and mediastinitis — transnural means through the mucous, submucous and serosa
      - Massive bleeding
- Inflammation
  - Esophagitis
    - Chemical
      - Pill-induced esophagitis
      - Iatrogenic esophageal injury — May be caused by cytotoxic chemotherapy, radiation therapy, or graft-versus-host disease
    - Infections "same for the oral one, so memorize for both oral and esophageal infections"
      - Candidiasis (Fungal)
        - Densely matted fungal hyphae and inflammatory cells covering the esophageal mucosa
        - Whitish patches filled with whitish exudate
      - Herpes virus
        - Punched-out ulcers
        - Histopathological features — ***Nuclear*** viral inclusions within a rim of degenerating ***epithelial cells*** at the ulcer edge
      - Cytomegalo virus
        - Shallower ulcerations
        - ***Nuclear*** and ***cytoplasmic*** inclusions within capillary ***endothelium*** and ***stromal cells***
  - Eosinophilic Esophagitis
    - Chronic immune mediated disorder, Hypersestivity reaction
    - Treatment
      - Avoiding causative agent "Dietry resrections"
      - Topical or systemic corticosteroids
      - ***Doesn't respond to PPIs***
    - Endoscopy — Rings in the upper and mid esophagus
    - Microscopy — **Numerous eosinophils** w/n epithelium Far from the GEJ
  - GERD
    - General characterstics
      - Most frequent cause of esophagitis
      - **Most common complaint by patients**
      - Squamous epithelium is sensitive to acids
      - Protective forces: mucin and bicarbonate, high LES Tone
    - Pathogenesis
      - Decreased lower esophageal sphincter tone by
        - Alochol
        - Tobacco
        - CNS depressants
      - Increased abdominal pressure by
        - Obesity
        - Pregnancy
        - Delayed gastric emptying
        - Increased gastric volume
        - Hiatal hernia
          - Is characterized by separation of the diaphragmatic crura and protrusion of the stomach into the thorax through the resulting gap
          - Same presentation of GERD, but the patient does'nt know about and it's diagnosed through X-ray
      - Idiopathic
    - Upper endoscopy — Erthymea
      - Nottypical for any infection
      - It's ditrbution specificly around LES
    - Microscopic — Triad
      - Eosinophils infiltration "Less than Eosinophilic Esophagitis" — Followed by neutrophils (more severe)
      - Basal zone hyperplasia
      - Elongation of lamina propria papillae
    - Clinical presentation
      - Most common over 40 years.
      - May occur in infants and children
      - Heartburn , dysphagia
      - Regurgitation of sour-tasting gastric contents
      - Rarely: Severe chest pain, mistaken for heart disease
    - Treated by — PPIs
    - Complications
      - Esophageal ulceration
      - Hematemesis
      - Melena
      - Strictures
      - Barrett esophagus (precursor of Ca.) 10%
        - Complication of chronic GERD that is characterized by — Intestinal or Gastric metaplasia within the esophageal squamous mucosa
        - White males are affected most often and typically present between 40 and 60 years of age
        - Vast majority of esophageal adenocarcinomas are associated with Barrett esophagus — But it's not necessary that every Barret patient will develop esophageal Adenocarcinoma
        - Endoscopy
          - Most important which are — Tongues or patches of red, velvety mucosa — Extending upward from the gastroesophageal junction
          - There are 2 types
            - Short segments — < 3 cm
            - Long segments — > 3 cm
        - Histological
          - It's important to know, where the biopsy been taken from? it shuold be taken from the above of GEJ
          - Goblet cells, which have distinct mucous vacuoles that stain pale blue by H&E and impart the shape of a wine goblet to the remaining cytoplasm
        - Dysplasia
          - Low grade
          - High Grade — Involved all the layer — The basement membrane is intact
          - Intramucosal carcinoma is characterized by invasion of neoplastic epithelial cells into the lamina propria
- Tumors
  - Squamous cell carcinoma (most common worldwide)
    - General characteristics
      - Age above 40
      - Risk factors
        - Tobacco use
        - Obesity
        - Previous radiation therapy to the mediastinum
        - Alochol
        - Caustic esophageal injury
        - Poverty
        - Achalasia
        - Plummer-Vinson syndrome
        - Frequent consumption of very hot beverages
      - Males : Females 4:1
      - In the middle third
    - Mainfestations
      - Pain or difficulty in swallowing solids (Odynophagia) — Then liquids
      - Progressive weight loss
      - Chest pain
      - ***Obstruction***
    - Early lesions appear as small, gray-white plaquelike thickenings. Over months to years they grow into tumor masses that may be polypoid and protrude into and obstruct the lumen. Other tumors are either ulcerated or diffusely infiltrative lesions
  - Adenocarcinoma (on the rise, half of cases)
    - General characteristics
      - Typically arises in a background of Barrett esophagus and long-standing GERD
      - Risk of adenocarcinoma are
        - Tobacco use
        - Obesity
        - Previous radiation therapy
      - Males : Females 7:1
      - Vegetables and fruits reduces Adenocarcinoma
      - Usually occurs in the distal third (Lower third) of the esophagus and may invade the adjacent gastric cardia
      - Exophytic infiltrative mass
    - Mainfestations
      - Pain or difficulty in swallowing solids (Odynophagia) — Then liquids
      - Progressive weight loss
      - Chest pain
      - Vomitting
    - Microscopy: — Forms glands and mucin
    - Esophageal adenocarcinoma usually occurs in the distal third of the esophagus and may invade the adjacent gastric cardia.While early lesions may appear as flat or raised patches in otherwise intact mucosa, tumors may form large exophytic masses, infiltrate diffusely, or ulcerate and invade deeply