Diseases of the esophagus-2

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Diseases that affect the esophagus

- 1. Obstruction: mechanical or functional.
- 2. Vascular diseases: varices.
- 3. Inflammation: esophagitis.
- 4. Tumors.

Reflux Esophagitis
Gastroesophageal reflux disease, GERD

- Reflux of gastric contents into the lower esophagus
- Most frequent cause of esophagitis
- Most common complaint by patients

- Squamous epithelium is sensitive to acids
- Protective forces: mucin and bicarbonate from submucosal glands, high LES tone

Pathogenesis

- **Decreased lower esophageal sphincter tone**

  (alcohol, tobacco, hiatal hernia, CNS depressants)

- **Increase abdominal pressure**

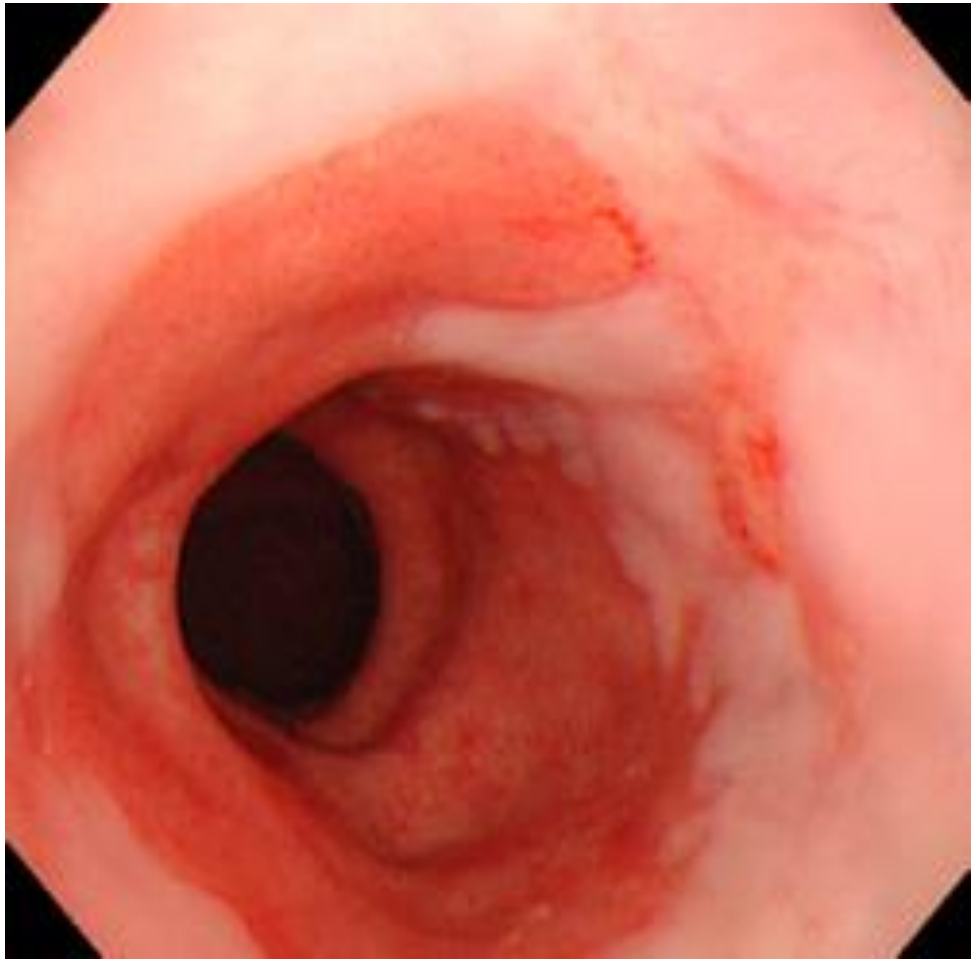
  (obesity,, pregnancy, delayed gastric emptying, and increased gastric volume)

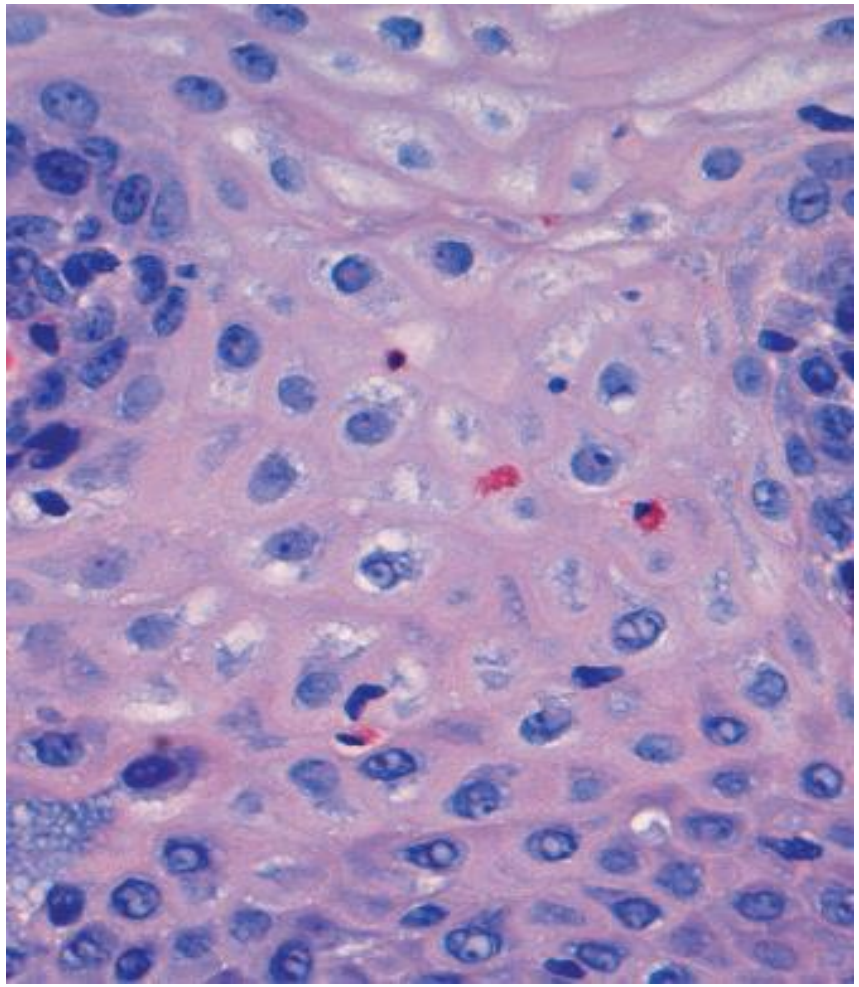
- **Idiopathic!!**

MORPHOLOGY

- **Macroscopy (endoscopy)**
- Depends on severity (Unremarkable, Simple erythema)

- **Microscopic:**
- Eosinophils infiltration (early)
- Neutrophils later (more severe).
- Basal zone hyperplasia
- Elongation of lamina propria papillae





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Clinical Features

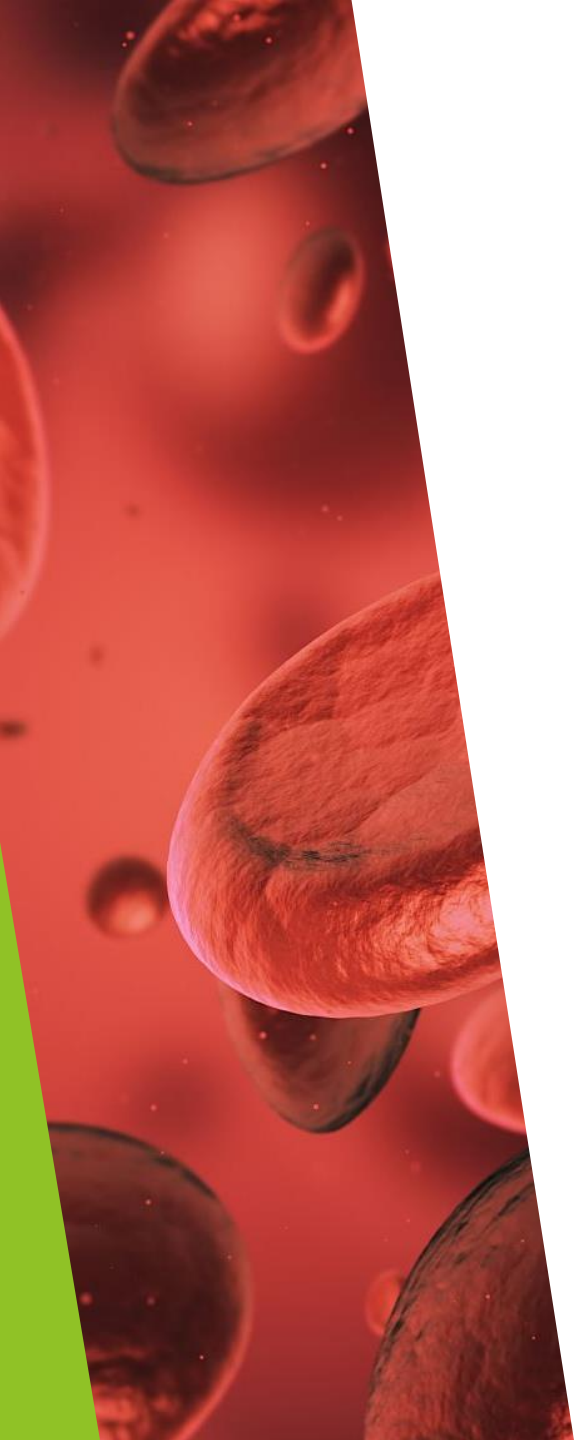
- Most common over 40 years.
- May occur in infants and children
- Heartburn.
- Dysphagia.
- Regurgitation of sour-tasting gastric contents
- Rarely: Severe chest pain, mistaken for heart disease

- Tx: proton pump inhibitors

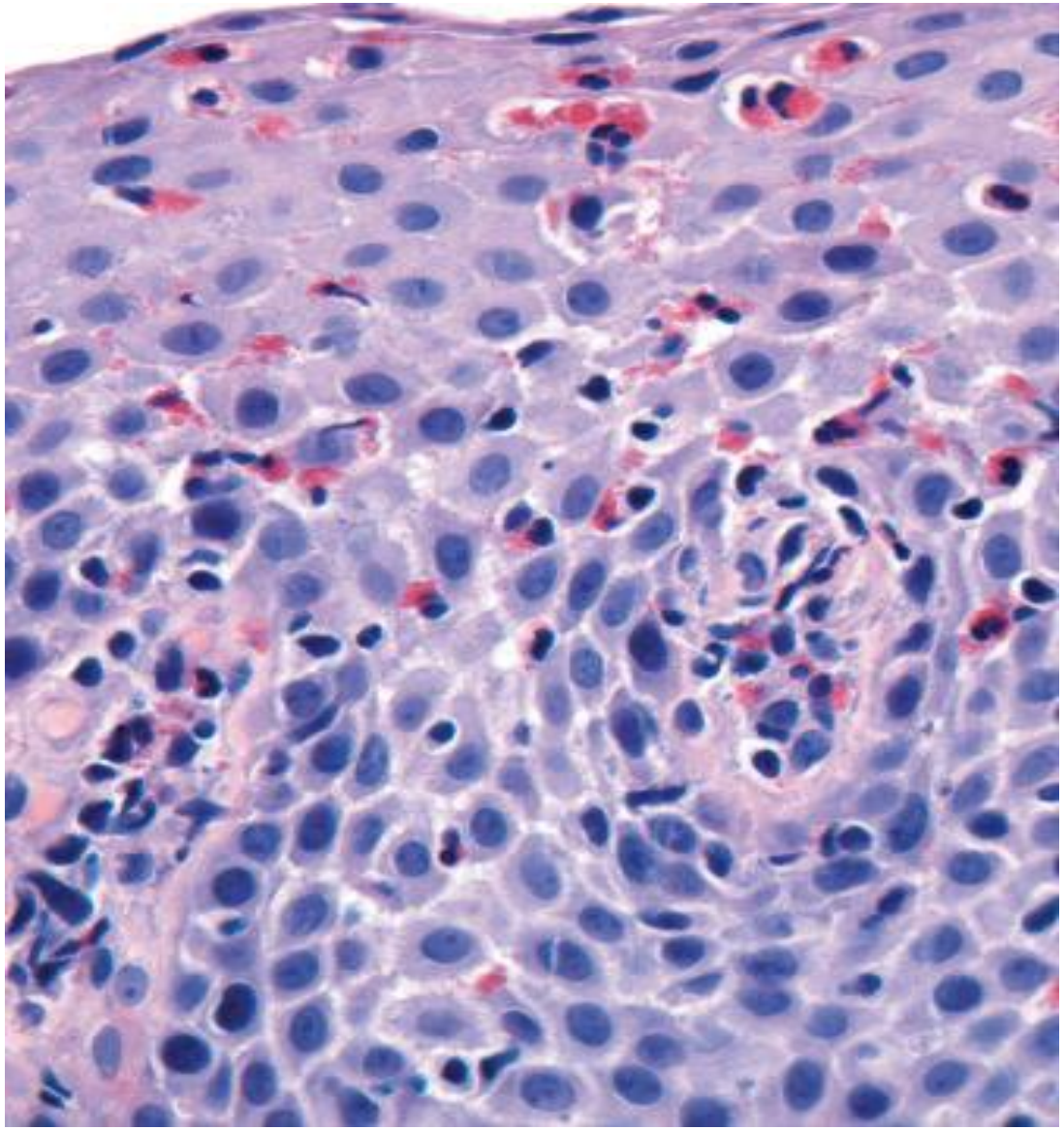
Complications

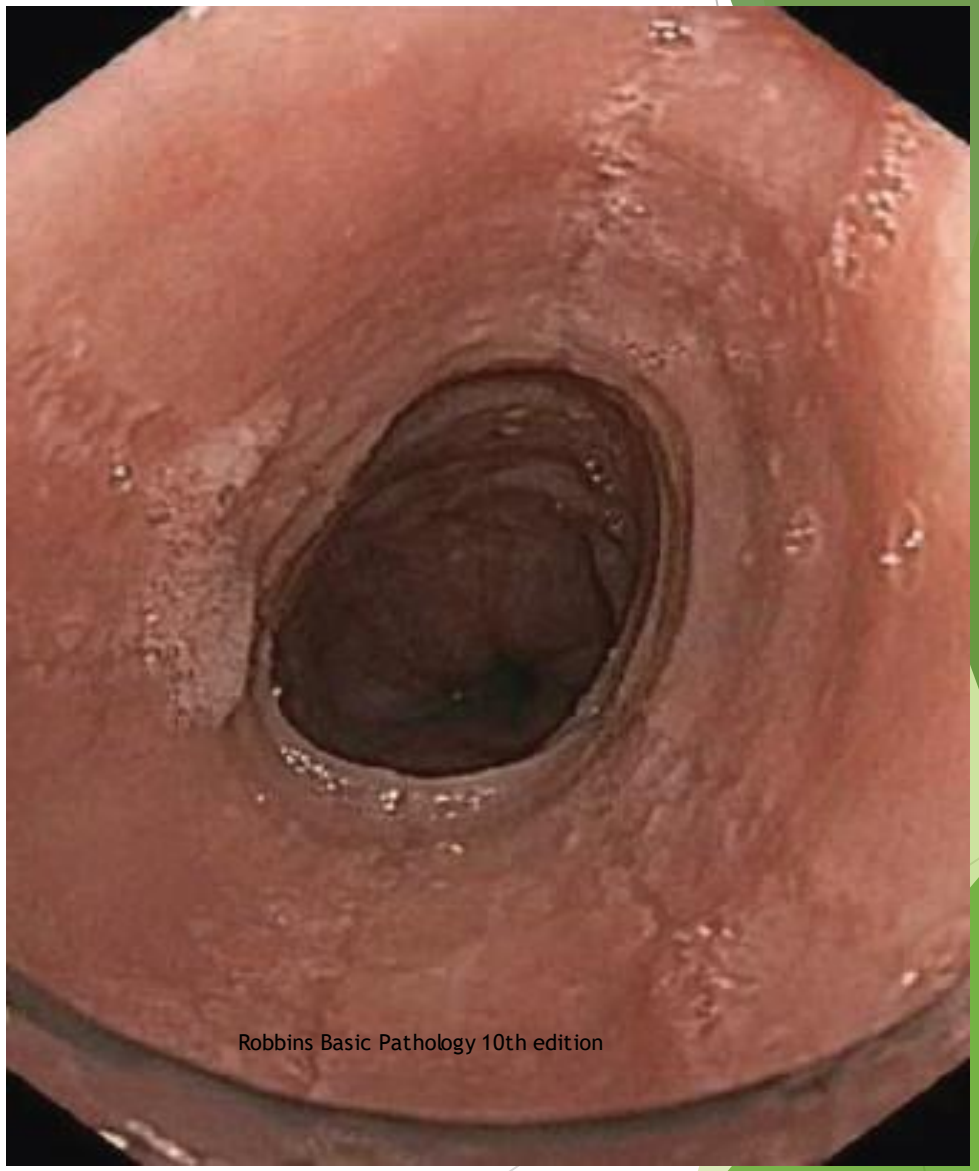
- Esophageal ulceration
- Hematemesis
- Melena
- Strictures
- Barrett esophagus (precursor of Ca.)

Eosinophilic Esophagitis



- Chronic immune mediated disorder
- **Symptoms:**
- Food impaction and dysphagia in adults
- Feeding intolerance or GERD-like symptoms in children
- **Morphology:**
- Rings in the upper and mid esophagus.
- Numerous eosinophils in epithelium
- Far from the GEJ.





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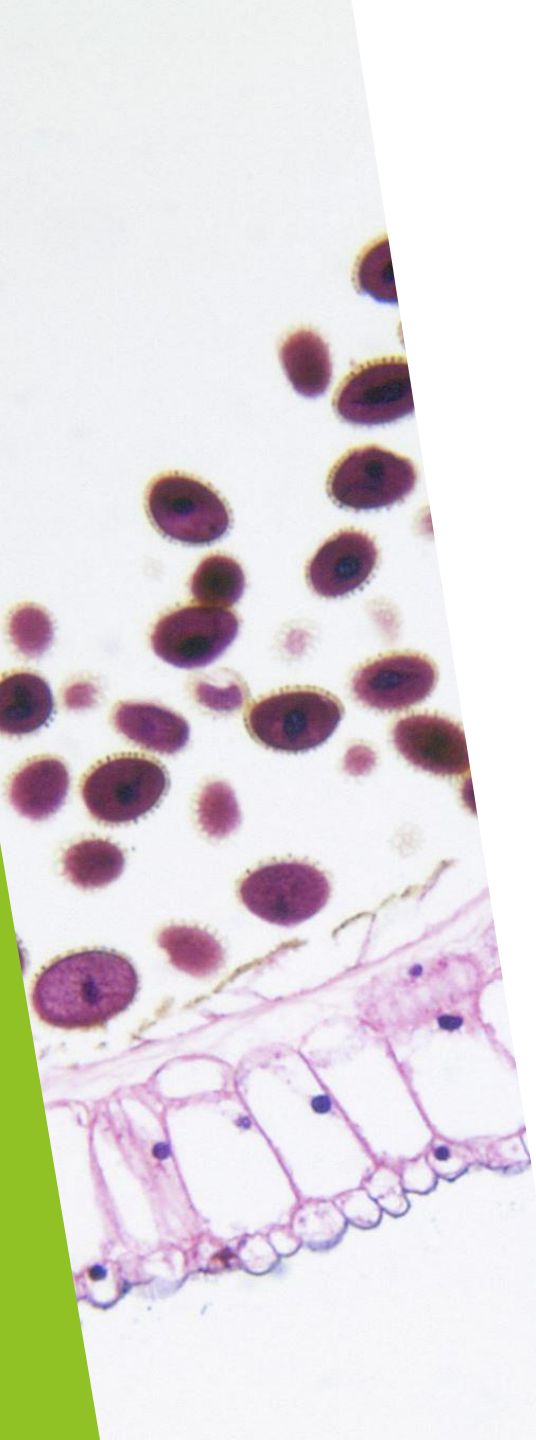
Management:

- Most patients are atopic (atopic dermatitis, allergic rhinitis, asthma) or modest peripheral eosinophilia.
- Refractory to PPIs.

- **Treatment:**
- Dietary restrictions(cow milk and soy products)
- Topical or systemic corticosteroids.

5-Barrett Esophagus

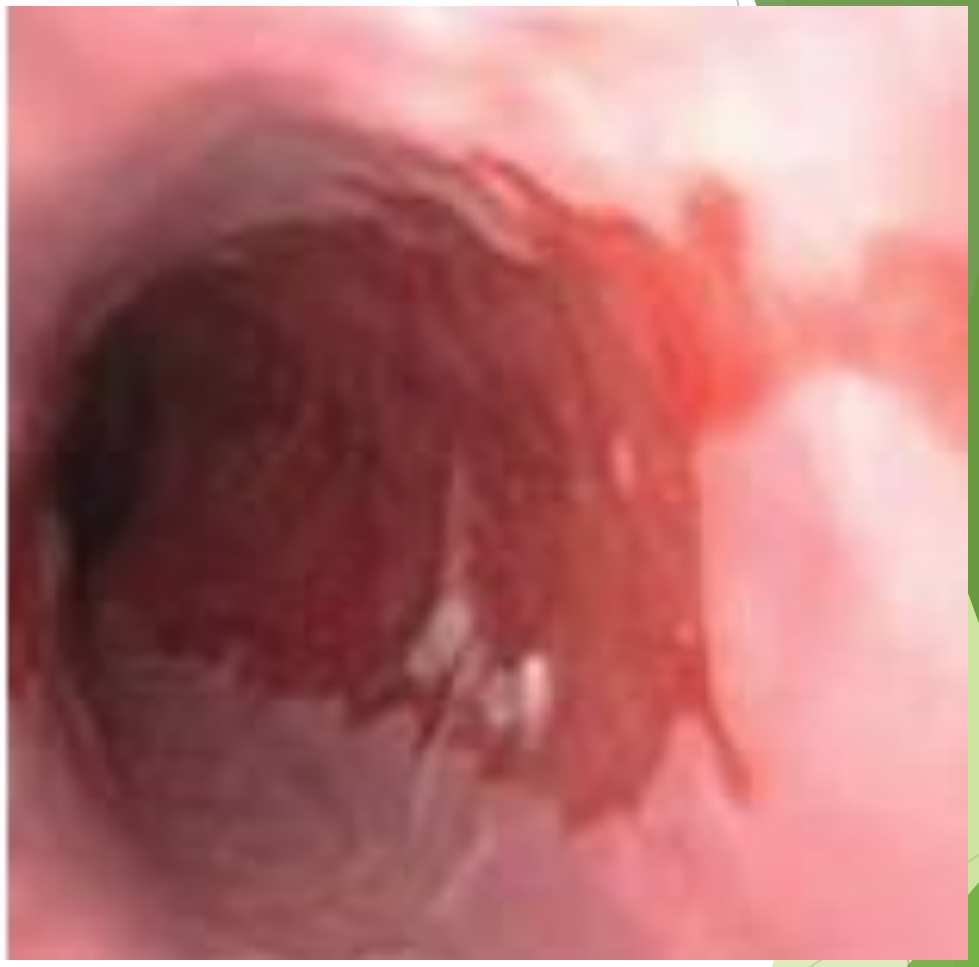


- Complication of chronic GERD
- Intestinal metaplasia.
- 10% of individuals with symptomatic GERD
- Males>>females, 40-60 yrs
- **Direct precursor of esophageal adenocarcinoma**
- **0.2-1% /year develop dysplasia (precursor of adenocarcinoma)**

MORPHOLOGY

- Endoscopy:
- Red tongues extending upward from the GEJ.

- Histology:
- **Intestinal metaplasia (defined by** Presence of goblet cells)
- +-Dysplasia : low-grade or high-grade
- Intramucosal carcinoma: invasion into the lamina propria.



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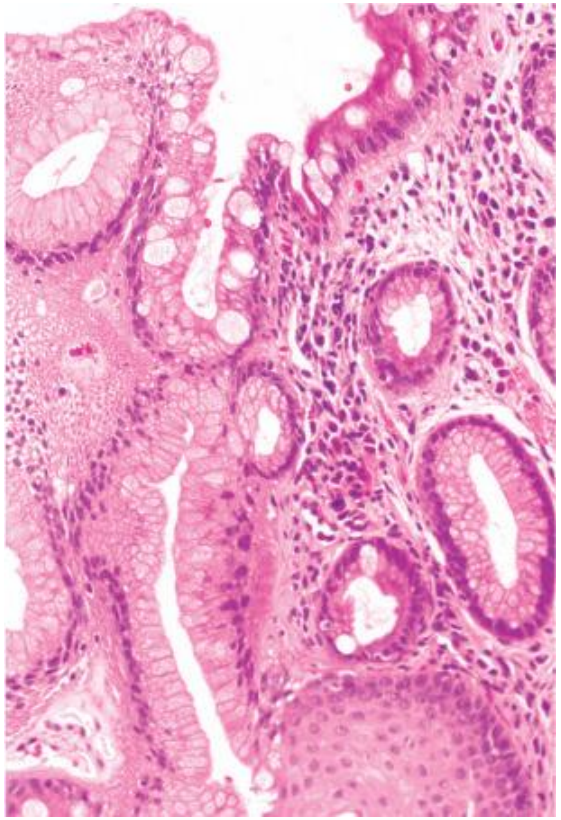

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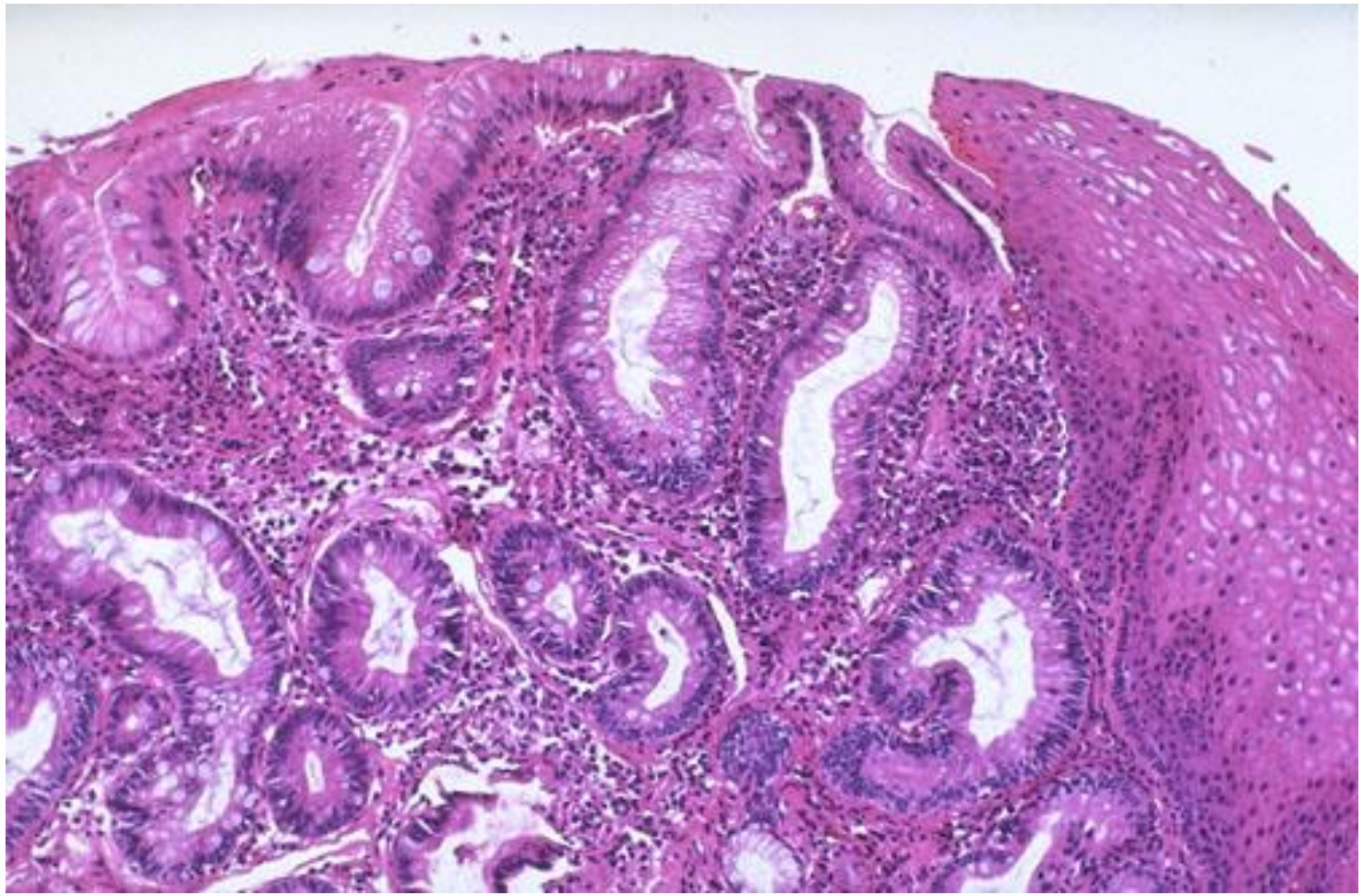

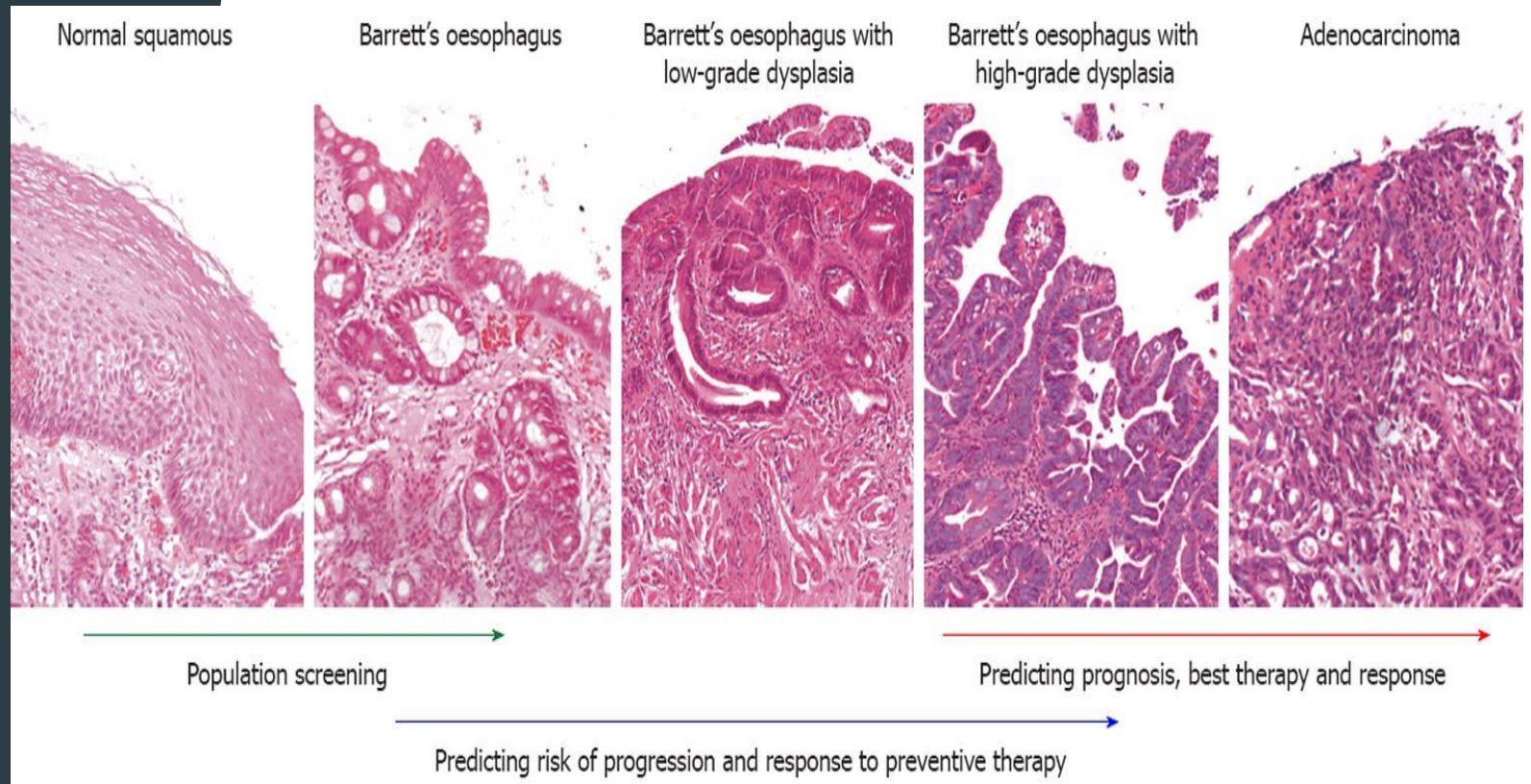

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Management of Barrett

Periodic surveillance endoscopy with biopsy to screen for dysplasia.

High grade dysplasia & intramucosal carcinoma needs interventions.

6-ESOPHAGEAL TUMORS

Squamous cell carcinoma (most common worldwide)

Adenocarcinoma (on the rise, ½ of cases in developed countries)

Adenocarcinoma

- Background of Barrett esophagus and long-standing GERD.
- Risk is greater if: documented dysplasia, smoking, obesity, radioTx.
- Male : female (7:1)
- Geographic & racial variation (developed countries)

Pathogenesis

- From Barrett>>dysplasia>>adenocarcinoma.
- Acquisition of genetic and epigenetic changes.
- Chromosomal abnormalities and TP53 mutation.

MORPHOLOGY

- Distal third.
- Early: flat or raised patches
- Later: exophytic infiltrative masses

- Microscopy:
- Forms glands and mucin.

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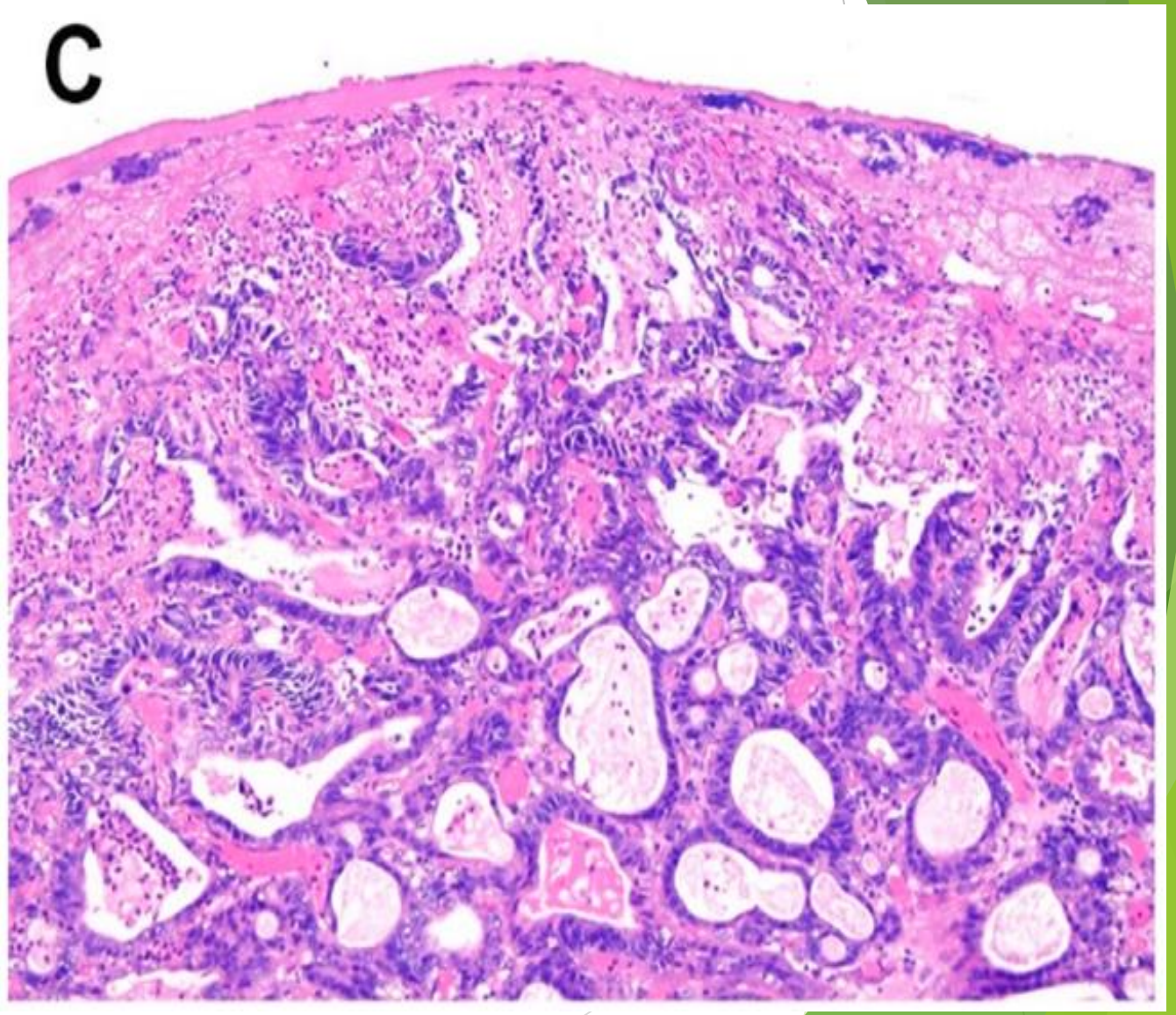


Clinical Features

- Pain or difficulty swallowing
- Progressive weight loss
- Chest pain
- Vomiting.
- Advanced stage at diagnosis: 5-year survival <25%.
- Early stage: 5-year survival 80%

Squamous Cell Carcinoma

- Male : female (4:1)
- More in rural, low resource countries.

- **Risk factors:**
- Alcohol
- Tobacco use
- Poverty
- Caustic injury
- Achalasia .
- Plummer-Vinson syndrome (iron deff.anemia, dysphagia,webs)
- Frequent consumption of very hot beverages
- Previous radiation Tx .

Pathogenesis

- In western : alcohol and tobacco use.
- Other areas: nutritional deficiency, polycyclic hydrocarbons, nitrosamines, fungus-contaminated foods
- HPV infection implemented in high-risk regions.

MORPHOLOGY

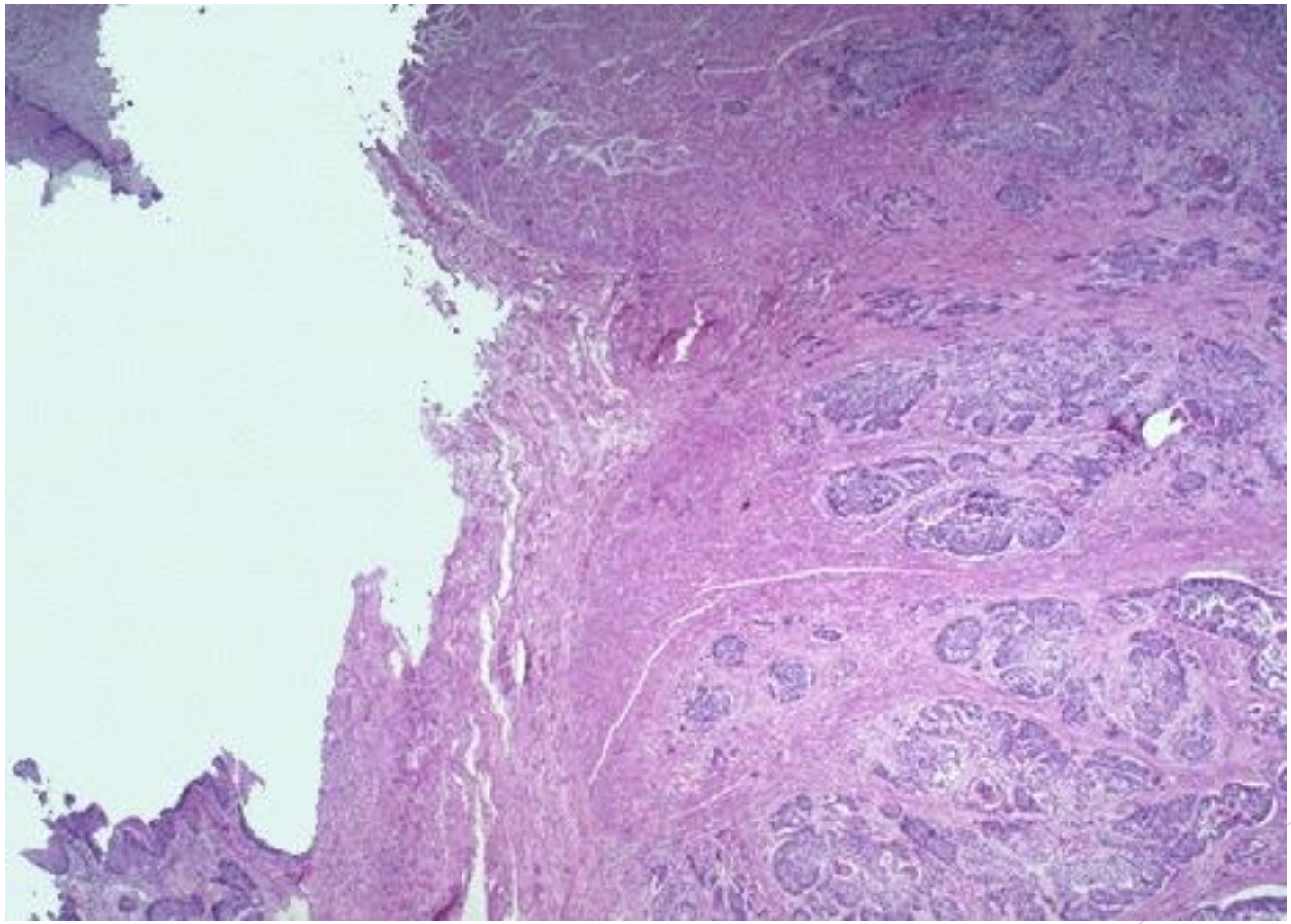
- Middle third (50% of cases)
- Polypoid, ulcerated, or infiltrative.
- Wall thickening, lumen narrowing
- Invade surrounding structures (bronchi, mediastinum, pericardium, aorta).

Mid esophagus

Microscopy:

- Pre-invasive: Squamous dysplasia & CIS.
- Well to moderately differentiated invasive SCC.
- Intramural tumor nodules away from main tumor.
- Lymph node metastases :
- Upper 1/3: cervical LNs
- Middle 1/3: mediastinalparatracheal, and tracheobronchial LNs.
- Lower 1/3: gastric and celiac LNs.

Invasive SCC



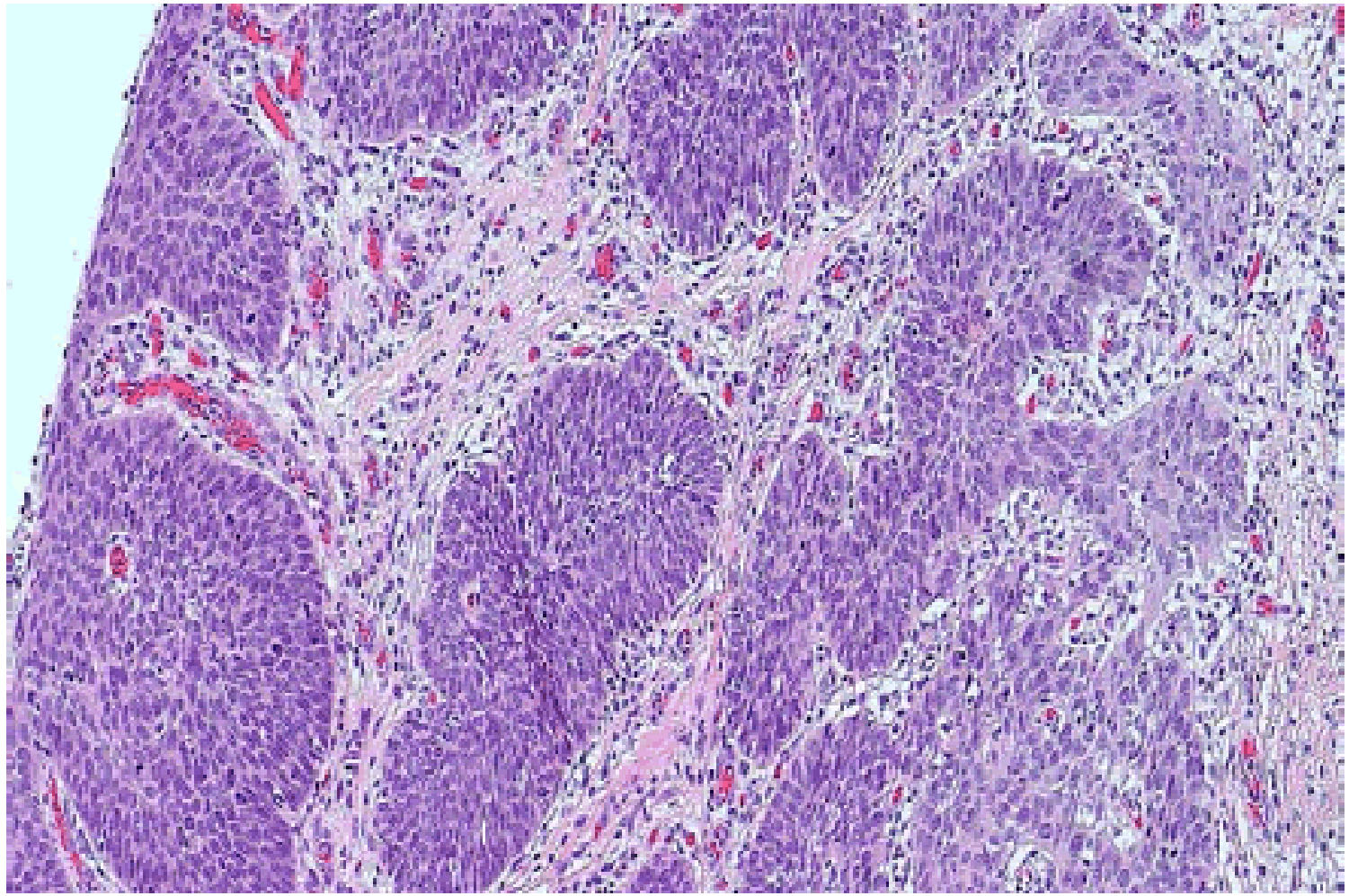


Figure 4: Squamous cell carcinoma of the esophagus with focal invasion into the muscularis mucosa and associated desmoplastic response.

Clinical Features

- Dysphagia
- Odynophagia
- Obstruction
- Weight loss and debilitation
- Impaired nutrition & tumor associated cachexia
- Hemorrhage and sepsis if ulcerated.
- Aspiration via a tracheoesophageal fistula
- Dismal Px: 5-year survival 10%