

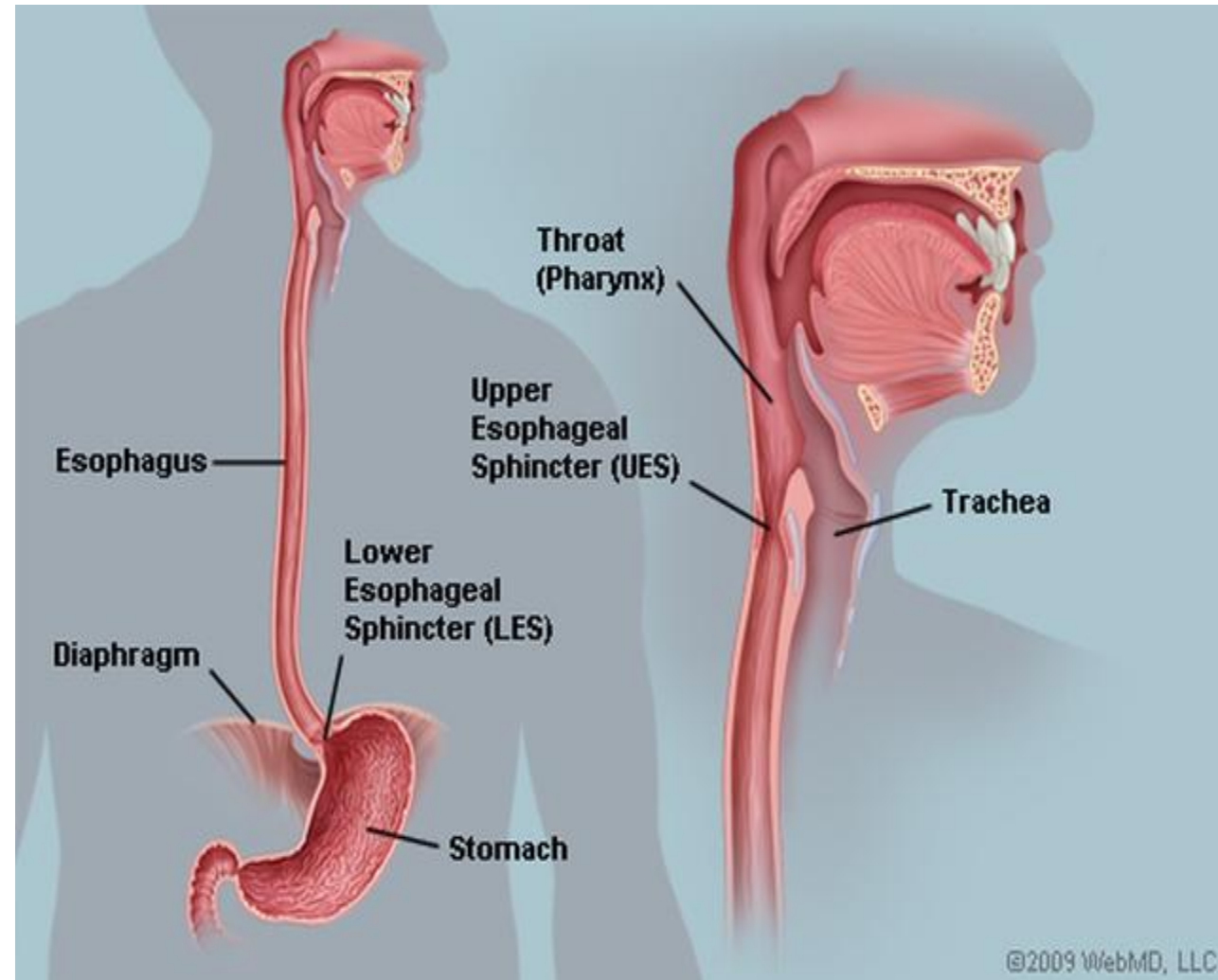
Gastrointestinal pathology esophagus and stomach lecture 1

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FRCPath

Pathology lectures in GI pathology

subject	Number of lectures	lecturer
Esophageal diseases	2	Dr H Awad
Gastric disease	2	Dr H Awad
Small intestine	2	Dr M Salihi
Large intestine	2	Dr M Salihi
liver	5	Dr M Shomaf
pancreas	1	Dr M Shomaf
Gall bladder	1	Dr M Shomaf

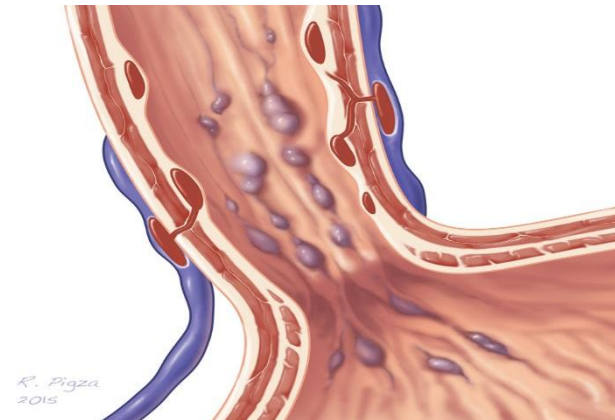
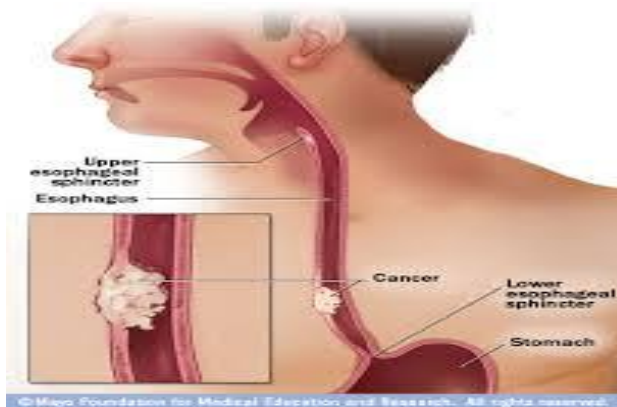


Types of diseases that can affect the esophagus

- Obstruction



- Inflammation



Esophageal diseases

1. Obstruction
2. Vascular diseases
3. Inflammation
4. Tumors

Esophageal obstruction

- Can be **mechanical** or **functional** obstruction
- Mechanical: the esophagus is obstructed due to developmental abnormality: atresia, fistula, or duplication.
- Functional: caused by several conditions that affect **normal motility**.

Mechanical obstruction

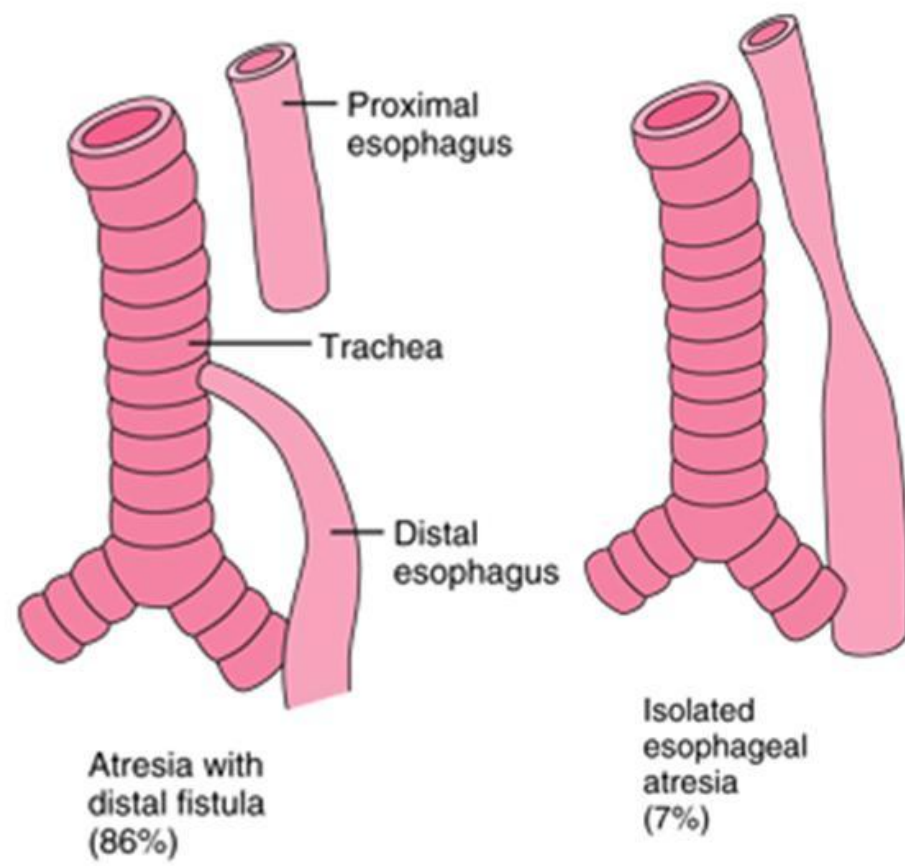
- Agenesis.
- Atresia
- Fistula
- Duplication

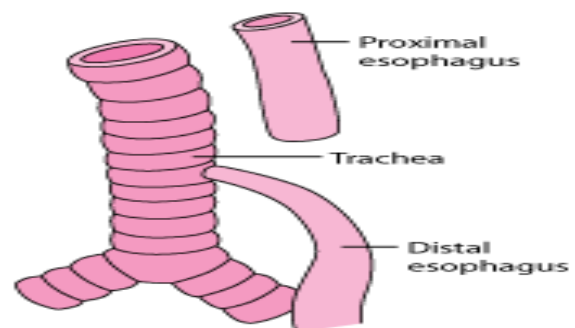
عَدَمُ التَّخَلُّقِ = AGENESIS

- Aggenesis = no esophagus. extremely rare

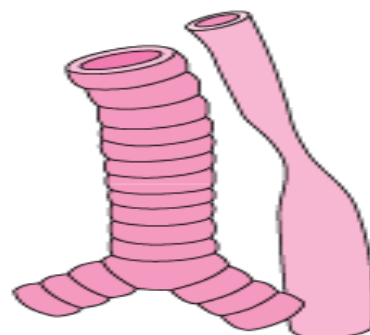
Atresia= انسداد = الرثق

- = Absence or closure of a natural passage or channel of the body.
- Atresia of esophagus: thin non-canalized cord replaces a segment of esophagus
- Atresia occurs mostly at or near tracheal bifurcation
- Usually associated with fistula connecting upper or lower esophageal pouches to a bronchus or the trachea
- This abnormal connection can cause aspiration, suffocation, pneumonia or severe fluid and electrolyte imbalance

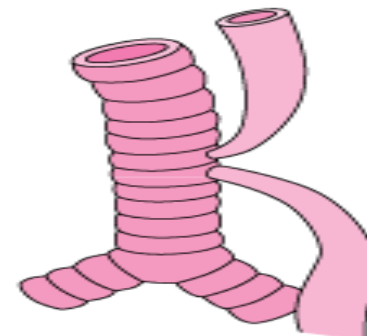




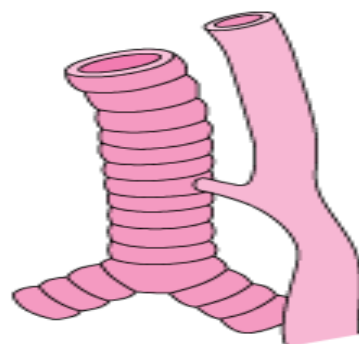
Atresia with
distal fistula
(86%)



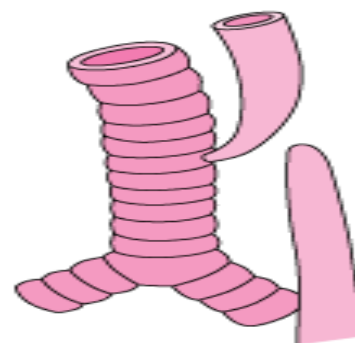
Isolated
esophageal
atresia
(8%)



Atresia with
double fistula
(1%)



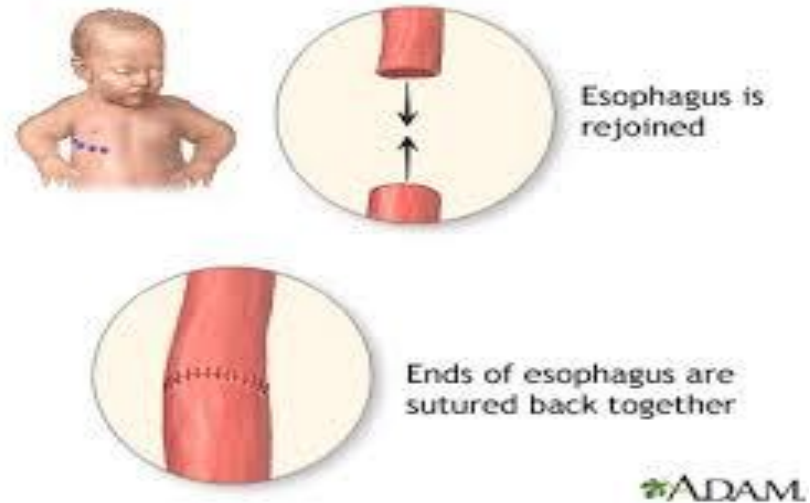
Isolated
tracheoesophageal
fistula (H type)
(4%)



Atresia with
proximal fistula
(1%)

Atresia

- Discovered shortly after birth because it causes regurgitation during feeding
- Must be corrected surgically



Stenosis

- Stenosis: thickening due to fibrous thickening of the submucosa, atrophy of muscularis propria, and secondary epithelial damage
- Stenosis is usually due to **inflammation** and scarring which could be due to reflux, irradiation or caustic injury
- These patients have dysphagia which is progressive. **Difficulty in eating solids occurs long before problems with liquid**

Caustic injury= corrosive injury

- An injury of muco-cutaneous surfaces—e.g., eyes, esophagus, skin—with tissue destruction due to direct contact with a strong acid or with a strong base.

Caustic injury

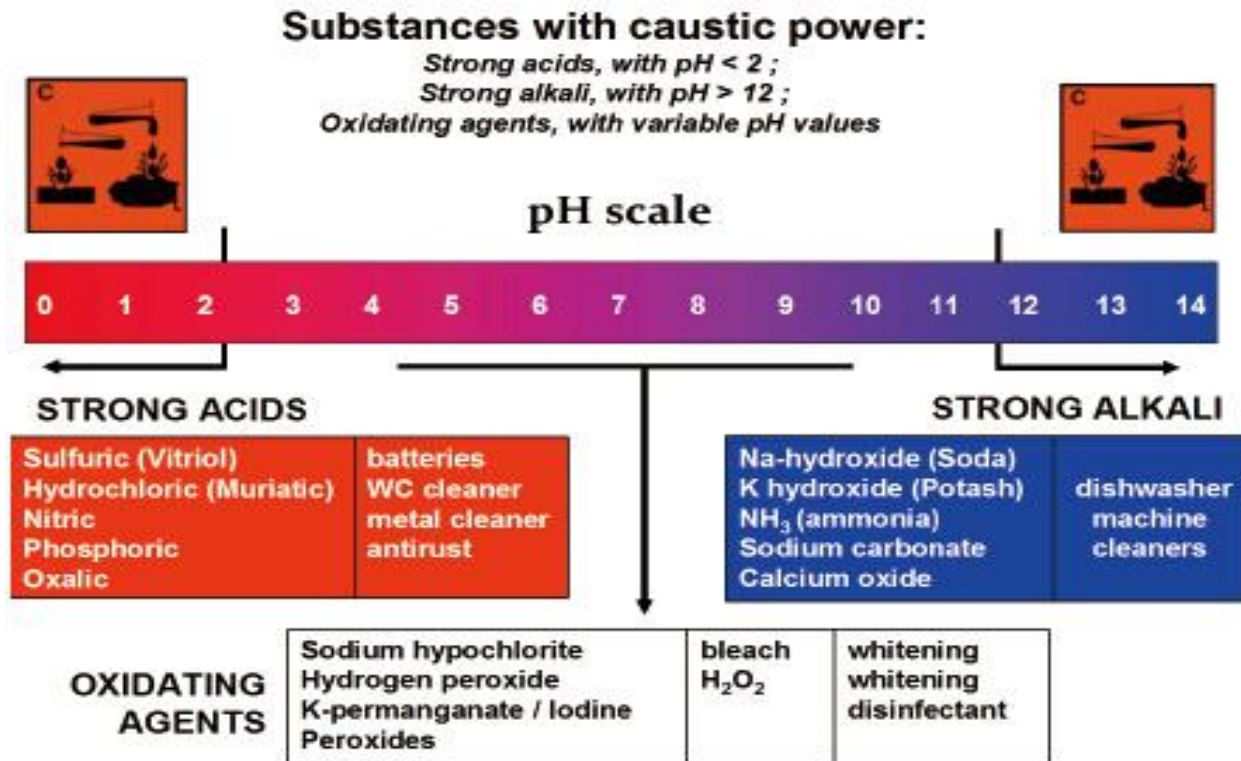
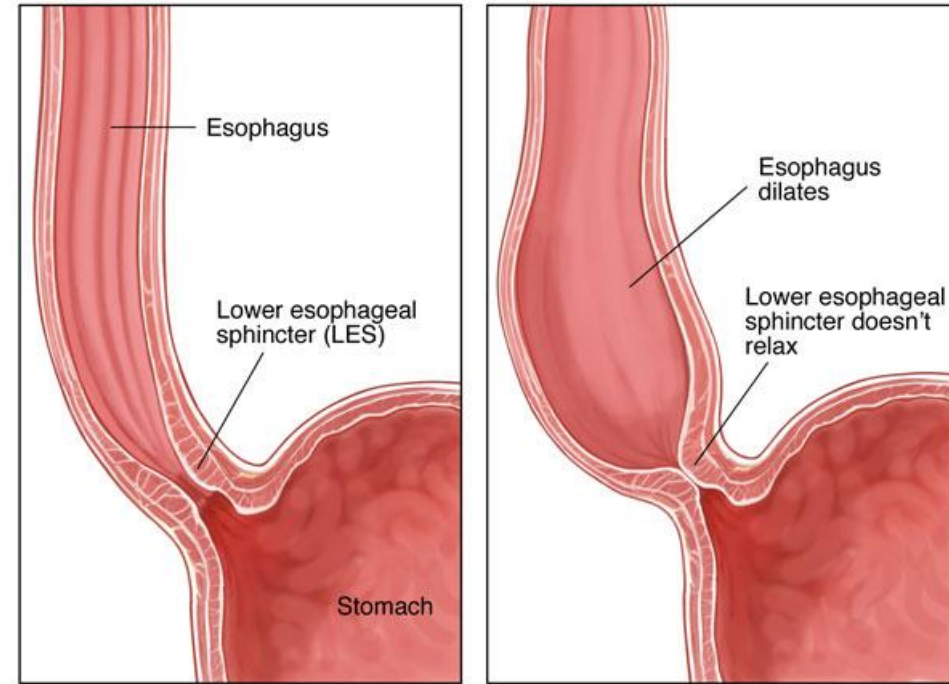
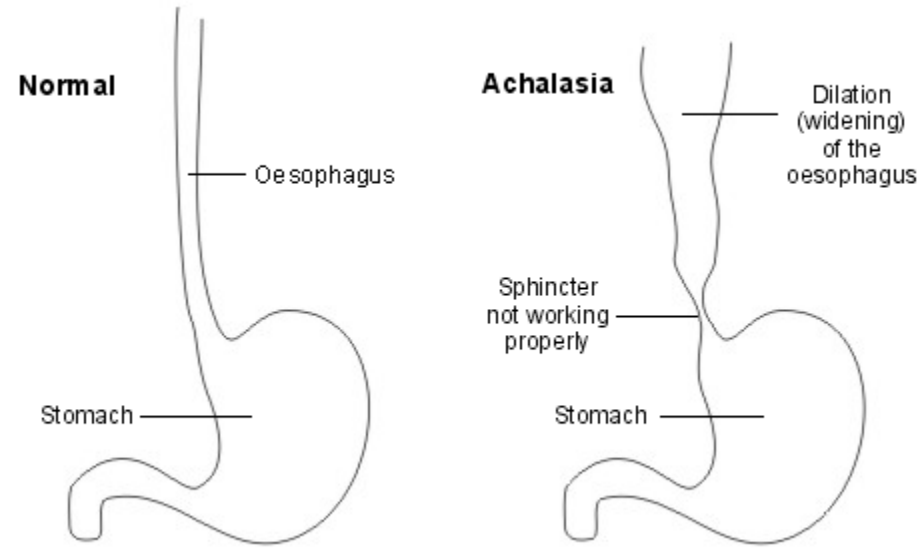


Figure 1 legend Synopsis of caustic agents: categories and most common utilization.

Functional obstruction

- Efficient delivery of food to the stomach requires **coordinated peristalsis of the muscles**
- Esophageal dysmotility interferes with these peristaltic contractions
- Achalasia is the most important cause of functional obstruction.

achalasia



Normal

Achalasia

Esophageal Achalasia

Achalasia= لا ارتخائية

- Caused by failure of the LES muscles to relax
- = Incomplete LES relaxation, increases LES tone and aperestalsis
- Can be Primary and secondary
- Primary: failure of the distal esophageal inhibitory neurons .
Idiopathic
- Secondary= Chagas disease: Trypanosoma cruzi infection destroys myenteric plexus neurons

symptoms

- Achalasia is characterized by difficulty in swallowing, regurgitation, and sometimes chest pain.



note

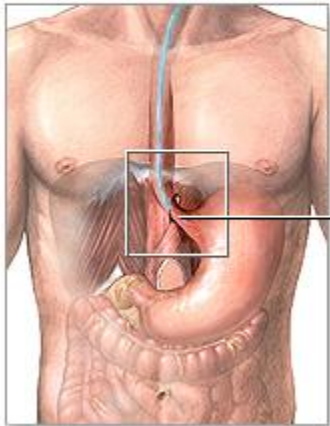
- Achalasia like disease can occur in any disease that can affect the neuronal innervation of the esophageal muscles

Examples:

1. diabetic autonomic neuropathy,
2. infiltrative disorders: malignancy, amyloidosis, sarcoidosis
3. lesions of dorsal motor nuclei like in polio or surgical ablation

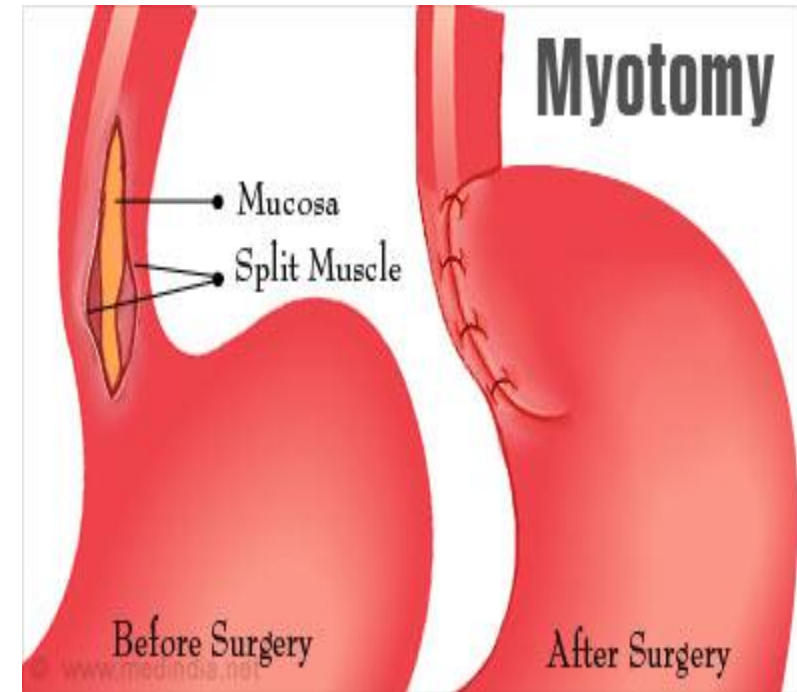
Treatment

Balloon dilation of the lower esophageal sphincter



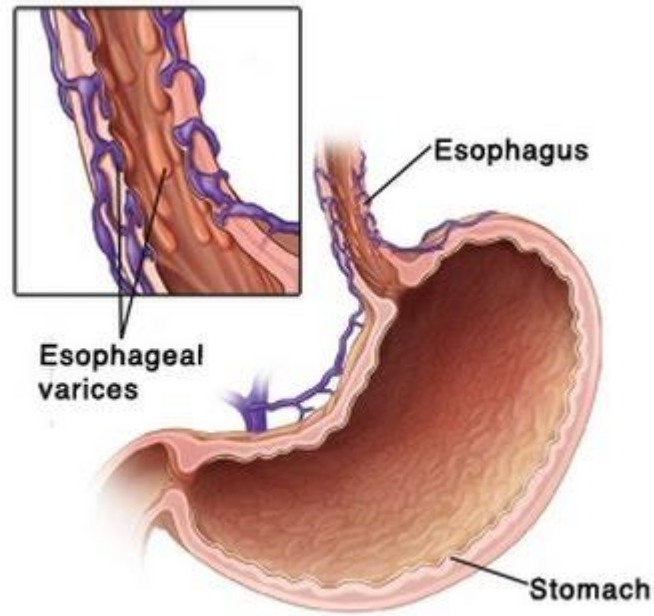
Lower esophageal sphincter

ADAM.



Diseases of blood vessels

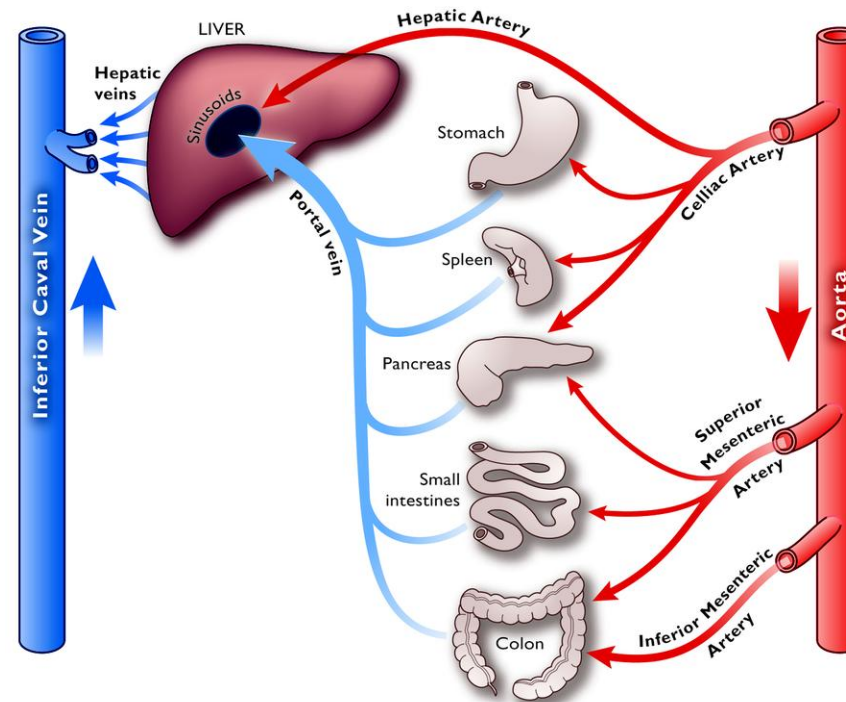
- The most important is : esophageal varices.

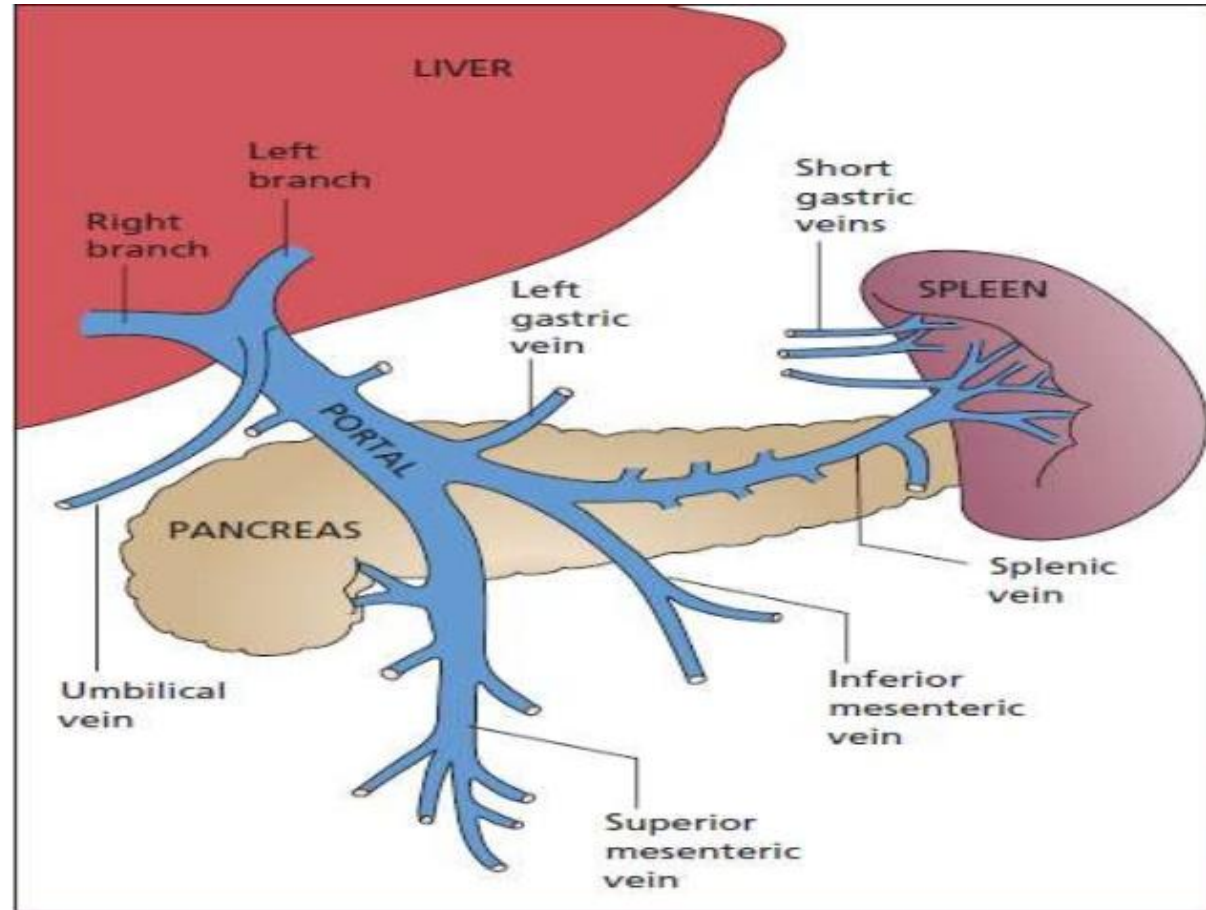


Normal blood flow to the GIT

- Venous blood from GIT is delivered to the liver via the portal vein before reaching inferior vena cava.
- So drugs and other materials absorbed in the intestines are processed by the liver before entering the systemic circulation
- If this flow is impaired: portal hypertension develops.
- Portal hypertension causes esophageal varices

Splanchnic circulation





Esophageal varices

- One of the sites where the splanchnic and systemic circulation can communicate is the esophagus .
- That's why when portal hypertension increases, collateral vascular channels develop in the esophageal veins to allow blood to shunt from the portal to caval system (inferior vena cava)
- These collateral veins (varices) enlarge and can rupture.

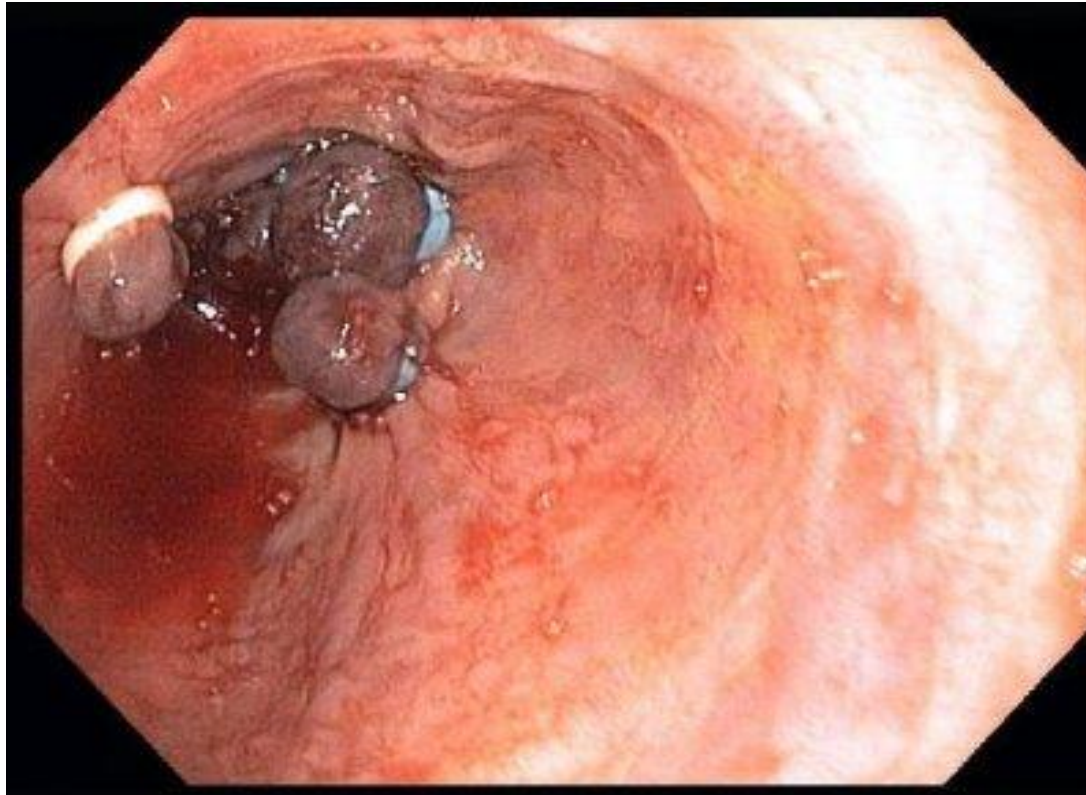
Causes of esophageal varices

- Any disease that causes increased portal hypertension will result in esophageal varices
- Liver cirrhosis is the most common cause worldwide, especially alcoholic liver disease
- Hepatic schistosomiasis is the second most common cause.

morphology

- Varices appear as tortuous dilated veins within the submucosa of distal esophagus and proximal stomach

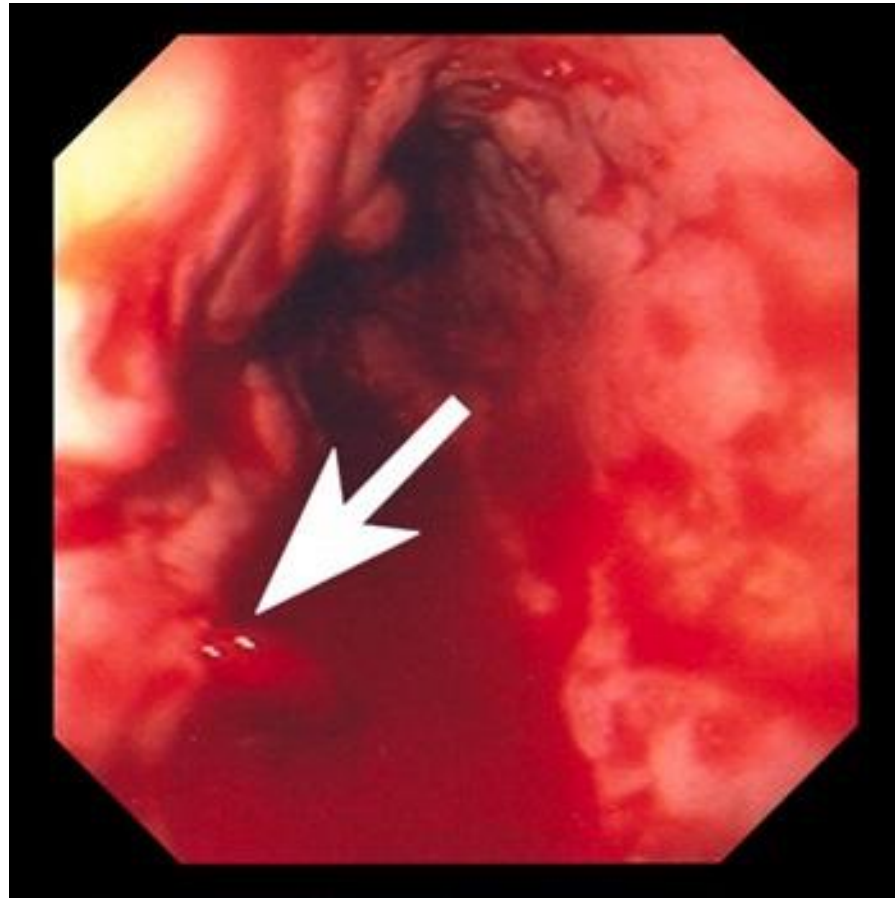
Esophageal varices: note the dilated
vessels



Clinical features

- Varices are usually asymptomatic.
- But, can rupture and cause hemorrhage
- If hemorrhage is severe: can result in death
- Half patients die from the first bleed
- Those who survive: more than 50% will have another bleed that can be fatal
- Variceal rupture is the most common cause of death associated with advanced cirrhosis.

Bleeding due to varices

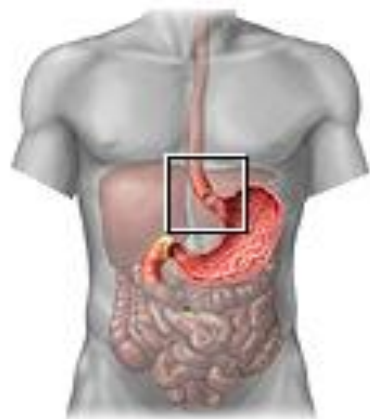


Esophageal inflammations= esophagitis

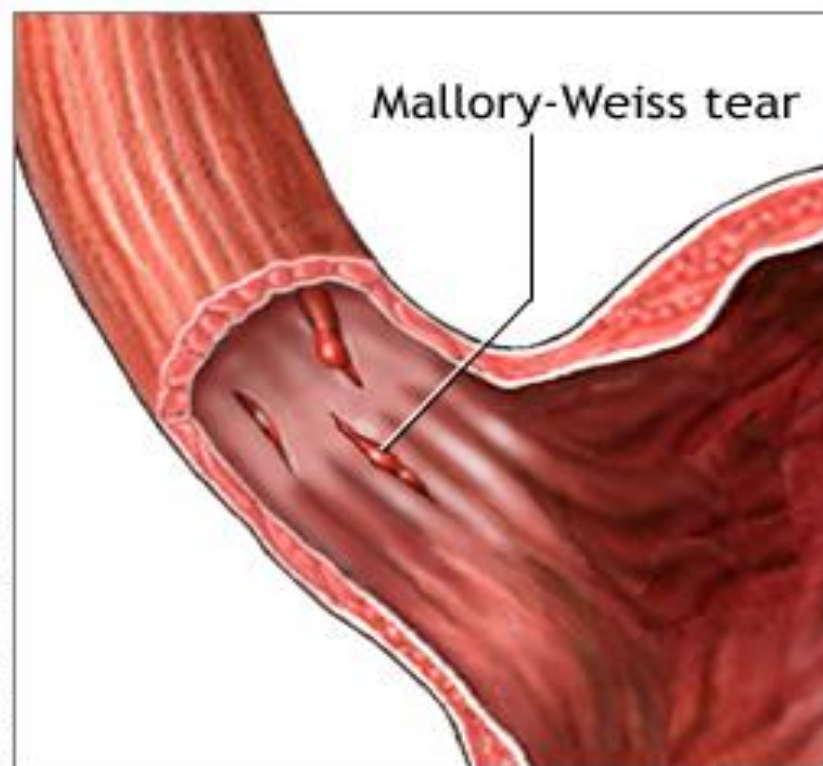
- Lacerations
- Chemical esophagitis
- Infectious esophagitis
- Reflux esophagitis
- Eosinophilic esophagitis
- Barrett esophagus

Esophageal lacerations vomiting

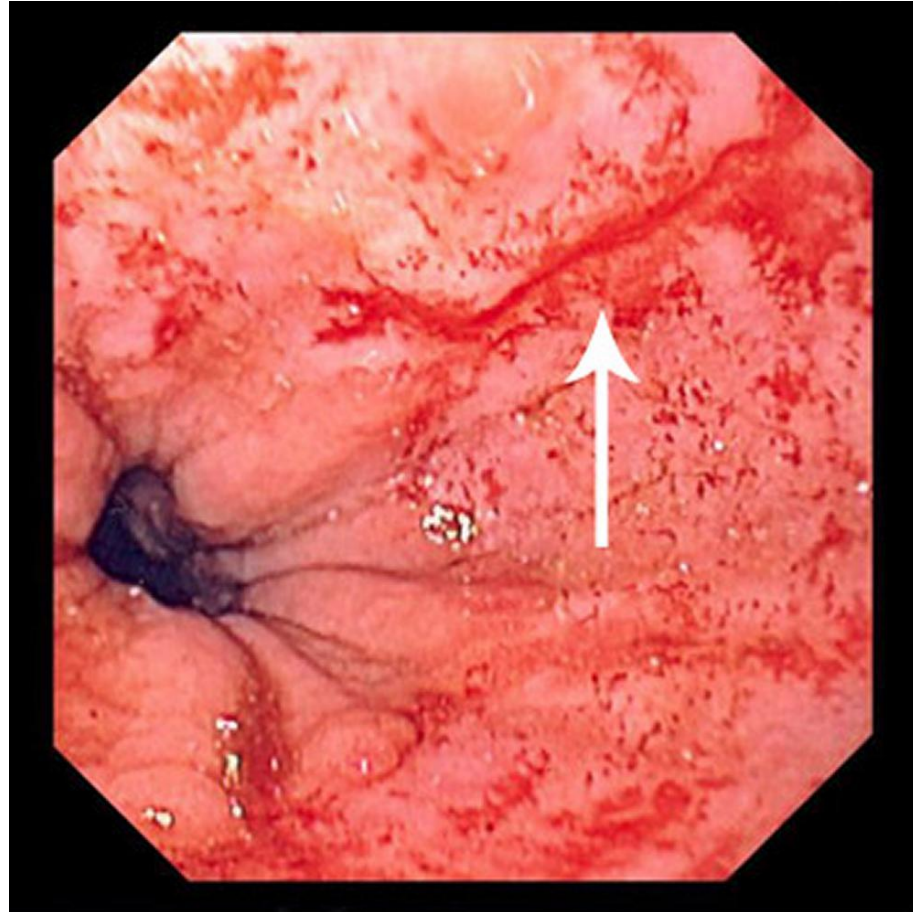
- Most common esophageal laceration: **Mallory Weiss tears**
- Associated with severe vomiting or with acute alcohol intoxication
- **Normally** there is a reflex relaxation of the gastroesophageal muscles before antiperistaltic contractile wave associated with vomiting
- This reflex fails during prolonged vomiting resulting in esophageal wall stretch and tear.
- Patients present with **hematemesis** (bloody vomit)
- The tears are longitudinal, superficial , cross the gastroesophageal junction and healing is usually rapid and complete... no surgical intervention is needed.



Mallory-Weiss tear is a tear in the mucosal layer at the junction of the esophagus and stomach



Mallory Weiss laceration



lacerations



Chemical esophagitis

- Inflammation of the esophagus can result from chemicals like: alcohol, acids, bases, hot fluid, heavy smoking .
- Pill induced esophagitis: medicinal pills lodge into the esophagus and dissolve there
- Chemotherapy and radiotherapy can also cause esophagitis

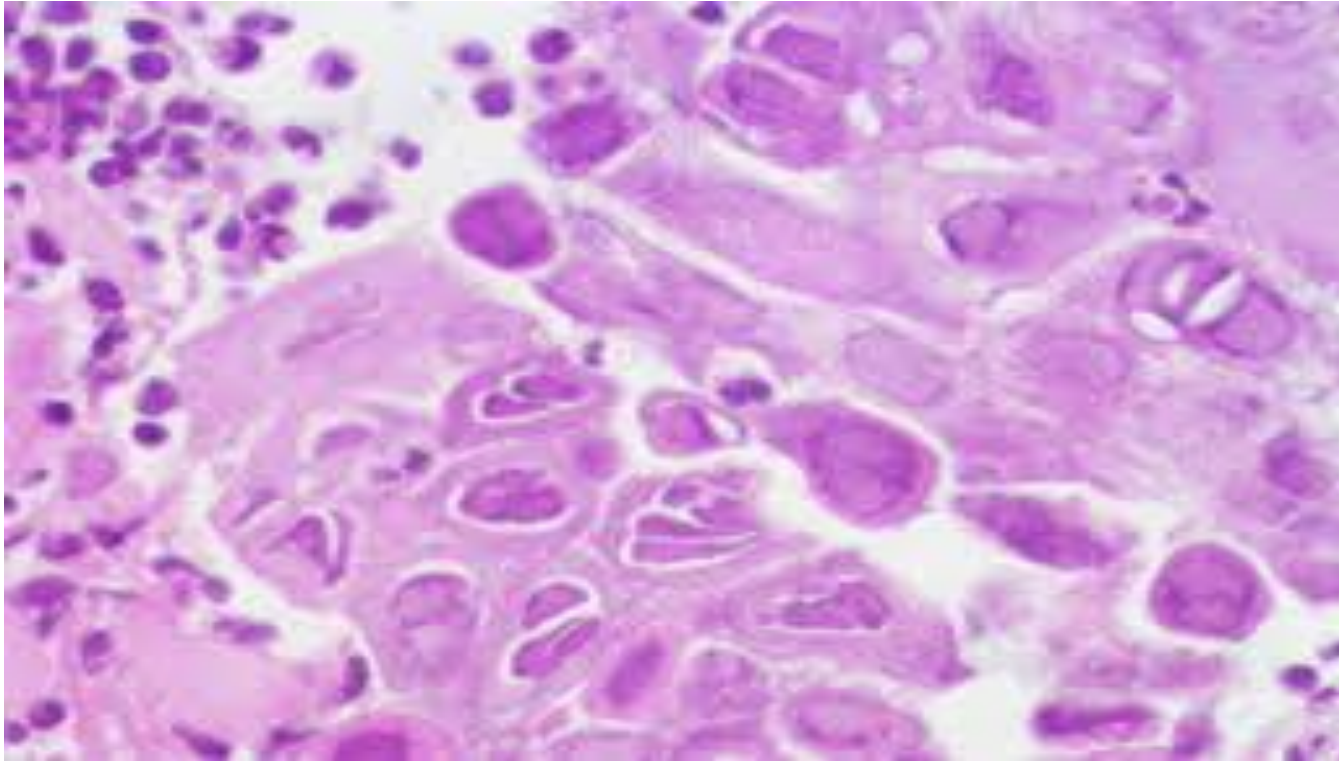
infections

- Herpes simplex: causes punched out ulcers
- CMV: causes shallow ulcers
- Candida: pseudo membrane

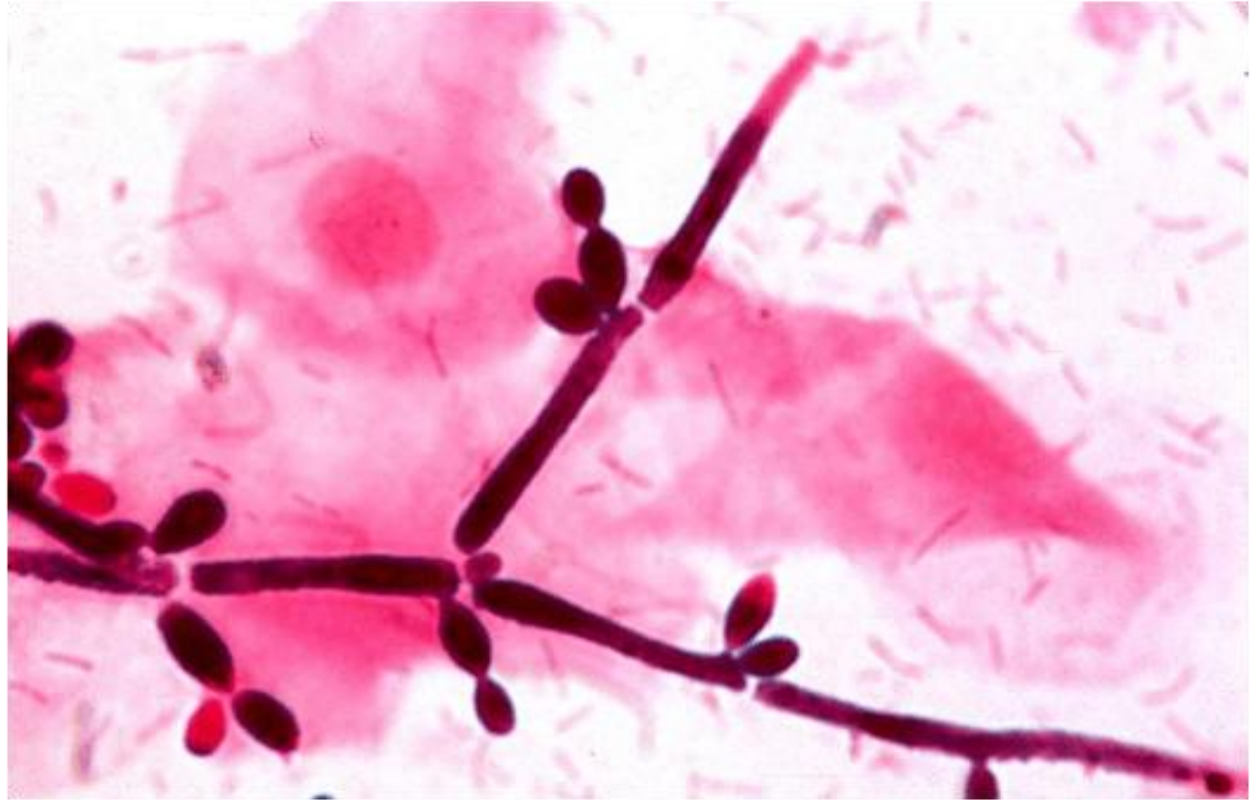
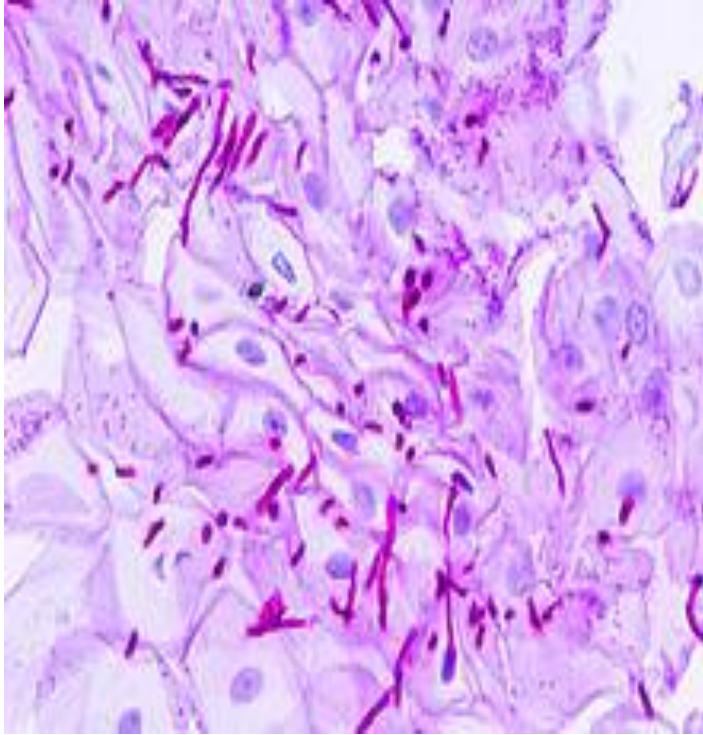
Ulcer.. This can be infectious



Herpes inclusions



candida



Reflux esophagitis

- Is inflammation of the lower esophagus due to reflux of gastric contents, which are acidic, from the stomach to the esophagus.
- It is the most common cause of esophagitis

Also called: gastroesophageal reflux disease GERD



pathogenesis

- Reflux of gastric juices into esophagus causes mucosal injury in the esophagus

Causes of this reflux

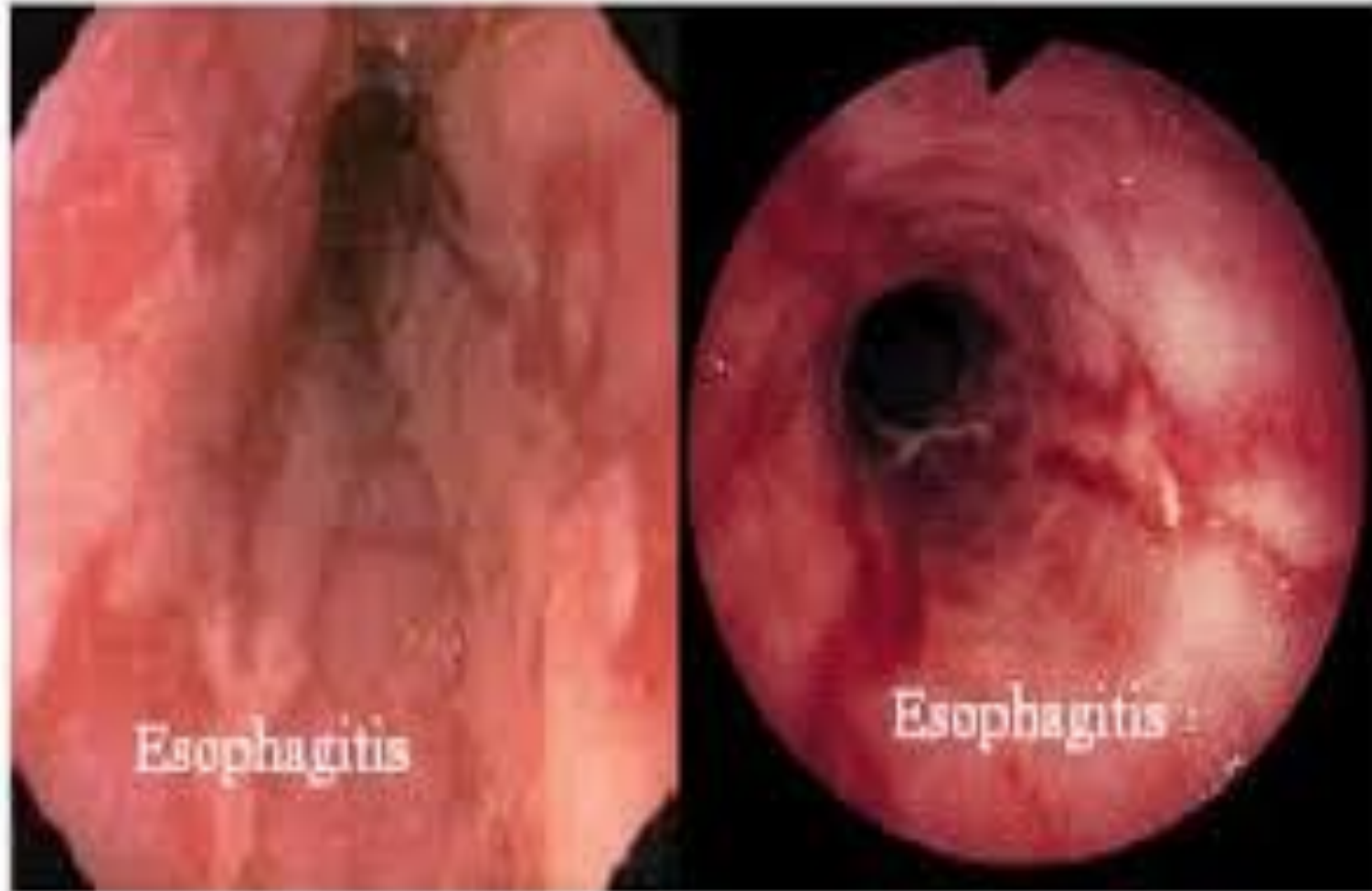
- 1. Decreased LES tone will cause reflux: alcohol, smoking
- 2. increased abdominal pressure: obesity, pregnancy,
- 3. delayed gastric emptying and increased gastric volume
- 4. in many cases, no cause is known !!

morphology

- Hyperemia: redness... seen macroscopically or during endoscopy
- Microscopically: eosinophils, neutrophils, basal zone hyperplasia, elongation of lamina propria papillae

Inflammation in esophagus

GERD is the most common cause



Clinical features

- Occurs in adults older than 40
- Symptoms: heartburn, dysphagia, regurgitation
- Rarely: severe chest pain that can mimic heart disease
- Complications: ulceration, strictures, Barrett's mucosa

*Thank
you*

