

*Transmural means all layers of esophagus.

*Catastrophy happen when the reapture reaches

serosa

cerations are *Mallory- Weiss*

صوت السعال

with severe retching or

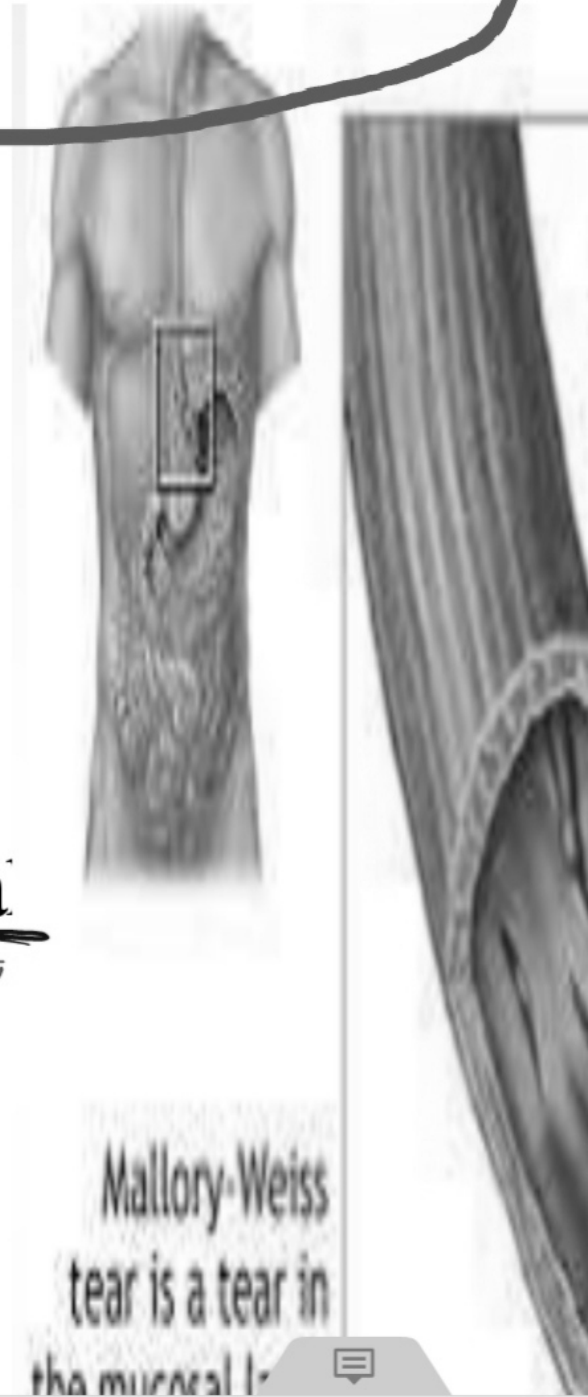
now n

re, characterized by transmura

كل لؤلؤي ار
تتميزت كل السعال

occurs rarely and is a

ions longitudinally oriented,

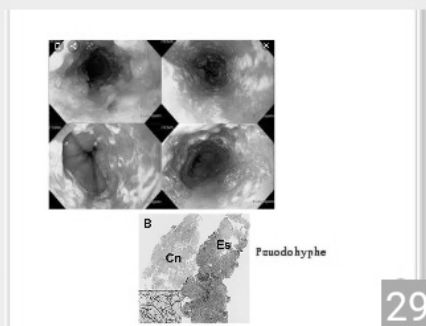
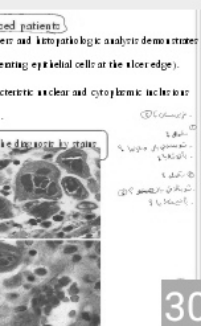


ESOPHAGITIS

1- Chemical and Infectious Esophagitis

- Medicinal pills may lodge and dissolve in the esophagus, rather than passing intact, resulting in a condition termed *pill-induced esophagitis*.
- Esophagitis due to chemical injury generally causes only self-limited pain, particularly *odynophagia* (pain with swallowing). Hemorrhage, perforation may occur in severe cases.
- Iatrogenic esophageal injury may be caused by cytotoxic *chemotherapy, radiation, graft-versus-host disease*.
- Candidiasis is characterized by adherent, graywhite pseudomembranes composed of densely matted fungal hyphae and inflammatory cells in the esophageal mucosa.

-Iatrogenic associated with medical cause.



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28

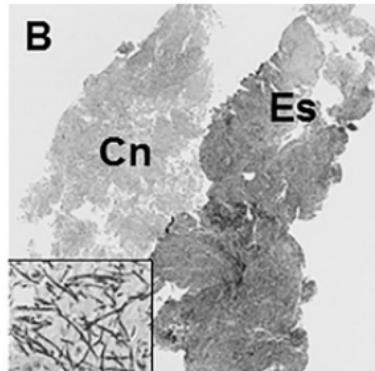
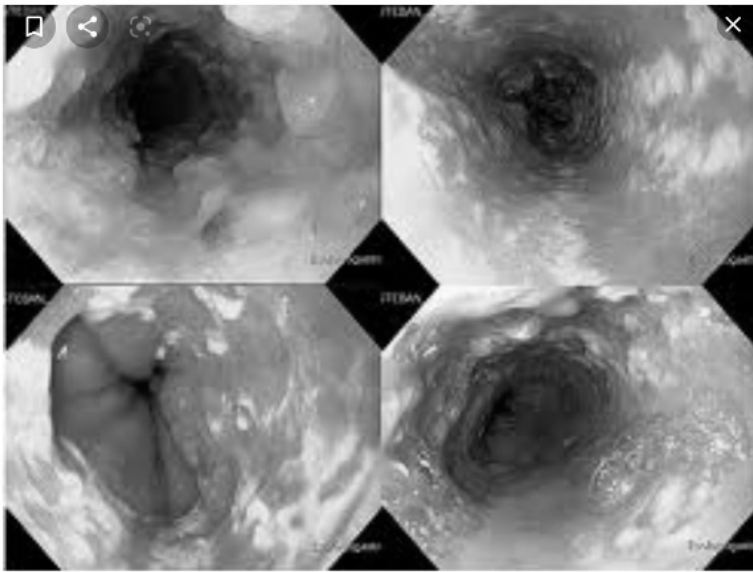
LACERATIONS

The most common esophageal lacerations are Mallory-Weiss tears, which are often associated with severe retching or vomiting.

By contrast, Boerhaave syndrome, characterized by a full-thickness esophageal tear and mediastinitis, occurs rarely and is a catastrophic event. Linear lacerations: longitudinally oriented.

Contrast the OBI. Superficial and heal quickly. No surgical intervention.

27



Pseudoepitheliomatous hyperplasia



...ed patients
...er and histo pathologic analysis demonstrates
...enting epithelial cells at the ulcer edge).

...teristic nuclear and cytoplasmic inclusions

...ke diagnosis by staining

30

B
Cn Es Pseudoepitheliomatous hyperplasia

29

ESOPHAGITIS

1- Chronic and Acute to Esophagitis

- Infectious may be due to fungi and bacteria, the esophagus, and viruses among them the most frequent are candida and gastroesophageal reflux.
- Esophagitis due to chemical injury generally caused by refluxed gastric juice, particularly reflux esophagitis (gas and acid reflux), Barrett's esophagus, and radiation (only occur in some cases).
- Immune esophagitis (eosinophilic) may be caused by systemic chemotherapy, radiation therapy, or drug (beta-blocker) disease.
- Candidiasis is characterized by all these groups and predominantly composed of fungal, mixed fungal types and inflammatory cells in the esophageal mucosa.

- Latrogenic associated with medical cause.

28

LACERATIONS

...in most of men all layers of esophagus
...caused by laceration when the esophagus is
...open

- The most common esophageal lacerations are Mallory-Weiss tears, which are often associated with severe retching or vomiting.

- By contrast, Borshchansky syndrome, characterized by trauma, esophageal tear and mediastinitis, occurs rarely and is a spontaneous event. Linear lacerations: longitudinally oriented.

Crohn's O/EI: Superficial and Heal quickly, no surgical intervention

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They occur mostly in Immunocompromised patients

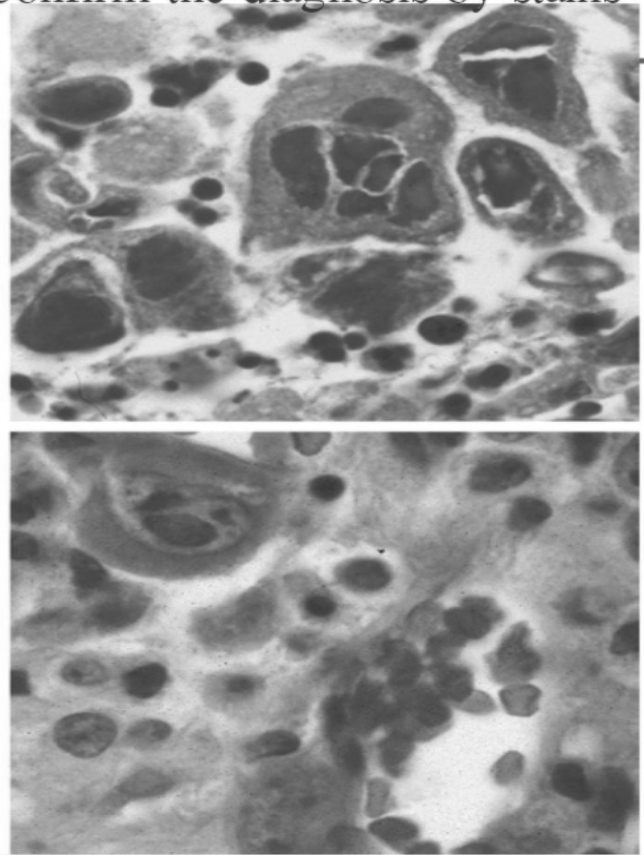
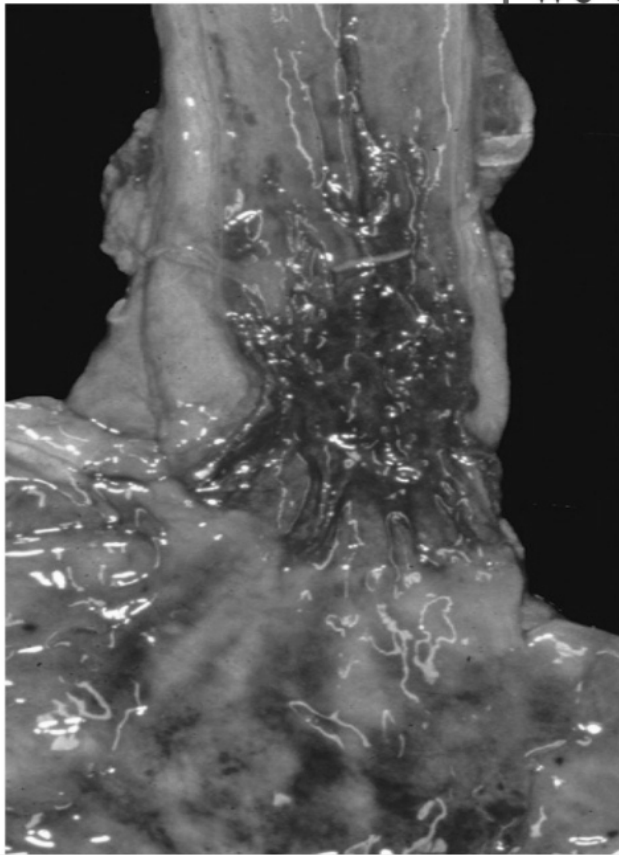
Herpesviruses typically cause punched-out ulcers and histopathologic analysis

nuclear viral inclusions within a rim of degenerating epithelial cells at the ulcer edge.

CMV causes shallower ulcerations and characteristic nuclear and cytoplasmic inclusions

within capillary endothelium and stromal cells.

We Confirm the diagnosis by stains



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ESOPHAGITIS

1- Cytomegalovirus (CMV) Esophagitis

- Endothelial cells may be large and foamy with the very large, inclusion bodies within the nucleus.
- Resulting in a chronic, nonspecific, full-thickness esophagitis.
- Esophagitis due to chemical injury generally causes only superficial injury, particularly submucosal injury.
- Herpetic esophagitis may be caused by cytomegalovirus, radiation therapy, or gastrointestinal disease.
- Candidiasis is characterized by at least granular pseudomembrane composed of fungal, mixed fungal and inflammatory cells within the esophageal mucosa.

- Latrogenic associated with medical cause.

28

LACERATIONS

The most common esophageal lacerations are linear tears, which are often associated with severe vomiting.

- By contrast, Boerhaave syndrome, characterized by esophageal tear and mediastinitis, occurs after a catastrophic event. Linear lacerations heal quickly over the O/EI. Superficial and heal quickly.

28

REFLUX ESOPHAGITIS AND GASTROESOPHAGEAL

REFLUX DISEASE (GERD)

- ❑ Reflux of gastric contents into the lower esophagus
- ☑ Most frequent cause of esophagitis
- ☑ Most common complaint by patients
- ☑ Gastroesophageal reflux disease, GERD
- ☑ Squamous epithelium is sensitive to acids
- ☑ Protective forces: mucin and bicarbonate, high LES Tone.

LES: lower esophageal sphincter tone

Pathogenesis

- ☑ Decreased lower esophageal sphincter tone
(alcohol, tobacco, CNS depressants)
- ☑ Increase abdominal pressure
(obesity, pregnancy, hiatal hernia, delayed gastric emptying, and increased gastric volume)
- ☑ Idiopathic!!

*occurs mainly in males



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Histopneumonitis typically cause packed-over ulcer and histopathologic analysis demonstrates **atypical and necrotic** within a rim of degenerating epithelial cells at the ulcer edge.

CMV causes shallower ulceration and characteristic nuclear and cytoplasmic inclusions within capillary endothelium and stromal cells.

They confirm the diagnosis by stain.

30

B Cn Es Pseudo-hyphae

29

ESOPHAGITIS

- ☑ **CMV** and **H. pylori** in the esophagus
- ☑ Lesions of pH: may be grossly difficult to see, resulting in a normal **gross** appearance
- ☑ Esophagitis is an clinical entity generally self-limited, particularly **reflux** esophagitis, but ulcers may occur in some cases.
- ☑ Intense reflux esophagitis may be caused by **gastroesophageal disease**.
- ☑ Candidiasis is characterized by **white plaques** and pseudomembranes composed of **fungal hyphae** and **refluxed mucus**.
- Latrogenic associated with med



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

***We must always think about heart disease first then about GERD**

- ☑ Tx: proton pump inhibitors



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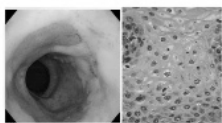
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- ☑ Tx: proton pump inhibitors

33

MORPHOLOGY

- ☑ Macroscopy (endoscopy)
Depends on severity (chronic/acute). Simple hyperemia (red)
- ☑ Microscopic:
Eosinophilic infiltration
Followed by neutrophils (more severe).
Blind zone hyperplasia
Elongation of lamina propria papillae



32

REFLUX DISEASE (GERD) AND GASTROESOPHAGEAL

REFLUX DISEASE (GERD)

- ☑ Reflux of gastric contents into the lower esophagus
- ☑ Most frequent cause: dysplastic
- ☑ Most common complication: Barrett's
- ☑ Decreased esophageal sphincter tone: GERD
- ☑ Decreased esophageal sphincter tone: acid
- ☑ Decreased esophageal sphincter tone: acid
- ☑ Decreased esophageal sphincter tone: acid

LES: lower esophageal sphincter tone

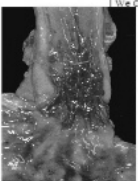
Fatigue

- ☑ Decreased lower esophageal sphincter tone (diets, alcohol, CYP4A2 polymorphisms)
- ☑ Increased abdominal pressure (occurs mainly in males)
- ☑ Pregnancy, hiatal hernia, delayed gastric emptying, and increased gastric volume
- ☑ Hypertension

31

They occur mostly in immunocompetent
Hesitant to typically cause protracted
in clear, small nodules within a rim of degenerative

CMV cancer: cell wall necrosis and chronic
within capillary endothelium and stromal cells



31

COMPLICATIONS

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

*It is one of the most common metaplastic changes in the body

Hiatal hernia is characterized by separation of the diaphragmatic crura and protrusion of the stomach into the thorax through the resulting gap.

*The symptoms look like GERD



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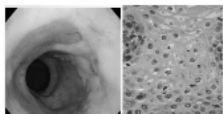
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- Proton pump inhibitors

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- Basal zone hyperplasia
- Elongation of lamina propria papillae



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- Defective gastric contents in the lower esophagus
- Most frequent cause of esophagitis
- Most common complication of GERD
- Characterized by reflux of gastric contents
- Causes esophagitis in acute/chronic and
- Proximal fibrosis, strictures and hiatal hernia
- LES: lower esophageal sphincter

Pathogenesis

- Decreased lower esophageal sphincter tone (deficient relaxation, chronic depression)
- Increased abdominal pressure
- Esophageal peristalsis (delayed gastric emptying, delayed gastric emptying, and increased gastric volume)
- Diaphragm



EOSINOPHILIC ESOPHAGITIS

Chronic immune mediated disorder

اشخا Symptoms:

- Food impaction and dysphagia in adults
- Feeding intolerance or GERD-like symptoms in children

اشخا Endoscopy:

Rings in the upper and mid esophagus. (looks like trachea)

اشخا Microscopic:

- Numerous eosinophils (no neutrophils) w/n epithelium
- Far from the GEJ.

Most patients are: atopic (atopic dermatitis, allergic rhinitis, asthma) or modest peripheral eosinophilia.

Tx: - Dietary restrictions(cow milk and soy products)

- Topical or systemic corticosteroids.
- Refractory to PPIs. (most patients do not respond to it, so we use corticosteroids)

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COMPLICATIONS

- Esophageal stricture
- Hematemesis
- Malacia
- Diverticula
- Barrett esophagus (presence of CA)

It is one of the most common metabolic changes in the body

Hiatal hernia is characterized by separation of the diaphragmatic crura and protrusion of the stomach into the thorax through the resulting gap.

The symptoms look like GERD

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CLINICAL FEATURES

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- May occur in infants and children
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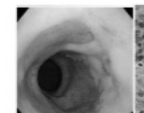
We must always think about heart disease first then about OEED

- Tx: proton pump inhibitor

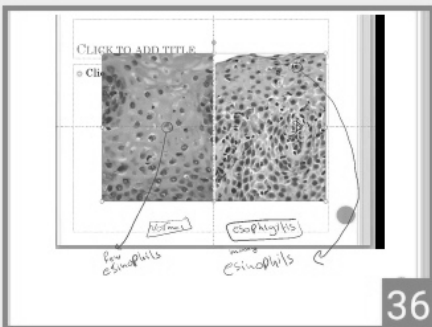
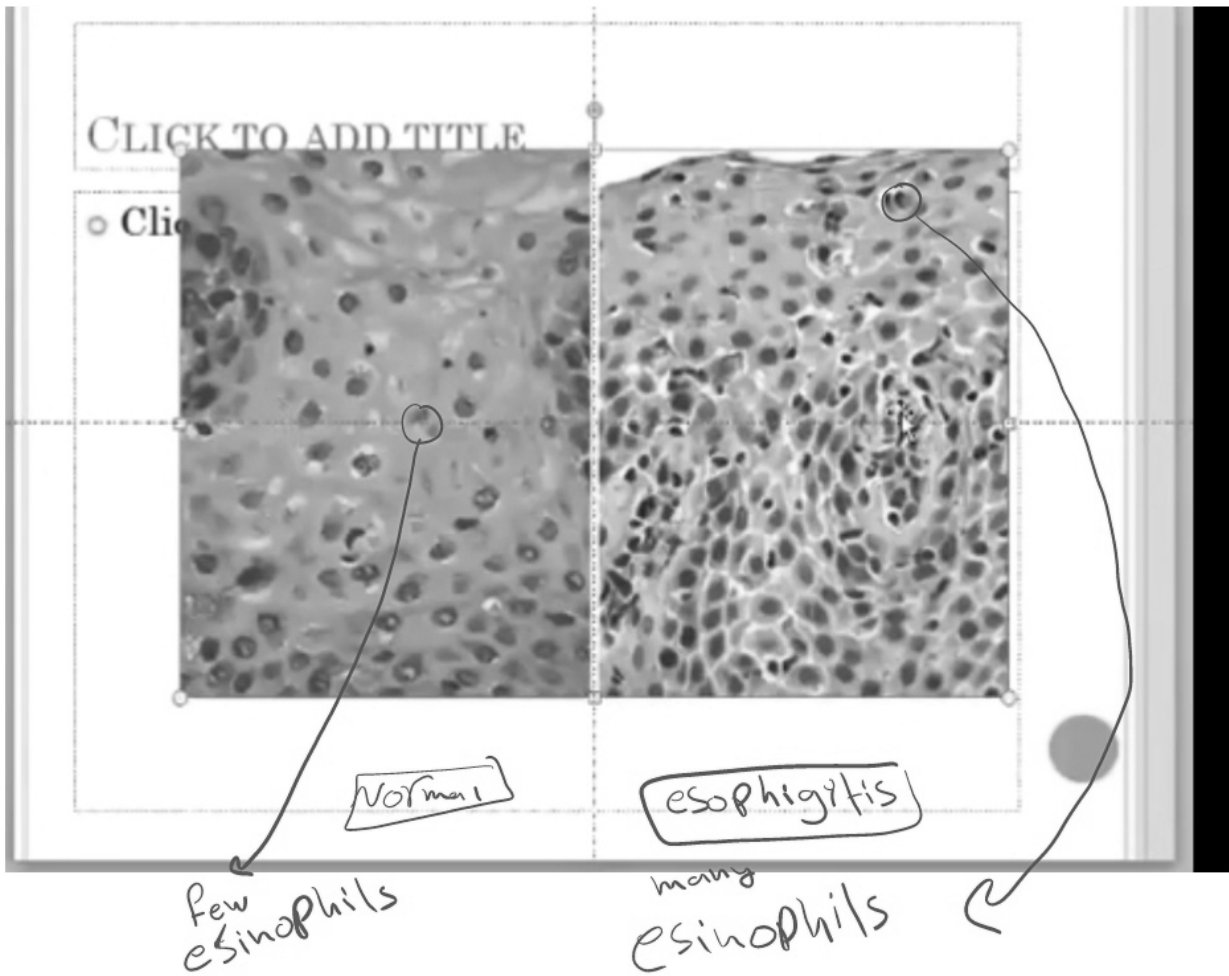
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MORPHOLOGY

- Macroscopy (endoscopy)
- Depends on severity (chronic/acute, Simple hyperemia (red))
- Microscopic:
- Eosinophilic infiltration
- Followed by neutrophils (more severe)
- Shed some hyperplasia
- Elongation of lamina propria papillae



33



36

EOSINOPHILIC ESOPHAGITIS
 Chronic immune-mediated disorder

US symptoms:

- Food impaction and dysphagia in adults
- Feeding intolerance or O/EED-like symptoms in children

Endoscopy:

- Rings in the upper and mid esophagus (beak-like strictures)

Microscopic:

- Increased eosinophils (in eosinophils with epithelium far from the OE)

Most patients are: atopic (atopic dermatitis, allergic rhinitis, asthma) or under physiological eosinophilia.

Tx:

- Dietary restriction (cow milk and soy products)
- Topical or systemic corticosteroids
- Refractory to PPIE (most patients do not respond to it, so we use corticosteroids)

35

COMPLICATIONS

- Esophageal stenosis
- Hematemesis
- Malabs
- Osteoporosis
- Barrett esophagus (precursor of CA)

It is one of the most common metabolic changes in the body

Hiatal hernia is characterized by separation of the diaphragmatic crura and protrusion of the stomach into the thorax through the resulting gap.

Typical symptoms: beak-like O/EED

34

CLINICAL FEATURES

- Most common over 40 years
- May occur in infants and children
- Heartburn, dysphagia
- Regurgitation of nonstinging gastric contents
- Rarely: Severe chest pain, mimicking MI

We must always think about heart disease

- Tx: proton pump inhibition

BARRETT ESOPHAGUS

*the normal type of cell in the esophagus is squamous epithelium but in this case it become intestinal type

- ? Barrett esophagus is a complication of chronic GERD that is characterized by *intestinal metaplasia within the esophageal squamous mucosa*.
- ↳ it mean the replacement of one cell type with a another type
- ? The incidence of Barrett esophagus is 10% of persons with symptomatic GERD. White males are affected most often and typically present between 40 and 60 years of age.
- ? Clinical Features Diagnosis of Barrett esophagus requires endoscopy and biopsy, usually prompted by GERD symptoms.

Why?

Because it considered as precancerous leasion, so the patient must be monitored or we may remove the esophagus

- ? Although the vast majority of esophageal adenocarcinomas are associated with Barrett esophagus, it should be noted that most persons with Barrett esophagus do not develop esophageal cancer.

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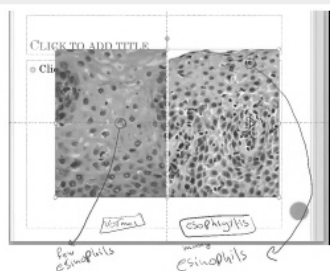
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ESOPHAGEAL ESOPHAGITIS

Classic: severe reflux disease

Symptoms:

- Food impaction and dysphagia in adults
- Feeling of fullness or GERD-like symptoms in children

Endoscopy:

Flag: is the type and mild esophagitis (looks like tracks)

Histomicroscopic:

- Inflammation with eosinophils with epithelium
- Not from the OEI

Most patients are: anergic (atopic dermatitis, allergic rhinitis, asthma) or under psychological stress.

Tx: - Dietary (avoidance) (low milk and soy products)

- Topical or systemic corticosteroids

- Refractory to PPI: (most patients do not respond to it, so we see corticosteroids)

35

COMPLICATIONS

- ↳ Esophageal stricture
- ↳ Hemorrhagic
- ↳ Melena
- ↳ Siderosis

↳ Barrett esophagus (precursor of Ca.)

↳ It is one of the most common metabolic

Histal hernia is characterized by separation of the

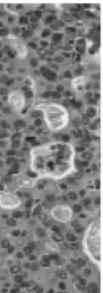
into the thorax through the existing gap.

↳ The symptoms look like GERD

? Barrett esophagus is recognized endoscopically as tongues or patches of red, velvety mucosa extending upward from the gastroesophageal junction. Above it by 3 cm because (normally in the GEJ we can see the type of gastric cell and esophageal cells)

? Histologically : documented gastric or intestinal metaplasia for diagnosis of Barrett esophagus. **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 is classified as low-grade or high-grade on the basis of morphologic criteria. Intramucosal carcinoma is characterized by invasion of neoplastic epithelial cells into the lamina propria.



? Ectopic infiltrative mucosa
? Microscopy:
Form: glandular mucosa

41

1- Esophageal adenocarcinoma typically arises in a background of Barrett esophagus and long-standing GERD.

- ? Risk of adenocarcinoma is tobacco use, obesity, and previous radiation therapy. Conversely, reduced adenocarcinoma risk is associated with diets rich in fresh fruits and vegetables.
- ? Esophageal adenocarcinoma occurs most frequently in whites and shows a strong gender bias, being seven times more common in men than in women.
- ? 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.
- ? It manifests with pain or difficulty in swallowing, progressive weight loss, chest pain, or vomiting.

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ESOPHAGEAL TUMORS

- Squamous cell carcinoma (most common worldwide)
- Adenocarcinoma (on the rise, half of cases)

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Exophytic infiltrative mass
Microscopy:
Form of glands and nuclei

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38

2- squamous cell carcinoma of the esophagus

It occurs in adults older than 45 years of age and affects males four times more frequently than females.

Risk factors include alcohol and tobacco use, poverty, caustic esophageal injury, achalasia, Plummer-Vinson syndrome (acceleration in squamous cell proliferation), frequent consumption of very hot beverages, and previous radiation therapy to the mediastinum. (patients with lymphoma)

In contrast to the distal location of most adenocarcinomas, half of squamous cell carcinomas occur in the middle third of the esophagus.

Clinical manifestations of squamous cell carcinoma of the esophagus begin insidiously and include dysphagia, odynophagia (pain on swallowing), and 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.

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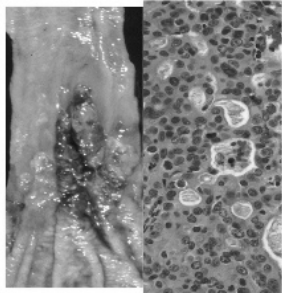
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Exo phytic infiltrative mass

Microscopy:

Form: glands and mucin

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ESOPHAGEAL TUMORS

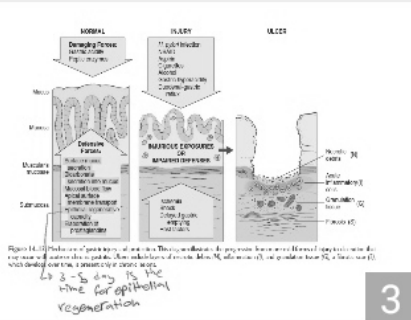
- Squamous cell carcinoma (most common)
- Adenocarcinoma (in the distal half of the esophagus)

INFLAMMATORY DISEASE OF THE STOMACH

- The gastric lumen is strongly acidic, with a pH close to one more than a million times more acidic than the blood.
- Multiple mechanisms have evolved to protect the gastric mucosa and disruption of any of these protective mechanisms will lead to Acute or chronic gastritis

The most common benign tumor in esophagus is leiomyoma

ina propria lymphocytes and presence of neutrophils above the epithelium, in direct contact with epithelial cells. This is the normal state of the gastrointestinal tract and




INFLAMMATORY DISEASE OF THE STOMACH

- The gastric lumen is strongly acidic, with a pH close to one more than a million times more acidic than the blood.
- Multiple mechanisms have evolved to protect the gastric mucosa and disruption of any of these protective mechanisms will lead to Acute or chronic gastritis

The most common benign tumor in esophagus is leiomyoma

STOMACH



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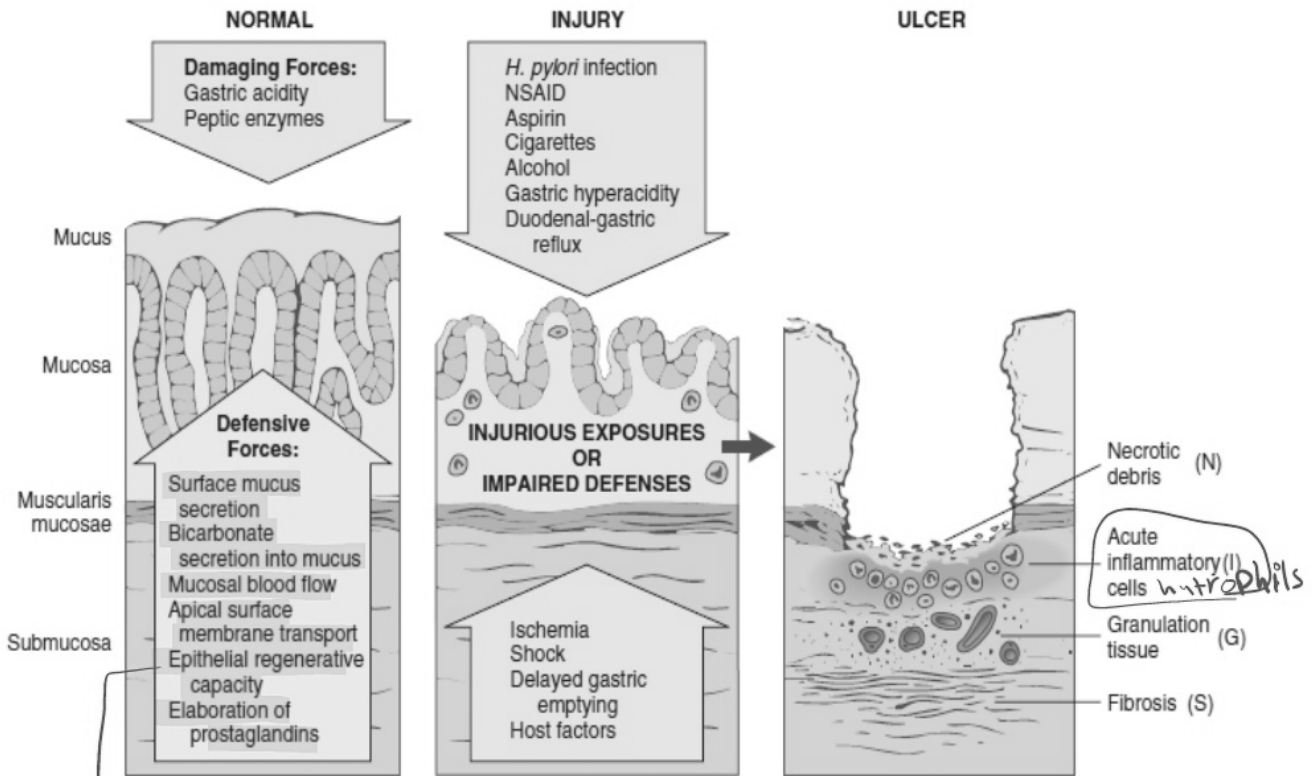


Figure 14-13 Mechanisms of gastric injury and protection. This diagram illustrates the progression from more mild forms of injury to ulceration that may occur with acute or chronic gastritis. Ulcers include layers of necrotic debris (N), inflammation (I), and granulation tissue (G); a fibrotic scar (S), which develops over time, is present only in chronic lesions.

↳ 3-5 day is the time for epithelial regeneration

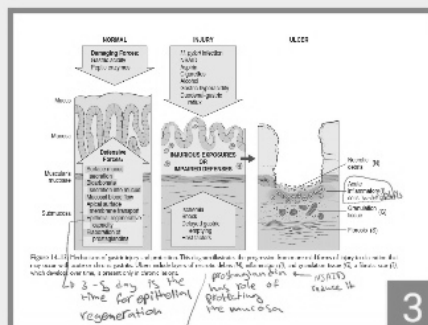
prostaglandin has role of protecting the mucosa

NSAID reduce it

Acute Gastritis

On histologic examination, lamina propria lymphocyte and plasma cells are prominent. The presence of neutrophils above the basement membrane—specifically, in direct contact with epithelial cells—is abnormal in all parts of the gastrointestinal tract and signifies active inflammation.

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INFLAMMATORY DISEASE OF THE STOMACH

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Acute Peptic Ulceration

- *Stress ulcers*, most commonly affecting critically ill patients with shock, sepsis, or severe trauma. ^{ICU patient}
- *Curling ulcers*, occurring in the proximal duodenum and associated with severe burns or trauma
- *Cushing ulcers*, arising in the stomach, duodenum, or esophagus of persons with intracranial disease, have a high incidence of perforation.
- Symptoms of gastric ulcers include nausea, vomiting, and coffee-ground hematemesis.

Chronic Gastritis

- Helicobacter pylori Gastritis**
- These organisms are curved bacilli and possess gastric bypass systems.
 - *H. pylori* gastritis are present in 50% of persons with chronic gastritis affecting the antrum.
 - In addition, the increased acid secretion that occurs in *H. pylori* gastritis may result in the slow disease of the stomach called duodenal *H. pylori* gastritis also can be associated with gastric cancer.
 - The incidence of *H. pylori* infection is declining in developed countries and appears to be declining in individuals still living.

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