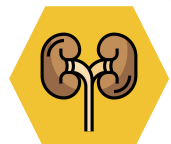
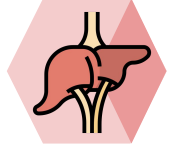


Esophageal Diseases



Objectives :

1. Describe the major components in the anatomy of the esophagus and physiology of swallowing.
2. Name the common presenting symptoms and complications of reflux disease (GERD).
3. List the main points in the management of GERD.
4. Differentiate between oropharyngeal and esophageal dysphagia.
5. Explain the differences between anatomical and functional esophageal disorders.
6. Explain the pathophysiology of common causes of dysphagia.
7. List the common presenting symptoms, appropriate investigations and treatment options in different causes of dysphagia.

Done by :

Leader: Salem AlAmmari

Members: Alanoud AlMufarrej

Renad alsuelmi.

Munira Almasaad.

Resources :

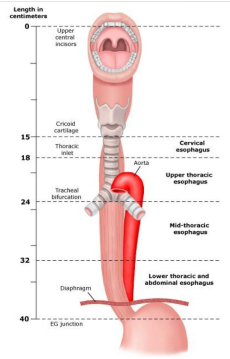
- 437 slides | [Different than of 436 lecture](#)
- Teamwork 436
- Doctor notes | [Prof.Saleh AlAmri & Dr.Nahlah Azzam](#)

Revised by:

Yazeed Al-Dossare

★ The Anatomy of the esophaguses :

- Located between the pharynx and the stomach.
- Muscular tube 20-25 cm long with UES & LES that help empty food between swallows while preventing regurgitation of stomach contents.
- Striated muscles make up the proximal 1/3.
- Smooth muscles make up the distal 2/3 .
- **How long does it take for a bolus to pass the entire esophagus?**
About 7-10 seconds.



★ Esophageal sphincters

Upper Esophageal Sphincter

Anatomy: A bundle of muscles at the top of the esophagus. The muscles of the UES are under conscious control, used when breathing, eating, belching, and vomiting. They keep food and secretions from going down the windpipe.

Physiology: Functions to prevent regurgitation into oral cavity and larynx and restricts airflow into the esophagus during inspiration. • Composed of striated muscles

Lower Esophageal Sphincter

Anatomy: A bundle of muscles at the low end of the esophagus, where it meets the stomach. When the LES is closed, it prevents acid and stomach contents from traveling backwards from the stomach. The LES muscles are not under voluntary control. located within the diaphragmatic hiatus with 2/3 in the abdominal cavity and 1/3 in the thoracic cavity. Can be displaced proximally by hiatal hernia.

Physiology: Maintains a high pressure zone between stomach and esophagus (barrier to reflux).

★ Physiology of Swallowing

~ UES opens.

~ Bolus is introduced into the esophagus.

~ Esophagus distends, causing a contraction proximal to distal. Propagating sequence

Two types of peristalsis in the esophagus

Primary peristalsis:

initiated in the pharynx by a swallow. These waves are slow moving and sweep the entire length of the esophagus.

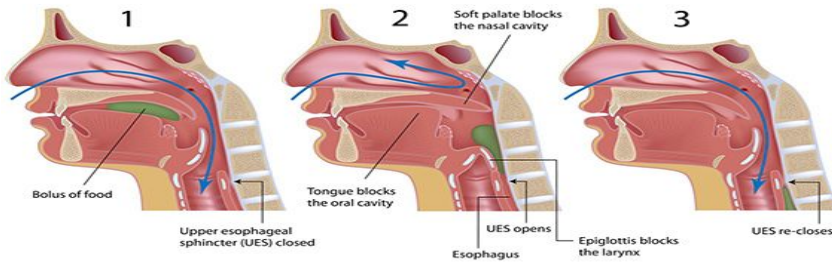
Secondary peristalsis:

initiated by esophageal distension by food. These waves are important to remove all the food from the esophagus if it has not been totally cleared by primary peristalsis.

LES opens at the end of swallow to allow the food to pass to the stomach..

★ Know the definition of dysphagia :

- First, Swallowing occurs through three phases:
1/Oral phase 2/Pharyngeal phase 3/Esophageal phase



- The esophagus is a fibromuscular tube (upper third is composed of skeletal muscles, and the rest is composed of smooth muscles) - It has two sphincters (UES: upper esophageal sphincter , LES: lower esophageal sphincter and it's augmented by the crus of diaphragm)
- Esophagus has two main functions: 1- Transport of food by peristalsis 2- Prevention of gastric regurgitation by LES/UES
- It is supplied by the vagus nerve & sympathetic trunk
- Dysphagia is sensation of obstruction of food passage or Difficulty in swallowing, has mechanical and neuromuscular causes.
- Odynophagia is painful swallowing.
- Both dysphagia and odynophagia will result in weight loss, eventually.

Oropharyngeal dysphagia	Esophageal dysphagia	
<ul style="list-style-type: none"> - Also called: transfer dysphagia - Arises from abnormalities of muscles, nerves or structures of the : <ol style="list-style-type: none"> 1-Pharynx 2-Upper esophagus 3-Upper esophageal sphincter. 4-Oral cavity - striated muscle disease seen in cases of: CVA (cerebrovascular accident), Motor neuron disease, polymyositis or myasthenia gravis. - The patient can't initiate the swallowing so he tries to swallow again and again until which will make him choke and cough resulting in nasal regurgitation 	<ol style="list-style-type: none"> 1-The esophageal body 2-Lower esophageal sphincter 3-Cardia <p>In esophageal dysphagia they manage to swallow but it stays in the esophagus</p>	
	Classified into mechanical and motor	
	<p>Mechanical dysphagia: may be due to: 1-Large food bolus 2-Intrinsic narrowing: A- Esophagitis B- Webs/rings C- Tumor D- Strictures 3-Extrinsic compression: a- Enlarged thyroid b- Diverticulum c- Left atrial enlargement</p>	<p>Motor dysphagia: -Smooth muscle disorders: 1- Scleroderma (replacement of esophageal muscles by fibrous tissue) 2- Achalasia loss of intramural neurons 3- Esophageal spasm inappropriate contractions</p>

● Esophageal Stricture

-Causes:

1. Benign peptic stricture
2. Malignant stricture
3. Iatrogenic

● Esophageal motility disorders causing dysphagia

- A) Esophageal spasms.
- B) Aperistalsis in esophagus (connective tissue disease)
- C) Achalasia

ESOPHAGEAL RINGS AND WEBS

Esophageal ring	Esophageal Web
Common in lower esophagus (above the LES)	Usually in upper esophagus (cervical)
Connective tissue + muscularis mucosa	Thin membrane
Caused by ?GERD	Unknown cause ?genetic
Schatzki's ring	*Plummer Vinson syndrome (triad)
Diagnosis: barium, endoscopy	
Treatment: endoscopic dilation if needed (persistent symptoms)	
PPI daily for GERD	Iron replacement therapy if PVS
No cancer risk	PVS has increased risk for squamous cell cancer in the esophagus, hypopharynx and oral mucosa.

Primary & Secondary Achalasia

Primary Achalasia

Pathophysiology

- Failure of lower esophageal sphincter to relax (lacking ganglion cells in the myenteric plexus in the distal esophagus).

- M=F

Etiology

- Immune mediated
- Genetic predisposition.

Secondary Achalasia

- Chagas disease.
- Parasitic Infection by *Trypanosoma cruzi* (common in latin America)
- Result in achalasia with features of diffuse enteric myenteric destruction, including megacolon, heart disease (cardiomyopathy), and neurologic disorders.
- **Diagnosis:** serology testing.
- **Treatment:** Anti trypanosoma like Benznidazole (GI symptoms managed symptomatically)

★ History of dysphagia Important

- Do you have problems initiating a swallow or do you feel food getting stuck a few seconds after Swallowing? (If there is a problem initiating a swallow it indicates Oropharyngeal dysphagia. If the food gets stuck a few seconds after swallowing it would indicate Esophageal dysphagia)
- 2. Do you cough or is food coming back through your nose after swallowing? (If yes, it indicates Oropharyngeal dysphagia)
- 3. Do you have problem swallowing solids, liquids, or both? (Problems in swallowing solids indicates mechanical dysphagia. Problems in swallowing both solids and liquids indicates motor dysphagia)
- 4. How long have you had problems swallowing and have your symptoms progressed, remained stable, or are they intermittent? (“Progressed” could indicate mechanical dysphagia due to a stricture or tumour. “Intermittent and sudden onset swallowing problems in healthy young patients” could indicate an Esophageal ring)
- 5. Could you point to where you feel food is getting stuck? (This is inaccurate and we cannot rely on it)
- 6. Do you have other symptoms such as loss of appetite, weight loss, nausea, vomiting, regurgitation of food particles, heartburn, vomiting fresh or old blood, pain during swallowing, or chest pain? (Associated symptoms are important to find out the cause. For example, dysphagia associated with heartburn could point towards GERD. While dysphagia associated with weight loss and anemia points towards cancer)
- 7. Do you have medical problems such as diabetes mellitus, scleroderma (Muscles of the esophagus are replaced with fibrous tissue), Sjorgen syndrome (Cannot produce saliva), overlap syndrome, AIDS, neuromuscular disorders (stroke, Parkinson’s, myasthenia gravis, muscular dystrophy, multiple sclerosis), cancer, Chagas’ disease or others?
- 8. Have you had surgery on your larynx, esophagus, stomach, or spine?
- 9. Have you received radiation therapy in the past?
- 10. What medications are you using now (ask specifically about potassium chloride, alendronate, ferrous sulfate, quinidine, ascorbic acid, tetracycline, aspirin and NSAIDs)? (Pill esophagitis can cause dysphagia.)
- Make sure to ask the following 4 cardinal questions in history of dysphagia:
 - Oropharyngeal or esophageal ?
 - Solid or solid and liquid ?
 - Intermittent or progressive?
 - Associated symptoms?
 - In Some patients no cause is identified (functional dysphagia)

★ Physical Examination (Usually negative)

Look for signs of:

- Bulbar palsy (Patient cannot move the tongue or fibrillation of the tongue and loss of tone is present)
- Dysarthria
- Ptosis (Associated with Myasthenia Gravis)
- Cerebrovascular accident
- Goiter
- Changes in skin (Might indicate Scleroderma or connective tissue disease)



Common diseases associated with dysphagia

1- achalasia

Characteristics

A motor disorder of esophageal smooth muscle

It is characterized by high LES pressure, that does not relax properly and Absent of distal peristalsis. which fails to relax during swallowing, and failure of peristalsis which leads to progressive dilatation.

Pathophysiology: Loss of intramural neurons of esophageal body & LES.

- There is idiopathic loss of intramural neurons of LES and esophageal body
- Most of cases are of unknown etiology.
- A very small number can be from Chagas disease, gastric carcinoma, or diseases that can infiltrate into the area, such as lymphoma.
- Usually occurs in young females

Clinical Presentation

- Presents with progressive dysphagia to both solids and liquids simultaneously with or without weight loss.
- Heartburn is absent, but some patients experience severe chest pain due to esophageal spasm
- Regurgitation and pulmonary aspiration develops.
- Achalasia predisposes to squamous carcinoma of the esophagus.

Diagnosis

A- Esophagogastroduodenoscopy (EGD) is done for alarm symptoms (to rule out cancer):

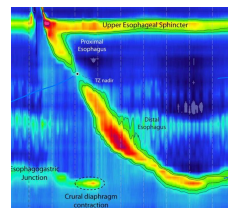
- o Onset after age 60
- o Anemia
- o Heme-positive stools,
- o >6-month duration of symptoms,
- o Weight loss.

B- CXR shows:

- o Absent gastric bubble
- o Wide mediastinum
- o Fluid level
- o Barium esophagography is very accurate and shows dilation of the esophagus, which narrows into a

“beak like” at terminal part.

C- The most accurate test overall (gold standard) is esophageal manometry. Manometry shows increased lower esophageal (LES) resting pressure, with no or partial relaxation, low amplitude contraction, no propagating (simultaneous).



Manometry is Gold standard
Not included but for you
The blue stand for low pressure
and other color for high pressure.

Management (There is no cure)

- Drugs: Antimuscarinic agents / Nitroglycerin (Relaxes the esophageal muscles) / Calcium channel blockers. (In patients who cannot tolerate surgery)
- Endoscopic dilatation (pneumatic dilation): Dilatation of the esophageal sphincter using a fluoroscopically positioned balloon improves symptoms in 80% of patients (treatment of choice) ,
- Botulinum toxin injections into the LES are used in those patients not willing to undergo pneumatic dilation, or in whom it has failed. - POEM (Peroral Endoscopic Myotomy)
- Surgical myotomy: Performed either laparoscopically or as an open operation, this is extremely effective.
- Both dilatation and myotomy may be complicated by GERD, and for this reason myotomy is often augmented by an anti-reflux procedure and a PPI is given.

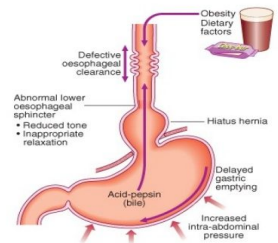
★ PSEUDOACHALASIA

- Achalasia symptoms and similar diagnostic findings. • Due to Malignancy (tumors in the gastric cardia or those infiltrating the myenteric plexus
- like adenocarcinoma of gastroesophageal junction, pancreatic, breast, lung, or
- hepatocellular cancers) • When to suspect (rapid onset over weeks-months, elderly and risk factors for cancer) • Need to get CT scan or endoscopic US for further workup.

2-Gastro-esophageal reflux disease:

● Characteristics

1. Reflux esophagitis: Damaged esophageal mucosa by reflux of gastric content.
2. Pathophysiology, Antireflux mechanism includes:
 - A) LES
 - B) Esophageal peristalsis
 - C) Resistant of esophageal mucosa.
 - D) Saliva
 - E) Gastric peristalsis



- Gastro-esophageal reflux causing in heartburn affects approximately 30% of the general population - Occasional episodes of gastro-esophageal reflux are common in healthy individuals.

- Reflux is normally followed by: esophageal peristaltic waves > clear the gullet, alkaline saliva neutralizes residual acid > symptoms do not occur. - Gastro-esophageal reflux disease develops when the esophageal mucosa is exposed to gastroduodenal contents for prolonged periods of time, resulting in symptoms and, in a proportion of cases, esophagitis

Damage depends on:

- Refluxed Material (The materials acidity)
- Duration of reflux/Material (The time the refluxed material stays in the esophagus + how many refluxes you experienced)

Clinical Manifestation of GERD:

- **heartburn and regurgitation (Most common symptoms)** , often provoked by bending, straining or lying down.
- Dysphagia
- Atypical chest pain which may be severe and can mimic angina and may be due to reflux-induced esophageal spasm.
- ‘Water brash’, which is salivation due to reflex salivary glands stimulation as acid enters the gullet, is often present
- Patient is often overweight
- Waking at night by choking as refluxed fluid irritates the larynx.
- Odynophagia (pain during swallowing)
- Hoarseness (‘acid laryngitis’)
- Recurrent chest infections
- **Chronic cough**
- Laryngitis. -Asthme. -Dental erions

What causes GERD :
 Obesity
 Sleeve
 Pathology in LES prolong relaxation
 Hiatal hernia
 Drugs
 Pregnancy

Factors involved in GERD:

1-Abnormalities of LES:

Loss of LES pressure:

1. TLESR (Transient lower esophageal sphincter relaxation)
2. Sustained
3. Increased Intra-gastric pressure
4. Scleroderma
5. Surgical resection

The lower esophageal sphincter is tonically contracted under normal circumstances and relaxes only during swallowing

- **Dietary fat, chocolate, alcohol and coffee** > **relax LES and provoke** symptoms - LES normally has circulatory muscles which is augmented by diaphragm to prevent the reflux .. this is lost most of the time in GERD

2-Hiatus hernia:

- Hiatus hernia(GERD is particularly associated with sliding hiatal hernia) causes reflux because of: a-The loss of pressure gradient between the abdominal and thoracic cavities. When LES herniates into thoracic cavity the pressure in negative > dilation of esophagus b-the oblique angle between the cardia and esophagus disappears.

the relationship between the presence of a hernia and symptoms is poor: a-Hiatus hernia is common in individuals who have no symptoms

b-some symptomatic patients have only a very small or no hernia

- Most of the who have Hiatus hernia develop

1. Esophagitis
2. Barrett’s esophagus
3. Peptic strictures



3-Delayed esophageal clearance (aperistalsis):

- Defective esophageal peristaltic activity is commonly found in patients who have esophagitis.

- It is a primary abnormality, since it persists after esophagitis has been healed by acid suppressing drug therapy.

- Poor esophageal clearance leads to increased acid exposure time.

● **Factors involved in GERD (Continued):**

4-Delayed gastric emptying:	<ul style="list-style-type: none"> ○ Mechanical ○ obstruction ○ Motor
5-Reduced saliva	Sjogren's syndrome
6-Increased intraabdominal pressure:	<ul style="list-style-type: none"> - Pregnancy and obesity are established predisposing causes. - Weight loss may improve symptoms

● **Complications: (the doctor didn't go into details)**

Benign esophageal stricture:	<p>-Fibrous structures can develop because of long standing esophagitis, especially in: ● Elderly ● Those who have poor peristaltic activity</p> <p>Present with:</p> <p>A- dysphagia (typical presentation) that is worse for solids than for liquids</p> <p>B- Bolus obstruction following ingestion of meat causes absolute dysphagia</p> <p>C- heartburn is common but not invariable; many elderly patients presenting with strictures have no preceding heartburn.</p> <p>Diagnosis: is by endoscopy, when biopsies of the stricture can be taken to exclude malignancy. Endoscopic balloon dilatation is helpful. Treatment: long-term therapy with a PPI drug at full dose should be started to reduce the risk of recurrent esophagitis and stricture formation The patient should be advised to chew food thoroughly, and it is important to ensure adequate dentition</p>
Bleeding	-
Barrett's esophagus:	<p>-Barrett's esophagus is a pre-malignant condition, in which the normal squamous lining of the lower esophagus is replaced by columnar mucosa (columnar with goblet cells lined esophagus) that may contain areas of intestinal metaplasia.</p> <p>-Barrett's esophagus is an adaptive response to chronic gastro-esophageal reflux and is found in 10% of patients undergoing gastroscopy for reflux symptoms.</p> <p>-it is often asymptomatic until discovered when the patient presents with esophageal cancer</p> <ul style="list-style-type: none"> - risk of esophageal cancer is 40–120-fold increased - The prevalence is increasing, and it is more common in: <ul style="list-style-type: none"> A- men (especially whites) B- obese and those over 50 years of age C- Smoking <p>Diagnosis requires multiple systematic biopsies to detecting intestinal metaplasia and/or dysplasia. Management: treatment is only indicated for symptoms of reflux or complications, such as strictures and follow up</p> <p>1-Endoscopic therapies, such as:</p> <ul style="list-style-type: none"> ● radiofrequency ablation or photodynamic therapy used only for those with dysplasia or intraconal cancer like patients with CLO without dysplasia should undergo endoscopy at 3–5-yearly intervals ● low-grade dysplasia at 6–12-monthly intervals <p>2- esophagectomy or endoscopic therapy with a combination of endoscopic resection (ER)</p> <ul style="list-style-type: none"> ● For those with high-grade dysplasia (HGD) or intraconal carcinoma <p style="color: green;">One risk factor is not indicated for endoscopy except family history</p>

● *Complications: (Continues)*

<p>Anemia:</p>	<p>- Iron deficiency anemia can occur because of occult blood loss from long-standing esophagitis.</p> <p>- Most patients have a large hiatus hernia and bleeding can stem from subtle erosions in the neck of the sac ('Cameron lesions').</p> <p>- hiatus hernia is very common and other causes of blood loss, particularly colorectal cancer, must be considered in anemic patients, even when endoscopy reveals esophagitis.</p>
<p>Esophagitis:</p>	<p>range of endoscopic findings:</p> <ol style="list-style-type: none"> 1. ranges from mild to severe redness 2. bleeding 3. Ulceration with stricture formation 4. although appearances may be completely normal; There is a poor correlation between symptoms and histological and endoscopic findings. <p>Patients diagnosed with erosive esophagitis are recommended to start proton pump inhibitors.</p>

● *Treatment*

- Antireflux measure.
- Acid suppressing agent.ggg
- Surgery

● *Diagnosis*

- Endoscopy (Gold standard)
 - barium swallow
 - 24 hour pH monitoring and motility
- The diagnosis is often made using mainly:**
1. Typical symptom presentation.
 2. Antisecretory responsiveness

● *Management*

<p>1-Lifestyle advice, including:</p>	<p>2-Medication:</p>	<p>3- laparoscopic anti-reflux surgery</p>
<p>A- weight loss B- avoidance of dietary items that the patient finds worsen symptoms C- elevation of the bed head in those who experience nocturnal symptoms D- not sleeping after a meal for at least 3 hours E- smoking cessation</p>	<p>A- PPIs, which are usually effective in resolving symptoms and healing esophagitis B- domperidone, when dysmotility features are prominent, can be helpful C- antacids and alginates can also provide symptomatic benefit D- H2-receptor antagonist drugs also help resolving symptoms without healing esophagitis</p>	<p>- Rarely required</p>

3-Eosinophilic Esophagitis

Overview	<p>A type of white blood cell (eosinophil) builds up in the lining of the tube that connects your mouth to your stomach (esophagus). This buildup, which is a reaction to foods, allergens or acid reflux, can inflame or injure the esophageal tissue. Damaged esophageal tissue can lead to difficulty swallowing or cause food to get stuck when you swallow. Eosinophilic esophagitis is a chronic immune system disease. It has been identified only in the past two decades, but is now considered a major cause of digestive system (gastrointestinal) illness. History of allergies is seen in >50% of these patients.</p>
Diagnosis	<p>Endoscopy:</p> <ul style="list-style-type: none"> ● Can be normal ● Strictures ● Linear furrows ● Trachealization of the esophagus. <p style="text-align: right;">**BIOPSY shows 15 or more eosinophils/hpf on microscopy (from proximal and distal esophagus)</p>
Treatment	<ul style="list-style-type: none"> ● PPI first for 8 weeks then repeat Endoscopy if Eosinophils is still 15 or more: ● Corticosteroids (swallowed fluticasone/ budesonide). ● If symptoms persist repeat endoscopy if there's a ring try dilation

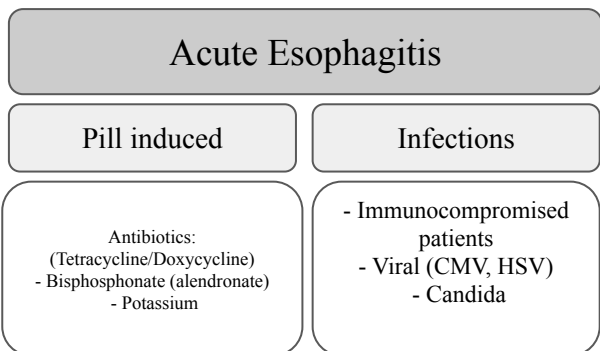
4- Esophageal cancer

Characteristics	<ul style="list-style-type: none"> - Disease more in Males > 50 Years -Causation factors: 1) Excess alcohol 2) Cigarette smoking 3)Fungal toxin. Mucosal damage: 1) Hot tea 2) Radiation induced stricture 3) Barrett's esophagus 4) Esophageal web. -15% affect the upper 1/3 , 45% affect the middle 1/3 , 40% affect the lower 1/3 -There are two pathologic types: squamous cell carcinoma (>75% of cases) and adenocarcinoma
A- SCC	<ul style="list-style-type: none"> - Incidence is higher in African-American men than in other groups. - Most common locations are the upper- and mid thoracic esophagus. About one-third may be in distal 10 cm of esophagus. - Risk factors are alcohol and tobacco use, diet (nitrosamines, betel nuts, chronic ingestion of hot foods and beverages such as tea), human papillomavirus, achalasia, Plummer–Vinson syndrome”esophageal web”, caustic ingestion, and nasopharyngeal carcinoma.
B-adenocarcinoma	<ul style="list-style-type: none"> - More common in Caucasians and men (5:1 over women). - Most common in distal third of the esophagus/gastroesophageal junction (in 80% of cases). - Risk factors: GERD and Barrett's esophagus are the main risk factors. - The prognosis is poor: Five-year survival rate is about 30% to 40% if locoregional disease, but only 5% if distant metastasis present at diagnosis.

Clinical features	<ol style="list-style-type: none"> 1. Dysphagia- most common symptom (initially solids only, then progression to liquids) 2. Weight loss - second most common symptom 3. Odynophagia (pain with swallowing) - a late finding that suggests extraesophageal involvement (mediastinal invasion) 4. Tracheoesophageal or Broncho-esophageal fistula (The tumor penetrates through the esophagus) 5. Regurgitation 6. Anorexia 7. Aspiration pneumonia, respiratory symptoms due to involvement of tracheobronchial tree 8. Chest pain 9. Hematemesis, hoarseness of voice (recurrent laryngeal nerve involvement) <p>- Usually patients with esophageal cancer are elderly complaining of progressive dysphagia (getting worse with time), more common with solid than liquid.</p>
Diagnosis	<ol style="list-style-type: none"> 1. Barium swallow useful in evaluation of dysphagia. A presumptive diagnosis can be made. 2. Upper endoscopy with biopsy and brush cytology is required for definitive diagnosis. It confirms the diagnosis in 95% of cases. 3. After confirming the diagnosis of esophageal cancer by endoscopy with biopsy, Transesophageal Ultrasound helps determine the depth of penetration of the tumor and is the most reliable test for staging local cancer. 4. Full metastatic workup (e.g., CT scan of chest/abdomen, CXR, bone scan).
Treatment	<ol style="list-style-type: none"> 1. Palliative is the goal in most patients because the disease is usually advanced at presentation. 2. Surgery (esophagectomy) if localized may be curative for patients with disease in stage 0, 1, or 2A. Prognosis is poor. 5 Y survival

4-Infectious Esophagitis:

- Viral esophagitis (could be caused by HSV, CMV , or Varicella Zoster)
- Bacterial
- Fungal
- Presents with Dysphagia, Odynophagia (The cardinal symptom) (Patients usually present with Odynophagia) and bleeding
- Diagnosed by barium swallow, endoscopy and biopsy



5-Diverticula (outpouching of the wall of the esophagus):

- Zenker diverticulum (upper esophagus)
- Epiphrenic diverticulum (lower esophagus)
- Usually asymptomatic, or could present with regurgitation of the food consumed several days ago (because the food accumulates in the diverticula)
- dysphagia (Large diverticula can cause dysphagia by compression of the esophagus)

What is the Zenker diverticulum ?
 Sac like, outpouching of the mucosa and submucosa in the area of muscular weakness in the hypopharynx between the inferior constrictor and cricopharyngeus muscle, above the upper esophageal sphincter.
Cause? Hypertensive / noncompliance of upper esophageal sphincter.

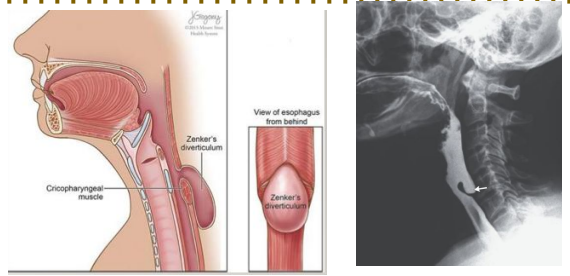
ZENKER'S DIVERTICULUM

Symptoms:

- Oropharyngeal dysphagia symptoms
- Halitosis
- Food undigested on the pillow at night or after meals
- Weight loss happens in late stages (the diverticulum becomes big and obstructs the esophagus).

Diagnosis: • Video swallow testing or modified Barium swallow.

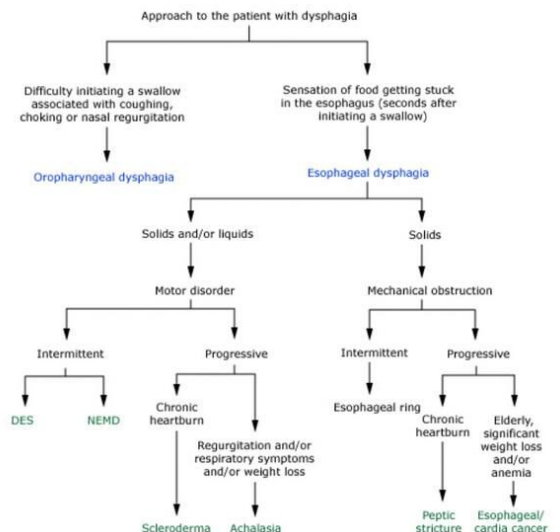
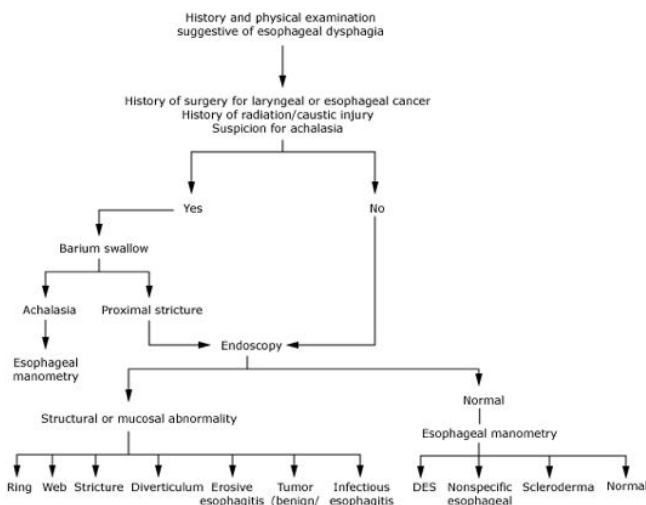
Treatment: • Surgical



6-Diffuse Esophageal Spasm (corkscrew esophagus)

- DES is a hypermotility disorder of the esophagus
 - Seen most often in women and is often found in patients with multiple complaints.
 - The basic pathology is related to a motor abnormality of the esophageal body that is most notable in the lower two thirds of the esophagus
 - the esophageal contractions are repetitive, simultaneous, irregular and of high amplitude
- Symptoms and Diagnosis
- The clinical presentation of DES is typically that of chest pain and dysphagia
 - These symptoms may be related to eating or exertion and **may mimic angina.**
 - Patients will complain of a squeezing pressure in the chest that may radiate to the jaw, arms, and upper back.
 - The symptoms are often pronounced during times of heightened emotional stress
 - Regurgitation of esophageal contents and saliva is common, but acid reflux is not
 - acid reflux can aggravate the symptoms, as can cold liquids
 - irritable bowel syndrome and pyloric spasm, may accompany DES, whereas other gastrointestinal problems, such as gallstones, peptic ulcer disease, and pancreatitis, all trigger DES
 - The diagnosis of DES is made by an esophagram and manometric studies

★ Mind maps :



★ Important cases :

1. Young lady with progressive dysphagia to solids and liquids with weight loss.

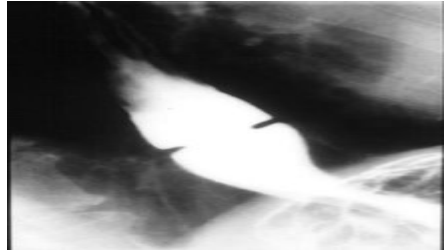
Sign: bird peak sign

Diagnosis: achalasia



2. Young healthy Patient comes intermittent solid dysphagia with sudden onset from time to time (indicates esophageal ring.)

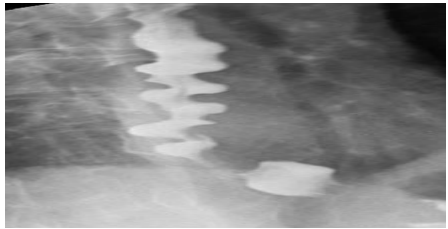
Diagnosis: Esophageal ring



3. young lady has intermittent dysphagia with solid and liquid which associated with angina like pain

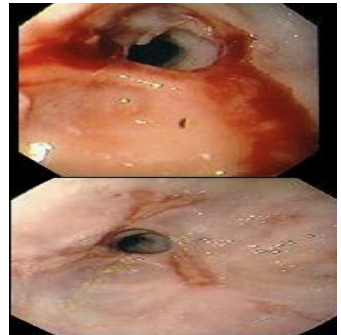
Sign: corkscrew esophagus

Diagnosis: diffuse esophageal spasm



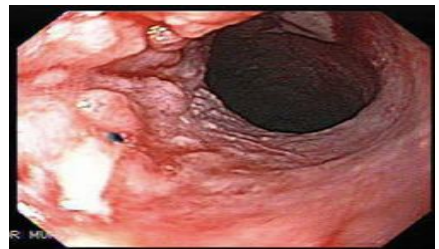
4. Young lady with intermittent solid dysphagia

Diagnosis: Reflux esophagitis with stricture formation



5. Old man with progressive dysphagia to solid only with weight loss

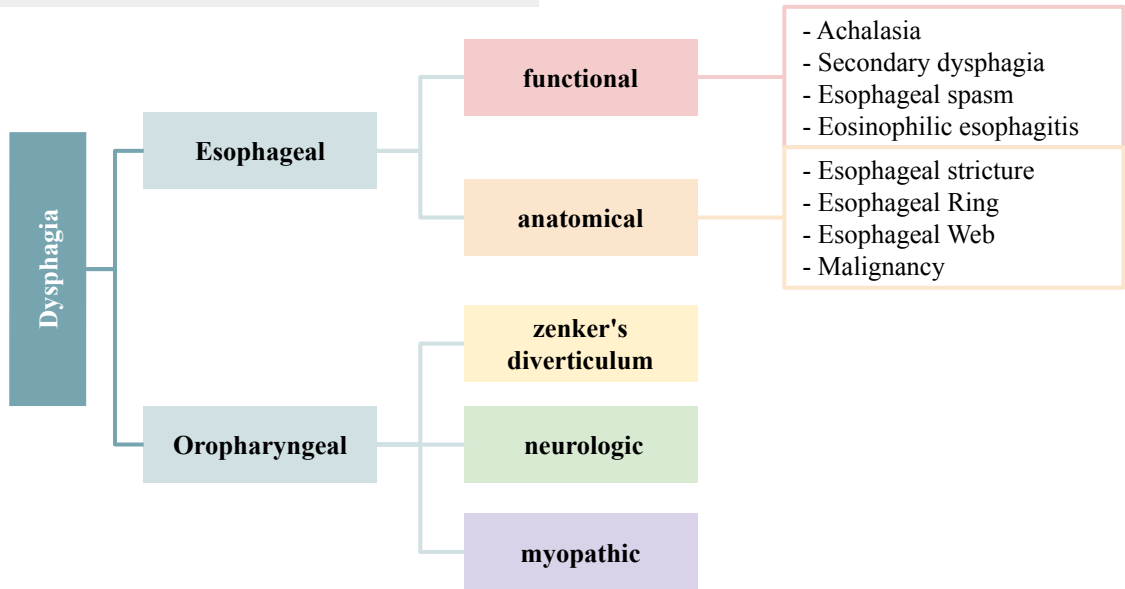
Diagnosis: tumor



Summary

GERD		
Symptoms		
typical	Atypical	Extra-esophageal
<ul style="list-style-type: none"> - Heartburn - Regurgitation 	<ul style="list-style-type: none"> - Nausea - Globus sensation - Chest pain - Early satiety - Bloating and belching 	<ul style="list-style-type: none"> - Sinusitis/ recurrent otitis media - Cough - Dental erosion - Laryngitis - asthma
Diagnosis		
Clinical “mainly”	Endoscopy	Ambulatory reflux monitoring (PH study)
<ul style="list-style-type: none"> - Typical symptoms - Ant-secretory responsiveness 	<ul style="list-style-type: none"> - Present of alarming symptoms - Non-cardiac chest pain - Screening high risk patients for Barrett,s - Non-responsive to PPI 	<ul style="list-style-type: none"> - Suspected GERD with normal endoscopy “to confirm GERD” - Persistent symptoms even with PPI “To R/o other causes”
Management		
1- Lifestyle changes	2- Medical Therapy	3-Surgical Therapy
<ul style="list-style-type: none"> - Weight loss - Head of bed elevation at night - Avoidance of meals 2-3 hours before bedtime for patients with nocturnal GERD - Smoking Cessation - Culprits: fatty foods, caffeine, chocolate, ETOH, spicy foods, carbonated beverages, peppermints 	<ul style="list-style-type: none"> - PPI - antihistamine 	<ul style="list-style-type: none"> - fundoplication
Complications		
Erosive esophagitis	Barrett,s esophagus	Peptic stricture

Summary



Disease	Symptoms	Diagnosis	Management
Achalasia	<ul style="list-style-type: none"> - Dysphagia to solids and liquids - Regurgitation of undigested food. - Heartburn - Chest pain - Weight loss 	<p>1-Barium swallow Dilated distal esophagus, Tight LES, BIRD BEAK APPEARANCE</p> <p>2- endoscopy Normal with some resistance at the LES, Dilated esophagus, Retained saliva, liquid, and food in the esophagus without mechanical obstruction from stricture or mass</p> <p>3- Esophageal Manometry To <u>confirm</u> the diagnosis</p>	<p>1- Medical therapy Calcium channel blockers, nitrate</p> <p>2- Endoscopic therapy Pneumatic dilation, Botox injection at LES, POEM</p> <p>3- Surgical Heller,s myotomy</p>
Eosinophilic esophagitis	<ul style="list-style-type: none"> - Commonly present with food impaction - Main symptom is dysphagia. - extra-esophageal allergic manifestation 	<p>1- Endoscopy Can be normal, Strictures, Linear furrows, Trachealization of the esophagus.</p> <p>2- BIOPSY 15 or more eosinophils/hpf on microscopy</p>	<p>PPI first for 8 weeks then repeat Endoscopy if Eosinophils is still 15 or more => Corticosteroids (swallowed fluticasone/ budesonide). => repeat endoscopy if there's ring to dilate</p>

Questions Doctor slides

1- A 42 y/o male presents for evaluation of heartburn. He denies any dysphagia or weight loss. He has no other medical conditions and is currently not taking any medications. You suspect that he may have GERD. Which of the following describes the role of upper endoscopy in the evaluation of this patient?

- A. He should undergo an Esophagogastroduodenoscopy with biopsy to ensure a more serious condition is not missed.
- B. He should undergo an Esophagogastroduodenoscopy only if he has no improvement in his symptoms after an empiric trial of twice daily PPI therapy.
- C. He should undergo ambulatory PH monitoring while on PPI therapy to ensure the medication is working.
- D. He should undergo both an Esophagogastroduodenoscopy and ambulatory PH monitoring prior to the initiation of any therapy.

2- A 45-year-old man is evaluated for a 2-month history of a burning sensation starting in his stomach and radiating into his chest, usually occurring 4 to 5 times weekly. He says that he usually eats dinner late and then goes to sleep. He often wakes up with a sour taste in his mouth. He reports no dysphagia or unintentional weight loss. He takes no medication. On physical examination, vital signs are normal; BMI is 34. The remainder of the examination, including abdominal examination, is unremarkable. What would be the next step in his management?

- A. PH testing
- B. Barium esophagography
- C. Empiric trial of proton pump inhibitor
- D. Esophagogastroduodenoscopy

3- A 56-year-old woman is evaluated for chest discomfort after meals occurring intermittently over the preceding month. She describes a sensation of heaviness on her chest, and says that she also notices this pain sometimes while walking up stairs. She reports no nausea, dysphagia, or reflux. She has been taking ranitidine with minimal relief of symptoms. She also takes atorvastatin for hyperlipidemia. She smokes half a pack of cigarettes daily. On physical examination, her blood pressure is 140/90 mm Hg and other vital signs are normal; BMI is 34. The remainder of the examination, including abdominal examination, is unremarkable. What is your next step?

- A. Barium esophagography
- B. Electrocardiography
- C. Empiric trial of a proton pump inhibitor
- D. Esophagogastroduodenoscopy

4- A 75-year-old man is evaluated for progressive dysphagia of 8 months' duration for both solids and liquids and the necessity to induce vomiting several times each month to relieve his symptoms. He also has experienced chest pain and heartburn symptoms. He has lost approximately 6 kg (13 lb) of weight over the preceding 3 months and a total of 9 kg (20 lb) since his symptoms began. He has a long history of cigarette and alcohol use. His medical history and review of systems is otherwise negative. He has no travel history outside the northeastern United States. He takes no medication.

On physical examination, vital signs are normal; BMI is 23. He appears thin and tired. The remainder of the physical examination is unremarkable. Esophagogastroduodenoscopy findings reveal retained saliva, liquid, and food in the esophagus without mechanical obstruction. Manometry demonstrates incomplete lower esophageal relaxation and aperistalsis. What is the most likely diagnosis?

- A. Achalasia
- B. Pseudoachalasia
- C. EOE
- D. Chagas disease

Questions Doctor slides

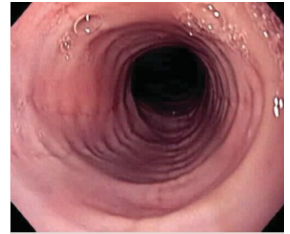
5- A 52-year-old man is evaluated for dysphagia of 3 months' duration. He reports regurgitating undigested food soon after eating solid food, occasional coughing and choking after swallowing, and chronic halitosis. He reports no weight loss or chest pain. He drinks two beers weekly and does not smoke. On physical examination, vital signs are normal; BMI is 25. The remainder of the examination, including abdominal examination, is unremarkable. What is your next step?

- A. Barium esophagram
- B. Esophagogastroduodenoscopy
- C. Manometry
- D. PH study

6- A 25 year old man is evaluated for a sensation of solid food "sticking" several times per week. He reports that he sometimes forces himself to vomit when he feels food "stuck" in the esophagus, but he has never gone to the emergency department. He takes a multivitamin and is generally healthy. On physical examination, vital signs and other findings, including those of an abdominal examination, are unremarkable.

Esophagogastroduodenoscopy findings are shown. Biopsies of the esophagus show more than 18 eosinophils/hpf. Which of the following is the most likely diagnosis?

- A. Achalasia
- B. Eosinophilic esophagitis
- C. Gastroesophageal disease
- D. Pill induced esophagitis.

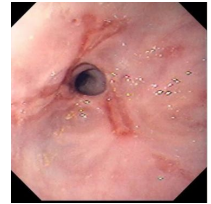


Answer:
1-B
2-C
3-B
4-B
5-A
6-B

Questions

1- 56 Y/o smoker male known to have GERD for the past 10 years managed by medication came to your clinic complaining of difficulty of swallowing solid food . Endoscopy was done and you found the following. What is most likely the diagnosis?

- A. Erosive esophagitis
- B. Barrett,s esophagus
- C. Peptic stricture
- D. Achalasia



2- which one of the following is associated with Plummer Vinson syndrome?

- A. Eosinophilic esophagitis
- B. Achalasia
- C. Esophageal Ring
- D. Esophageal Web

3- schatzki,s ring increase the risk for which of the following?

- A. squamous cell cancer
- B. Adenocarcinoma
- C. Both A and b
- D. Non

4- postmenopausal women came with acute onset of odynophagia she uses alendronate for osteoporosis. After doing an endoscopy you found a kissing ulcer. What is most likely the cause for her odynophagia?

- A. Pill induced Acute Esophagitis
- B. Infectious Acute Esophagitis
- C. Acid reflux
- D. Tumors

5- which one of the following is an endoscopic finding in Eosinophilic esophagitis?

- A. LES resistance
- B. Trachealization of the esophagus
- C. Dilated esophagus.
- D. Kissing ulcer

6- patient complaining of chest pain, heartburn and Dysphagia to solids and liquids.What is the diagnostic modality shown in this picture?

- A. Barium swallow
- B. Endoscopy
- C. Video swallow testing
- D. C.T with contrast



Questions

7- what is the name of this sign?

- A. Apple core appearance
- B. Bird beak appearance
- C. Corkscrew
- D. Nut cracker

8- what is most likely the diagnosis in Q6?

- A. Esophageal stricture
- B. Esophageal ring
- C. Achalasia
- D. Esophageal spasms

Answer:

- 1-C
- 2-D
- 3-D
- 4-A
- 5-B
- 6-A
- 7-B
- 8-C