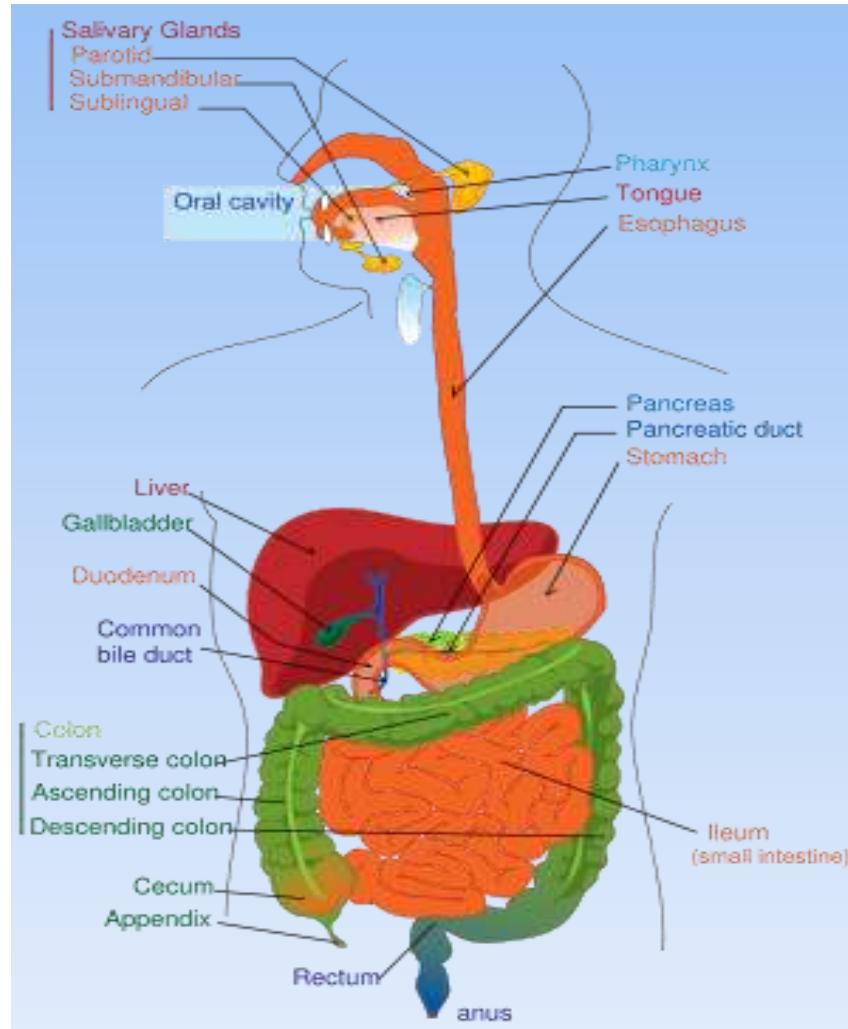


Gastrointestinal Tract disorders



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Functions of the Digestive system

1. Break down food particles into molecular form for digestion.
2. Absorption
3. elimination

Chewing and Swallowing : causes reflex **salivation** from three pairs of gland ; the **parotid, submaxillary, sublingual gland**.

Gastric function :

1. stomach **store and mix the food with secretion**.
2. Its **secretes** a high acidic fluid (**HCL**) secreted by the glands of the stomach. In order to :
 - **break down food**
 - **destruction** of the most ingested **bacteria**
 - stomach produce 2.4L of gastric secretions.
- 3- Its secretes **Intrinsic factor** which combines with **vitamin B12** (absorbed in ileum)





Small intestine function :

Digestion continue in small intestine (Duodenum).

Pancreatic Secretion : have an **alkaline** PH because a high concentration of bicarbonate . its **secrete** ; **Trypsin , Amylase, Lipase**

Bile (secreted by liver and stored in gallbladder) : **emulsifying ingested fats.**

Types of contraction occur regularly in small intestine:

1. **Segmentation** : mixing waves that move the intestinal contents back and forth.
2. intestinal **peristalsis** : propels the element of small intestine toward colon.

Colonic Function : absorption of water and elimination of waste product



Assessment of Digestive system

1. Health history (focusing on the symptoms common to GI dysfunction. including :

- Pain** : character. Duration, frequency, location, pattern,
- Indigestion:**
- Intestinal **Gas** : (belching : expulsion of gas from stomach through the mouth).or Flatulence (expulsion of gas from the rectum).
- Nausea and vomiting**

Nature of Vomitus

Color/Taste/Consistency

Yellowish or **greenish**

Possible Source

May contain **bile**

Medication—senna

Bright red (arterial)

Hemorrhage, **peptic ulcer**

Dark red (venous)

Hemorrhage, **esophageal**
or **gastric varices**

"Coffee grounds"

Digested blood from slowly
bleeding **gastric** or **duodenal ulcer**

Undigested food

Gastric tumor

Ulcer, **obstruction**

Bile

"Bitter" taste

Gastric contents

"Sour" or **"acid"**

Intestinal obstruction

Fecal components

Change in Bowel habits and stool characteristics



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2. Physical Examination :

3. Diagnostic evaluation : including :

Stool test : analysis. Culture

Breath Test :

- **hydrogen breath**: to evaluate carbohydrate absorption and to diagnosis of bacterial overgrowth in the intestine and short bowel syndrome.
- **Urea breath** : to detect presence of helicobacter pylori .

4. Abdominal Ultrasonography : its non invasive diagnosis technique, to detect size of organ

5. DNA testing : to detect who in risk for cancer

6. Imaging studies : x-ray, CT scan , MRI

Endoscopic examination

- ❑ **Upper Gastrointestinal fibroscopy**
- ❑ Lower GI scopy as Anoscopy, Proctoscopy, and Sigmoidoscopy
- ❑ **Fiberoptic colonoscopy**
- ❑ **Laparoscopy**

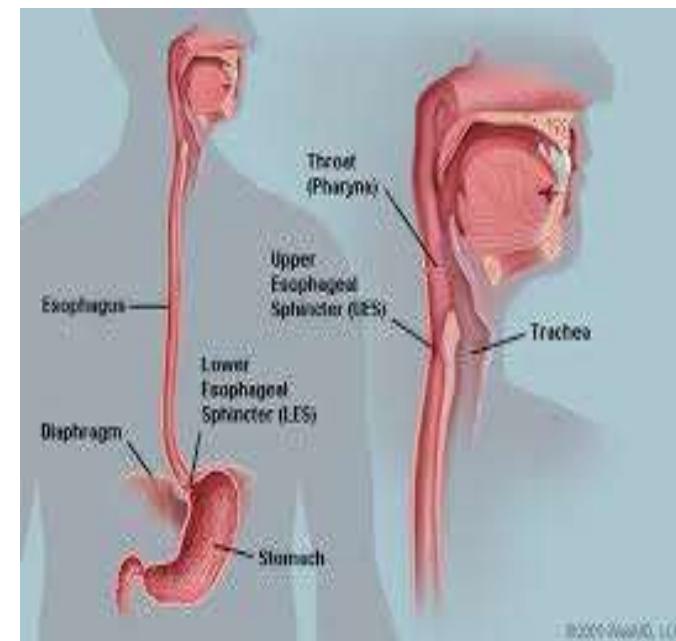


Esophagus

Definition :

Its mucous- lined **muscular** tube that carries food from the mouth to the stomach . its begin at the base of the diaphragm and ends about 4 cm below the diaphragm . it **has 2 sphincters** :

- upper : hypopharyngeal sphincter
- lower : Gastroesophageal sphincter



Disorders of Esophagus

1- **Dysphagia** : (difficulty swallowing)

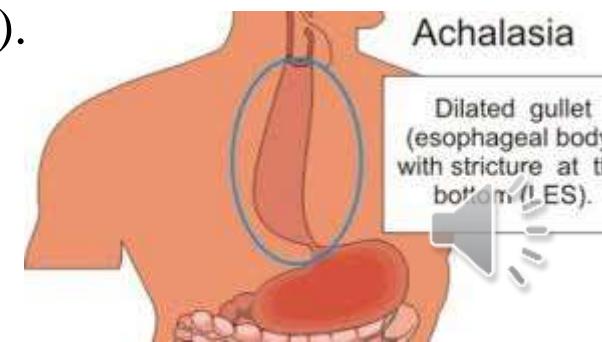
- ❑ Its vary from discomfort to acute pain (Odynophagia)
- ❑ **Causes** : motility disorders (Achalasia, diffuse **spasm**). Gastroesophageal reflux. Hiatal hernia , diverticulitis, perforation, chemical burns, **tumor**.

2- **Achalasia** :

- ❑ It is **absent or ineffective peristalsis** of the distal esophagus, accompanied by failure of the esophageal sphincter to relax.
- ❑ **Clinical manifestation** ; dysphagia, food sticking in lower portion of the esophagus. Food regurgitated, chest pain and heartburn (pyrosis)
- ❑ **Assessment and Diagnosis** ; X-ray (esophageal dilatation) **Barium swallow** , **CT scan, endoscopy** .

Management :

- ❑ Eat slowly
- ❑ Calcium channel blocker and nitrates (decrease esophageal pressure)
- ❑ Botox injection into esophagus (inhibit esophageal contraction).
- ❑ Surgical : esophageal Dilation



3. Diffuse Spasm ;

It is a **motor disorder** of the esophagus .

- **causes** unknown (may **Stress**) produce contraction of esophagus . its more common in **female** .

difficulty or pain on swallow . chest pain

Assessment and diagnosis :

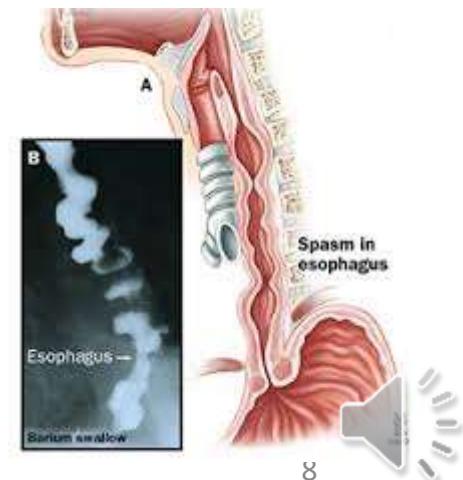
esophageal Monometry

X-ray : after **barium** show separate area of spasm

Management : sedation and long acting **nitrate** .

calcium channel blocker , small frequently food

Surgical : dilation



4. Hiatal Hernia :

Esophagus enters the abdomen through an opening in the diaphragm , and upper part of stomach tends to move up into lower portion of thorax.

Occurs most frequently in **women** .

Types of Hiatal hernia

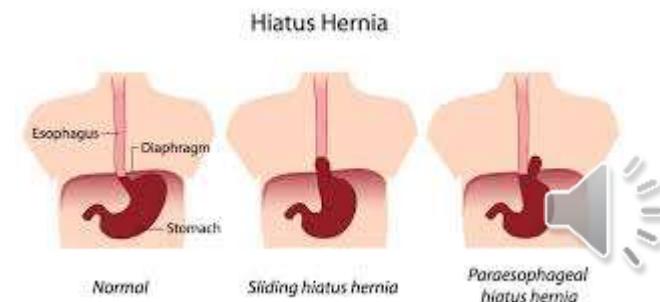
- Sliding** : implicated in reflux (feel sense of fullness) or asymptomatic; occurs in **upper stomach**
- Paraesophageal** hernia : occurs in **all or part of stomach** pushes through the diaphragm beside the esophagus

Complication of hernia : **bleeding, obstruction, strangulation** .

Assessment and Diagnosis : X-ray , barium , scopic examination

Management :

- Small frequent meals**
- Elevate head 4-8 inches
- Surgical** :



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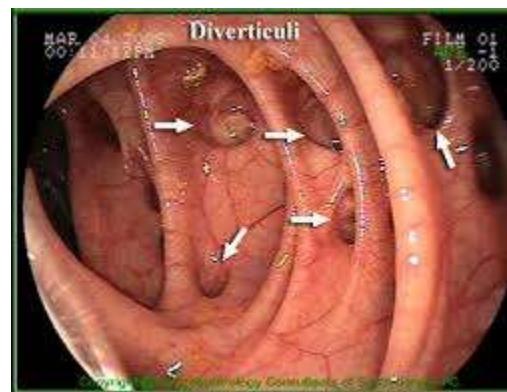
5. Diverticulum :

- Is an outpouching of mucosa and submucosa that protrudes through a weak portion of the musculature .
- Its may occurs in one of three areas of the esophagus**
 1. The midesophageal area
 2. Lower area of the esophagus
 3. Border of the esophagus .

Clinical manifestation : dysphagia, fullness, belching, regurgitation, gurgling,

Assessment and diagnosis : Barium swallow, scopic examination

Management ; surgical removal



6. Perforation :

- May result from **stab or bullet wound of the chest or neck , chemical burns** .
- Manifestation** ; pain followed dysphagia, infection, fever, leukocytosis, hypotension,
- Assessment** ; **diagnostic X-ray , Scopic examination**
- Management** ;
 1. broad Spectrum **antibiotics**(infection prevention)
 2. NGT decrease amount of gastric juice
 3. NPO (parenteral feeding)
 4. **Surgery** : close the wound



7- Gastro-esophageal reflux

- **Definition:**

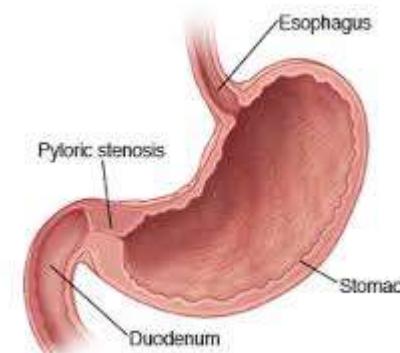
- Backflow of gastric contents into the esophagus

- **Causes:**

- incompetent lower esophageal sphincter
 - pyloric stenosis
 - motility disorder

- **Predisposing factors:**

- Hiatus hernia,
 - Incompetent lower esophageal sphincter
 - Decreased esophageal clearance
 - Decreased gastric emptying



Assessment

Signs and symptoms

- Heartburn (pyrosis)
- Dyspepsia سوء هضم
- Regurgitation ارتجاع
- Epigastric pain
- Dysphagia
- Ptyalism (drooling)
- nausea and vomiting

Diagnostic evaluation

- Endoscopy or barium swallow
- Gastric pH analysis



Nursing interventions

- Avoid stimulus that increases stomach pressure and decreases GES pressure
- Avoid spices, coffee, tobacco and carbonated drinks, and avoid eating 2 hours before bed
- Give low fat, high fiber, high protein diet
- Do not lay down for 2-3 hours after meal.
- Avoid tight clothes or bending over يثني
- Elevate the head of the bed 30 degree
- Medication
 - Antacid
 - H2-blockers (Zantac),
- Advise proper weight reduction



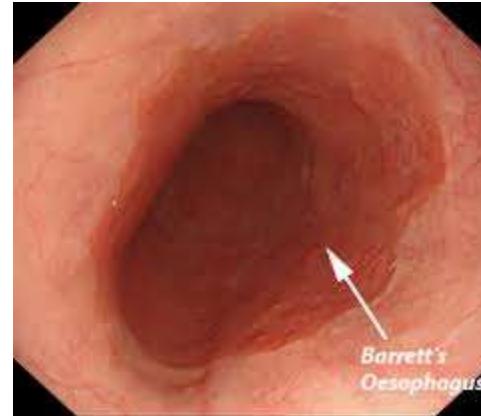
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8- Foreign bodies swallowing

9- chemical Burn

10- Barret's Oesophagus

- lining of the oesophagus mucosa
- Associated with GERD
- clinical Manifestations: symptoms of GERD and symptoms of Peptic ulcers
- Assessment : esophagogastroduodenoscopy (EGD), Biopsy.
- Management: follow up endoscopy after 6 months, ablation, esophagectomy.

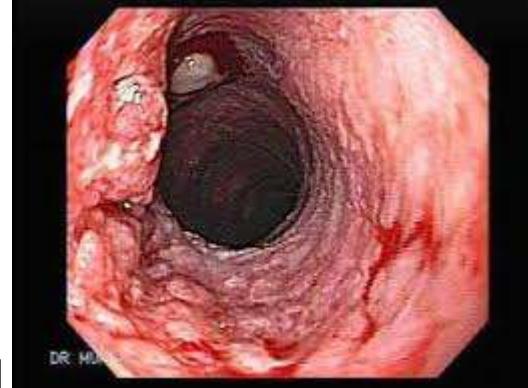


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11- CANCER OF THE ESOPHAGUS

Associated Factors

Cause is **unknown**, but has been associated with.



1. **Barrett's esophagus**
2. **Achalasia**
3. Chronic use of **alcohol** and **tobacco** (squamous cell carcinoma)
4. **Genetic** predisposition—black male population
5. Ingestion of **caustic substances** (such as lye, غسيل), which cause esophageal strictures
6. Other head and neck cancers



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Clinical Manifestations

1. **Dysphagia** , a late sign
2. Mild, atypical **chest pain** associated with **eating** precedes dysphagia
 3. Pain on swallowing (**odynophagia**)
4. Progressive **weight loss**
5. **Hoarseness** (if laryngeal involvement)
6. **Lymphadenopathy** (supraclavicular or cervical) or hepatomegaly with metastatic involvement
7. Later symptoms—hiccups, respiratory difficulty, foul breath, regurgitation of food and saliva

Diagnostic Evaluation

1. **Chest x-ray** may show adenopathy; mediastinal, widening, metastasis; or a tracheoesophageal fistula.
2. **Endoscopy** with cytology and biopsy.
3. **Barium esophagram** may show polypoid, infiltrative, or ulcerative lesion requiring biopsy.
4. **CT** : the extent of the tumor , invasion and metastases



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Management

1. **cure or palliative** depending on the staging of the tumor and the patient's overall condition in relation to nutritional, cardiovascular, pulmonary, and functional status.
2. **Surgery**
3. **Radiation, chemotherapy**, or their combination; combination therapy appears to have better results.
4. Palliative treatment of dysphagia through **dilation** done by **endoscopy or laser therapy**.

