



- Esophageal Carcinoma:

- **Age:** most commonly occurring in males over 50 years of age.
- **Site of malignancy (keep in mind that the length of esophagus is 25 cm, so it can be divided into three parts):**
 - ✓ Upper third: 20%
 - ✓ Middle third: 50% (most commonly: squamous cell carcinoma which is considered as the commonest esophageal tumor worldwide).
 - ✓ Lower third: 30% (most commonly: adenocarcinoma).
- **Histology:**
 - ✓ Normal epithelium of the esophagus: non-keratinized squamous epithelium.
 - ✓ When malignancy occurs, the following changes will occur in the epithelium:
 - ❖ Abnormal epithelium (metaplasia) → dysplasia → malignancy.

• **Factors associated with esophageal carcinoma:**

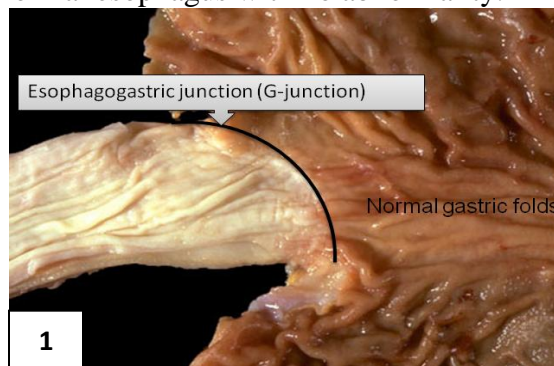
Squamous cell carcinoma (common in upper 1/3)	Adenocarcinoma (common in lower 1/3)
<ul style="list-style-type: none"> • Achalasia: a deficiency of myenteric ganglion cells at the zone junction resulting in failure to relax lower esophageal sphincter (LES) and there will be no peristalsis • Esophageal strictures: they can develop to malignancy over time. These strictures are healed ulcerations which in turn were caused by GERD. • Alcohol. • Cigarettes: notice that it is causing both squamous cell carcinoma and adenocarcinoma. • Diverticula. • Esophageal web: this is seen in Plummer-Vinson syndrome which is occurring in females and characterized by severe iron deficiency anemia, red beefy tongue and esophageal web. • Hot liquids. 	<ul style="list-style-type: none"> • Barret's esophagus: associated with reflux of GIT (it results from GERD). Barret's esophagus develops into adenocarcinoma. Pathogenesis of Barret's esophagus: <ul style="list-style-type: none"> ✓ Columnar lined epithelium. ✓ Caused by: gastroesophageal reflux. ✓ It starts with intestinal metaplasia → low-grade dysplasia → high-grade dysplasia • Fat (obesity). • Mutation of p53 gene.

• **Morphology:**

- ✓ Gross:
 - ❖ *Early lesion:* small grey-white mucosal elevations.
 - ❖ *Late lesion:* tumor masses encircling the lumen.
 - ❖ *Types:*

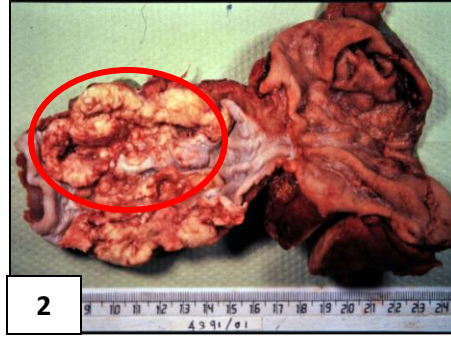
Polypoidal/ protruded type	60% of tumors
Flat, diffuse, infiltrative type which is spreading in the wall of esophagus	15% of tumors
Excavated/ ulcerative type which spreads into surrounding structures	25% of tumors
Superficial type (in situ)	-

- ❖ *Image (1):* normal esophagus with no abnormality.

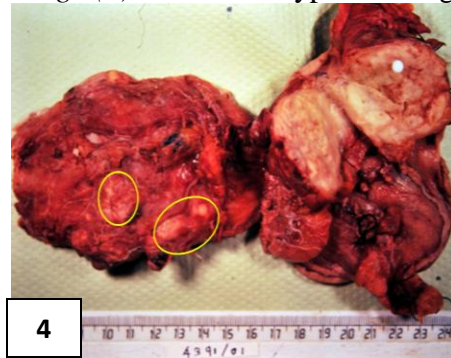




- ❖ *Image (2):* showing advanced malignancy of the esophagus; there is an ulceration in the J-junction; in the middle of esophagus there is: large polypoidal tumor, which is nodular with ulceration.
- ❖ *Image (3):* showing nodular and rigid necrotic mass.

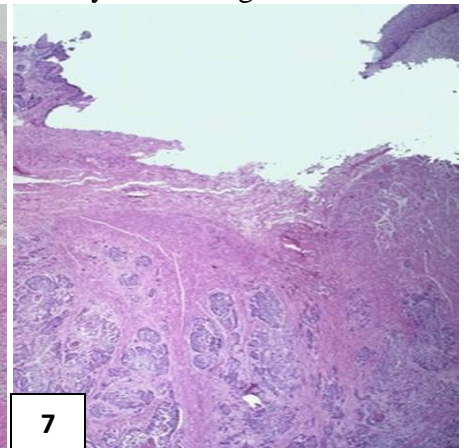
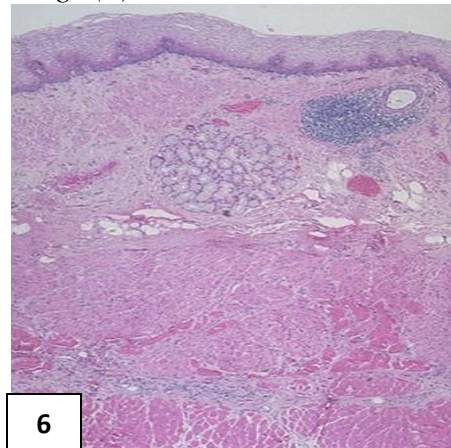


- ❖ *Image (4):* nodular mass involving lymph nodes.
- ❖ *Image (5):* ulcerative type of malignancy + stenosis (adenocarcinoma).

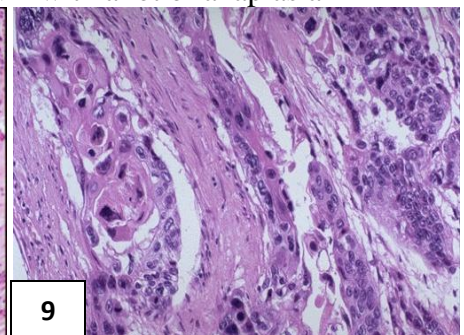
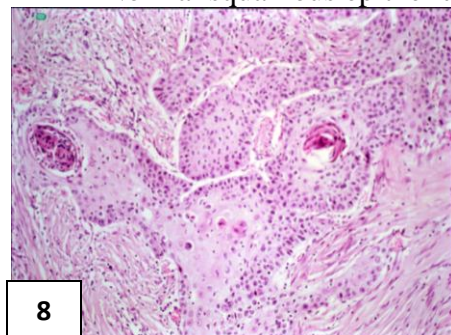


✓ Histology:

- ❖ *Image (6):* a normal esophagus lined by stratified squamous non-keratinized epithelium; normal submucosa and a thick muscle wall.
- ❖ *Image (7):* ulceration → mucosa is destroyed reaching the submucosa.

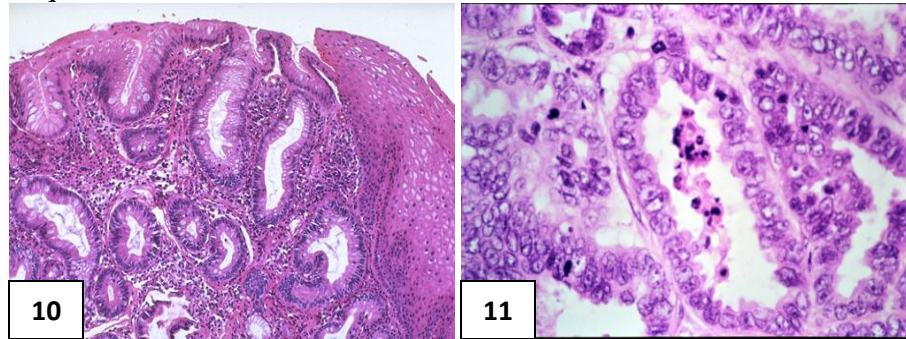


- ❖ *Images (8) and (9):* squamous cell carcinoma characterized by
 - Presence of individual cell keratinization.
 - Normal squamous epithelium with a lot of anaplasia





- ❖ *Image (10)*: showing a normal esophageal epithelium (on the right side) and intestinal metaplasia with goblet cells (on the left side).
- ❖ *Image (11)*: adenocarcinoma characterized by glands lined with abnormal nucleated cell (nuclear polymorphism); necrosis and frequent mitotic.



- **Staging esophageal carcinoma:**

Tis	Carcinoma in situ (localized to mucosa)
T1	Invades lamina propria and submucosa
T2	Invades muscularis propria
T3	Spreads to adventitia
T4	Invades adjacent structures (e.g. thyroid: rare!)

- **Lymphatic infiltration of esophageal carcinoma:**

- ✓ Upper third: metastasize to cervical lymph nodes.
- ✓ Middle third: metastasize to mediastinal and paratracheal lymph nodes.
- ✓ Lower third: metastasizes to gastric and celiac lymph nodes.

- **Prognosis**: poor!