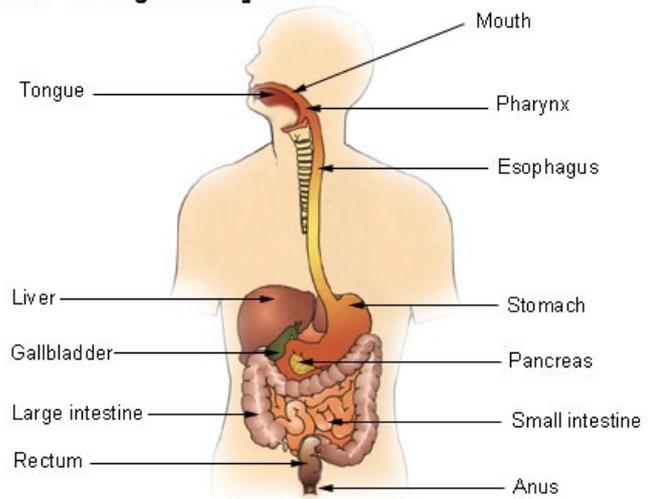


Oesophagus

The oesophagus is a narrow tube that connects the mouth to the stomach, allowing food to reach there. It has

Organs of the Digestive System



stratified, non-keratinised squamous epithelium.

Tract

The oesophagus descends from the mouth into the diaphragm; through the oesophageal hiatus at the T10 level. It has a midline position as it moves down the thorax. Nearing the diaphragm, it moves to be left and anterior to the thoracic Aorta.

Divisions and Syntopy

1. Cervical Part (Runs in the cervical Visceral space from C6 to T2)

- o Superiorly: Pharynx
- o Ventrally: Trachea, thyroid
- o Dorsally: the Prevertebral layer of the cervical fascia and spinal cord
- o Laterally: Cervical Neuro-Vascular bundle.

2. Thoracic Part (Passes through the posterior mediastinum from T2 to T10, 16 cm long)

- o Ventrally: Trachea (bifurcation at C4) main left bronchus and the heart (Left atrium) enclosed in the pericardium.
- o Laterally: the Vagus nerve runs on the sides of the esophagus: Running caudally: the right Vagus moves to its dorsal surface and the left Vagus nerve moves to its anterior surface.
- o Right side: the Azygos vein crosses the right main bronchus and then opens into the Brachiocephalic.
- o Left side: The descending part of the aortic arch.
- o Dorsally: Thoracic aorta and Thoracic duct.

3. Abdominal part (1-3 cm, very short - runs within the peritoneal cavity from T10 to T11, after passing through the esophageal hiatus of diaphragm)

- o Ventrally: in contact with the liver (creating the esophageal impression on its dorsal surface)
- o Dorsally: Diaphragm
- o Inferiorly: the cardiac orifice

Compressions

1. Junction of the pharynx and the oesophagus
2. Superior mediastinum - arch of Aorta
3. Posterior mediastinum - left main bronchus
4. Posterior mediastinum - compressed hiatus

Esophageal Sphincters:

- Pharyngoesophageal (Upper): the Inferior constrictor muscle prevents air from entering the esophagus and prevents the back flow of food.
- Gastroesophageal (lower) – left to T11 protects esophagus from the stomach's acidity.

Innervation

● Parasympathetic – Vagus nerve:

- o Cervical and Upper thoracic part: Recurrent laryngeal nerve.
- o Thoracic part (Below tracheal bifurcation) – Esophageal plexus (formed by right and left Vagus)
- o Abdominal part – anterior and posterior vagal trunks (Arising from the esophageal plexus)

● Sympathetic:

- o Cervical: Cervicothoracic ganglion.
- o Thoracic: thoracic sympathetic trunk
- o Abdominal: Abdominal aortic plexus.

Oesophageal Plexus: Anterior vagal trunk comes from the left vagus nerve; the posterior vagal trunk comes from the right vagus nerve

Arteries and Veins

Arterial blood supply:

- Cervical Part: Inferior thyroid artery
- Thoracic Part: Esophageal branches of Aorta
- Abdominal Part: Inferior phrenic and Left Gastric Artery

Venous Drainage:

- Cervical Part: inferior Thyroid vein Brachiocephalic vein SVC
- Thoracic part: Esophageal veins Azygos + Hemizygous SVC
- Abdominal part: left gastric vein superior mesenteric vein Hepatic portal system.

Lymphatic Drainage

- Above Tracheal bifurcation: Lower deep cervical lymph nodes, Para-Tracheal nodes
- Below Tracheal bifurcation: Tracheobronchial nodes, Pre-vertebral nodes.
- Abdominal part: Pre-gastric nodes, Sub-phrenic nodes.

Oesophageal Varices

Veins drain portal and systemic blood. In portal hypertension, there is no blood flow into portal vein. This causes reverse flow through oesophageal tributaries, dilating the sub-mucosal veins in the oesophagus. This may lead to cirrhosis or oesophageal cancer.

Micro Structure

● Tunica Mucosa

- o Epithelium (Barrier function) In the Esophagus we have stratified squamous epithelium.
- o Lamina Propria loose CT rich in vessels, in the esophagus we have Esophageal cardiac cells (near the cardia) secretion of mucus.
- o Lamina Muscularis Mucosae.

● Tunica Submucosa

o Denser CT, relatively rich in blood and lymphatic vessels. Contains Meissner's Nerve plexus and Esophageal glands that secrete mucus

● **Tunica Muscularis**

o Inner circular

o Outer Longitudinal In the proximal 1/3 of Esophagus we have skeletal muscle, middle 1/3 we have combination of skeletal plus smooth and on the distal 1/3 only smooth.

o Between the layers we can see Auerbach's Myenteric nerve plexus.

● **Adventitia** The distal portion of the esophagus, in the peritoneal cavity, is covered by serosa, the proximal portion is enclosed by a layer of loose connective tissue, the adventitia.

Esophago-gastric junction - transition from stratified squamous epithelium (esophagus) to simple columnar epithelium. Invagination as gastric pits. Mucosa contains mucus-secreting esophageal cardiac glands opening into the gastric pits.

Links

Bibliography

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