

Esophagotomy

Esophagotomy: is an incision into the lumen of esophageal.

General anatomy of esophagus:

- The layers of the esophageal wall include the mucosa, submucosa, muscularis, and adventitia.
- The cervical portion of the esophagus inclines to the left of the trachea as it runs caudally, and ends at the thoracic inlet.
- The thoracic portion extends from the thoracic inlet, where it is located to the left of the trachea, crosses the trachea to regain its dorsal position at the tracheal bifurcation, and extends caudally to the esophageal hiatus of the diaphragm.
- The abdominal portion of the esophagus is short and wedge shaped, extending from the diaphragmatic hiatus to the stomach.

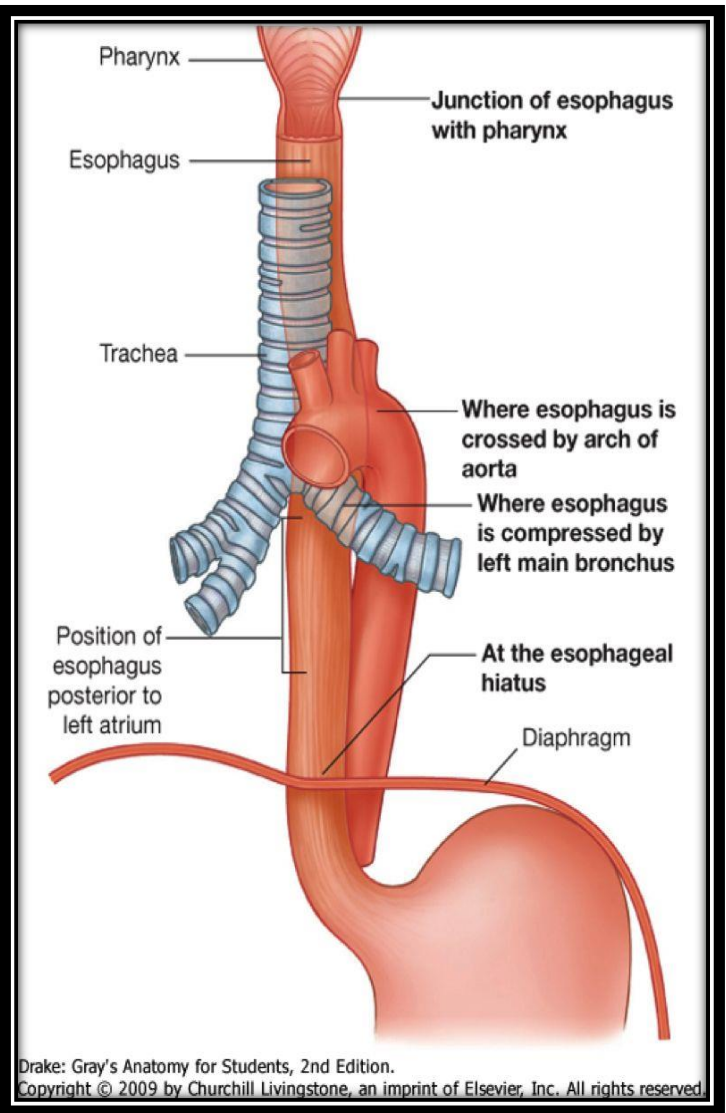
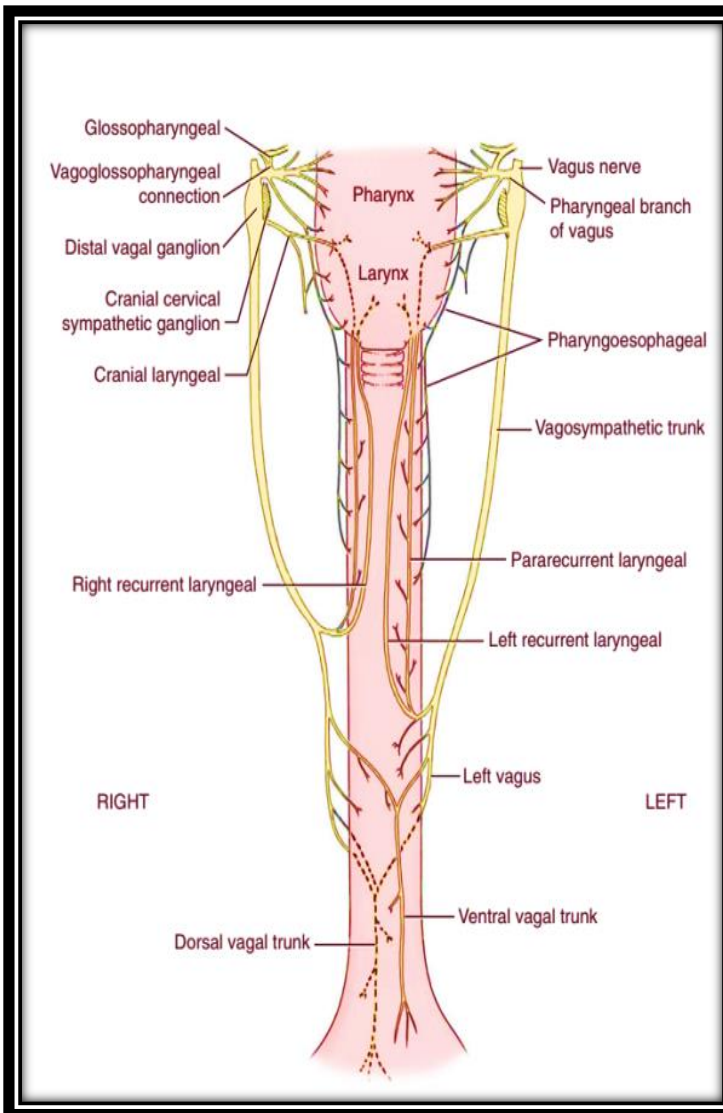
Indications for Esophagotomy include:

1. Foreign body.
2. Strictures.
3. Esophageal perforations.
4. Esophagus rupture .
5. Esophageal diverticula.
6. Parasitism (*Spirocerca Lupi*).
7. Gastroesophageal intussusception.

Esophageal Blood Supply and Innervation:

1. The main arterial blood supply to the cervical esophagus is from branches of the cranial and caudal thyroid arteries.
2. The bronchoesophageal artery is the main source of blood for the cranial two thirds of the thoracic esophagus.
3. The remaining thoracic esophagus is supplied by esophageal branches of the aorta or dorsal intercostal arteries.
4. The terminal portion is supplied by a branch of the left gastric artery.
5. The veins leaving the cervical esophagus drain into the external jugular veins.

6. The esophagus is innervated by nerve fibers arising from various branches of the vagus, beginning with the paired pharyngoesophageal nerves followed by the recurrent laryngeal and paralaryngeal nerves.



General surgical principles of Esophagotomy

Esophageal surgery is associated with a higher prevalence of incisional dehiscence than surgery on other portions of the alimentary tract due to Several factors may contribute to the high complication rate, including:

- 1- Lack of serosa.
- 2- Segmental nature of the blood supply.
- 3- Lack of omentum.
- 4- Constant motion caused by swallowing and respiration.
- 5- Tension at the surgical site during swallowing.

Preoperative considerations

1. Fluid, electrolyte, and acid-base imbalances should be corrected before induction of anesthesia.
2. animals should be fasted for 12 to 18 hours before esophageal surgery.
3. Perioperative antibiotics may be given to prevent infection of periesophageal tissues.

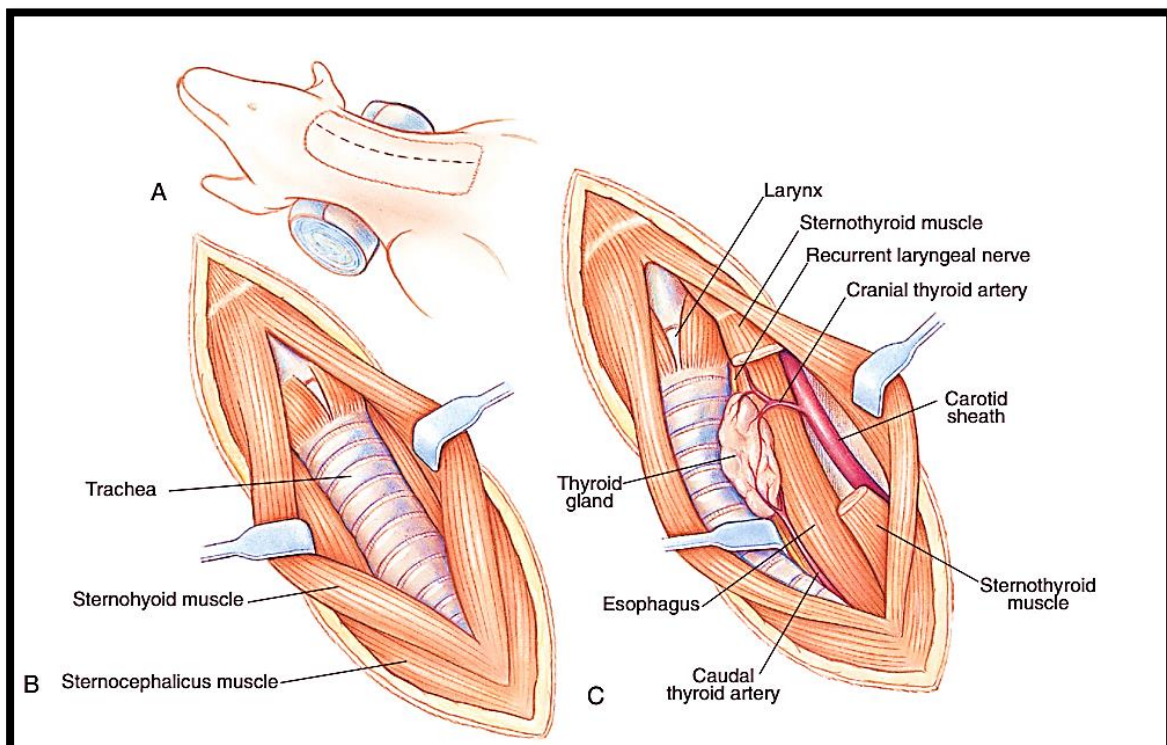
Approach to esophagus

- A. Approach to the cranial thoracic esophagus via (Lateral Intercostal Thoracotomy) 3-4 intercostal space.
- B. Approach to the caudal thoracic esophagus at the Heart Base via (Right Lateral Thoracotomy) 8-9 intercostal space.
- C. Approach to the abdominal esophagus via (Ventral Midline Celiotomy).

D. Approach to the Cervical Esophagus:

1. Position the patient in dorsal recumbency.
2. Incise the skin of neck on the midline.
3. Paired sternohyoid muscles along the midline to expose and Retract the sternohyoid muscle. If access to the caudal cervical esophagus is needed, separate and retract the sternocephalicus muscles.
4. Retract the trachea to the right to expose the adjacent anatomic structures, including the esophagus, the thyroid gland, the cranial and caudal thyroid vessels, the recurrent laryngeal nerve, and the carotid sheath (vagosympathetic trunk, carotid artery, and internal jugular vein)

5. Pass a stomach tube or esophageal stethoscope to facilitate identification of the esophagus and lesion.
6. Make a stab incision into the lumen of the esophagus, and extend the incision longitudinally as necessary to remove the foreign body or observe the lumen.
7. After completing the definitive procedure, lavage the surgical site with warm sterile saline and return the trachea to its normal position. Close the incision by apposing the sternohyoid muscles using absorbable suture (3-0 or 4-0) in a simple continuous pattern.
8. Appose subcutaneous tissues in a simple continuous pattern with 3-0 or 4-0 absorbable suture. Use nonabsorbable suture (3-0 or 4-0 monofilament) and an appositional suture pattern to appose the skin.



Approach to the cervical esophagus.

A, Position the patient in dorsal recumbency with the neck resting on a rolled towel.

B, Incise the skin from the larynx to the manubrium, and separate the sternohyoid muscles to expose the trachea.

C, Retract the trachea to the right to expose the esophagus, thyroid, carotid sheath, and recurrent laryngeal nerve.

Post-operative considerations:

- The patient should not receive food or water by mouth for at least 24 to 48 hours after surgery.
- Fluids should be continued until feeding resumes.
- Antibiotics should be continued for several days if the esophageal mucosa is severely eroded or lacerated.
- Analgesics may be necessary to control pain.

Complications:

1. Dysphagia.
2. Esophagitis.
3. Aspiration pneumonia.
4. Wound dehiscence.
5. Leakage at the surgical site.
6. Ischemic necrosis.
7. Stricture formation.
8. Abscessation.