

وسهلا



أهلا

يُمنع أخذ السلايدات بدون
إذن المحرر واي اجراء
يخالف ذلك يقع تحت طائلة
المسؤولية القانونية
جميع المعلومات للاستخدام
التعليمي فقط

الأستاذ الدكتور يوسف حسين

رئيس قسم التشريح والأنسجة والأجنة

كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

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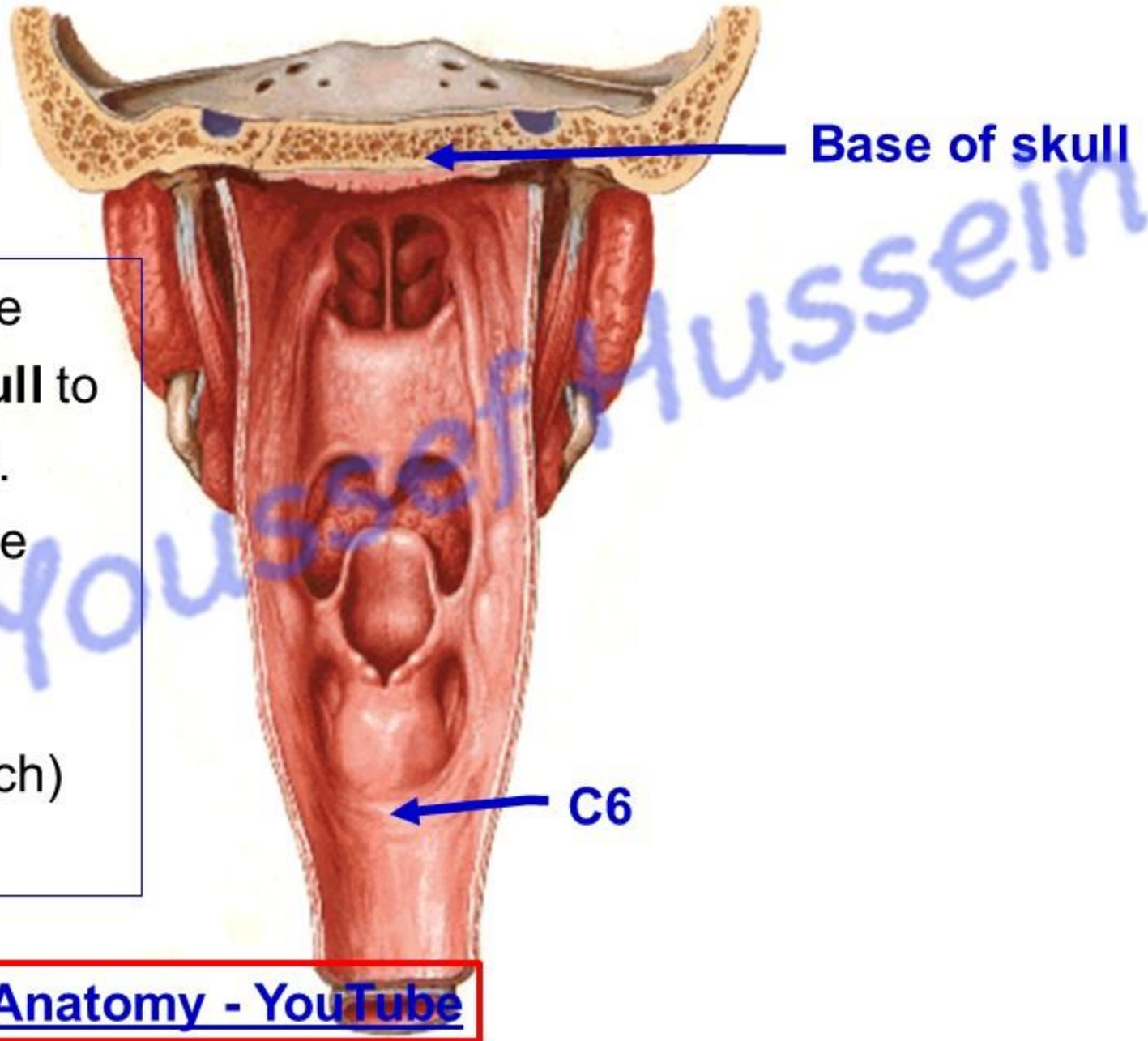
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Pharynx

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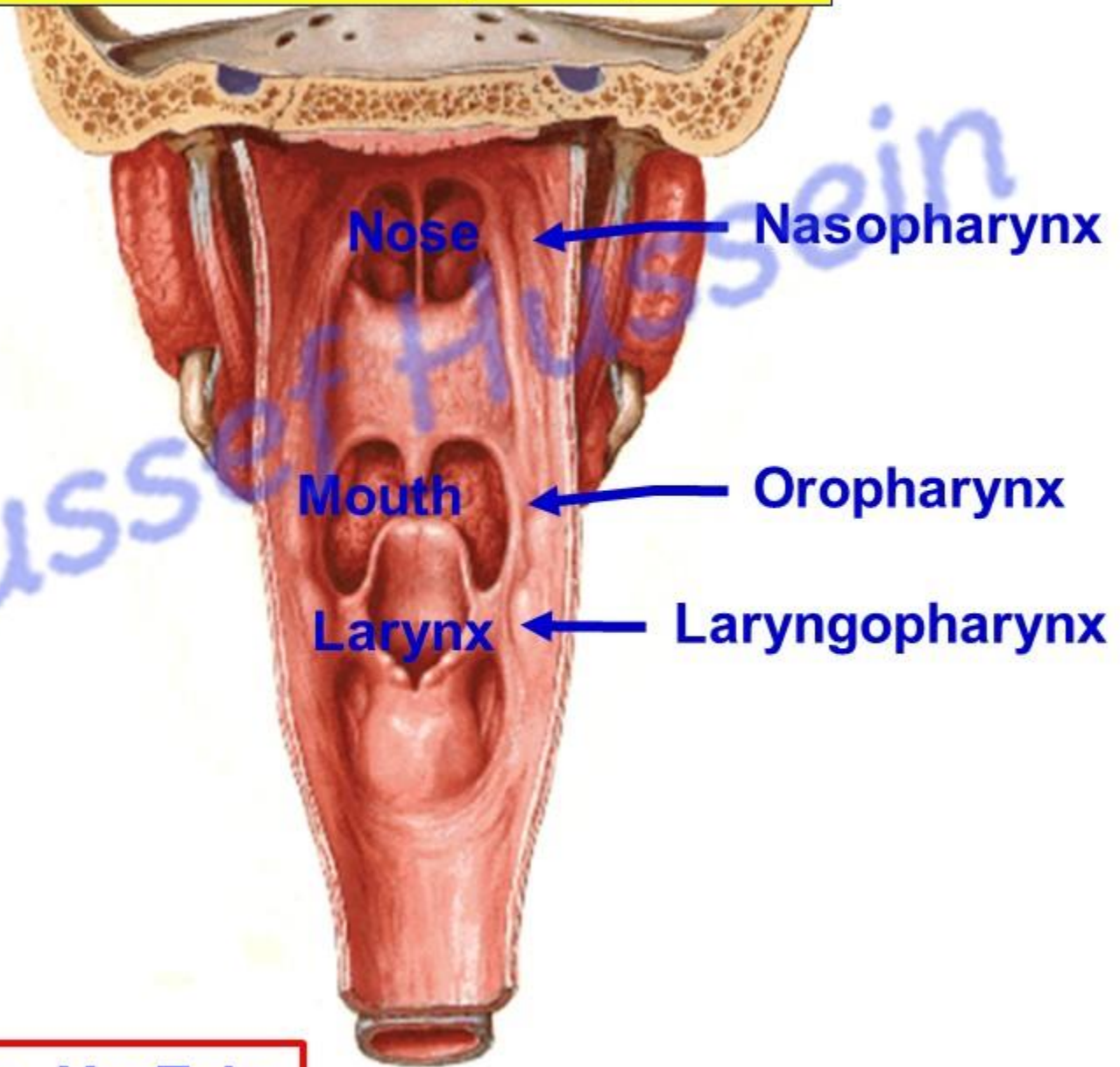
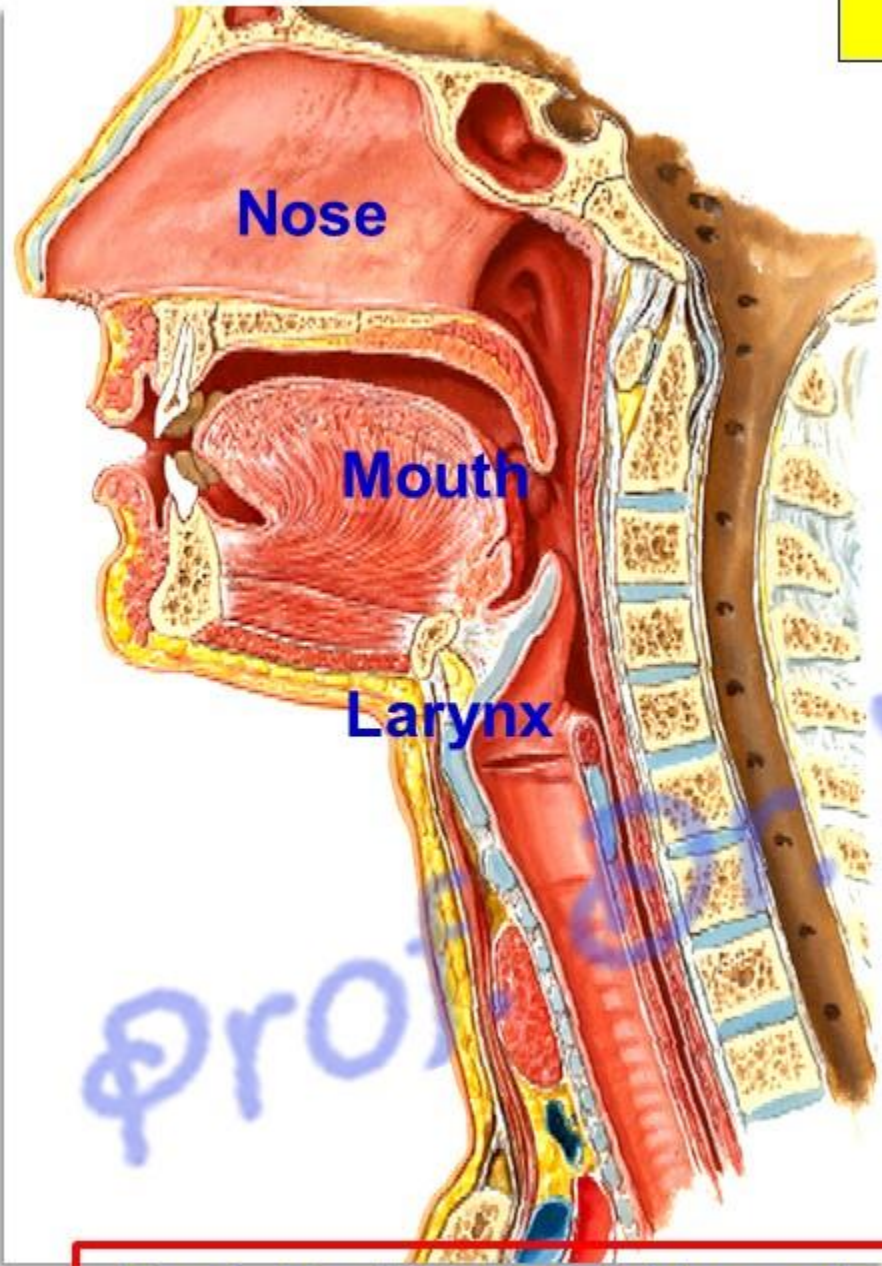
Base of skull

C6

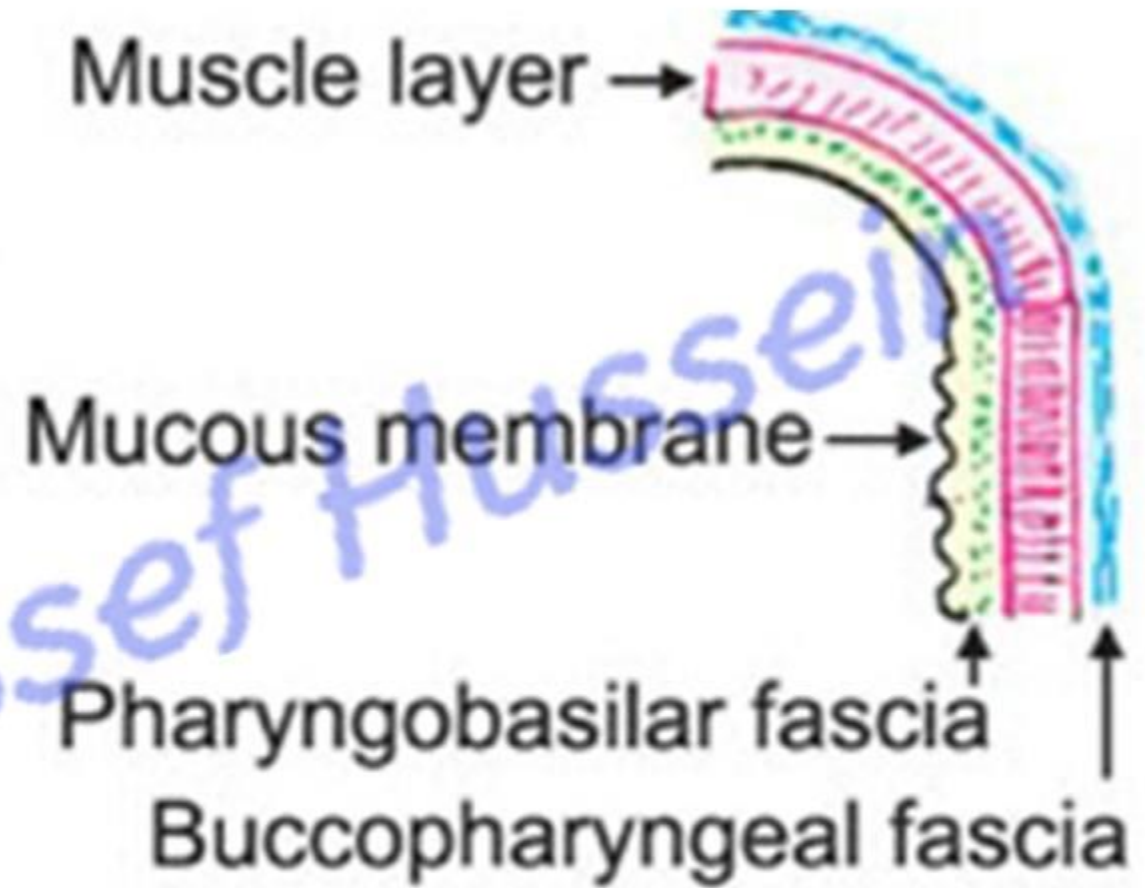
- **Extension:** It is a muscular tube extending from the **base of skull** to the lower border of **C6** vertebra.
- **Shape:** funnel-shaped with base upwards.
- **Length:** 12-14 cm long,
 - Its diameter, upper part (one inch)
 - Lower part (1/2 inch).

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Subdivision of the pharynx



- The wall arranged from inside outward
 1. Mucous membrane
 2. Pharyngobasilar fascia.
 3. Pharyngeal muscles.
 4. Buccopharyngeal fascia.



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Muscles of Pharynx

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MUSCLES OF THE PHARYNX

External (outer) circular muscles

- Superior constrictor
- Middle constrictor
- Inferior constrictor

Internal (inner) longitudinal Muscles

- Palatopharyngeus
- **Stylopharyngeus**
- Salpingopharyngeus

- All the muscles of the pharynx supplied by pharyngeal nerve plexus except stylopharyngeus muscle supplied by the glossopharyngeal nerve.

Posterior border of
Medial pterygoid plate

Pterygoid Hamulus

Pterygomandibular
ligament

**Posterior end of
mylohyoid line**

Stylohyoid ligament

Lesser horn of hyoid bone

Greater horn of hyoid bone

Oblique line of thyroid cartilage

Side of cricoid cartilage

Pharyngeal tubercle

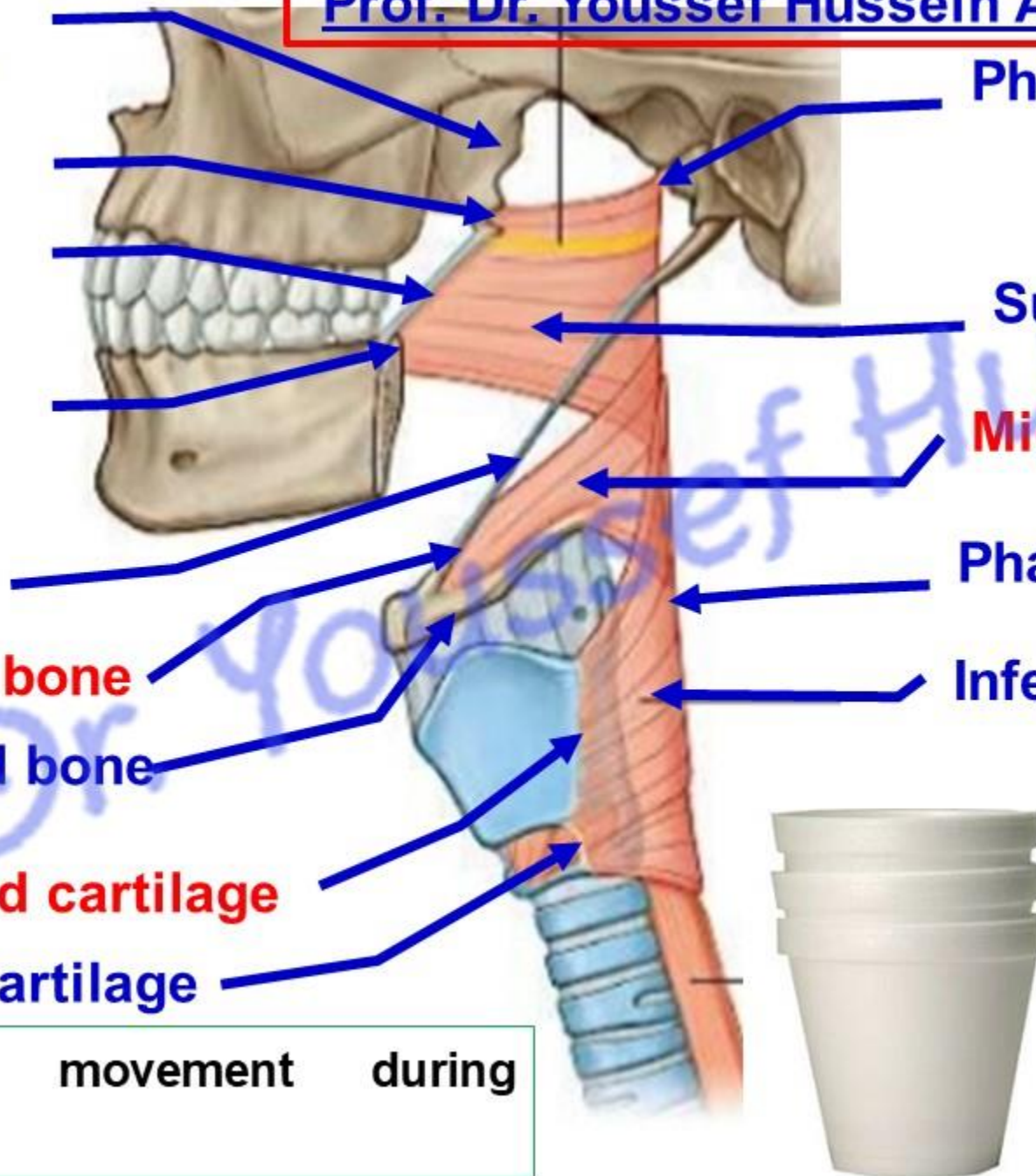
Superior constrictor

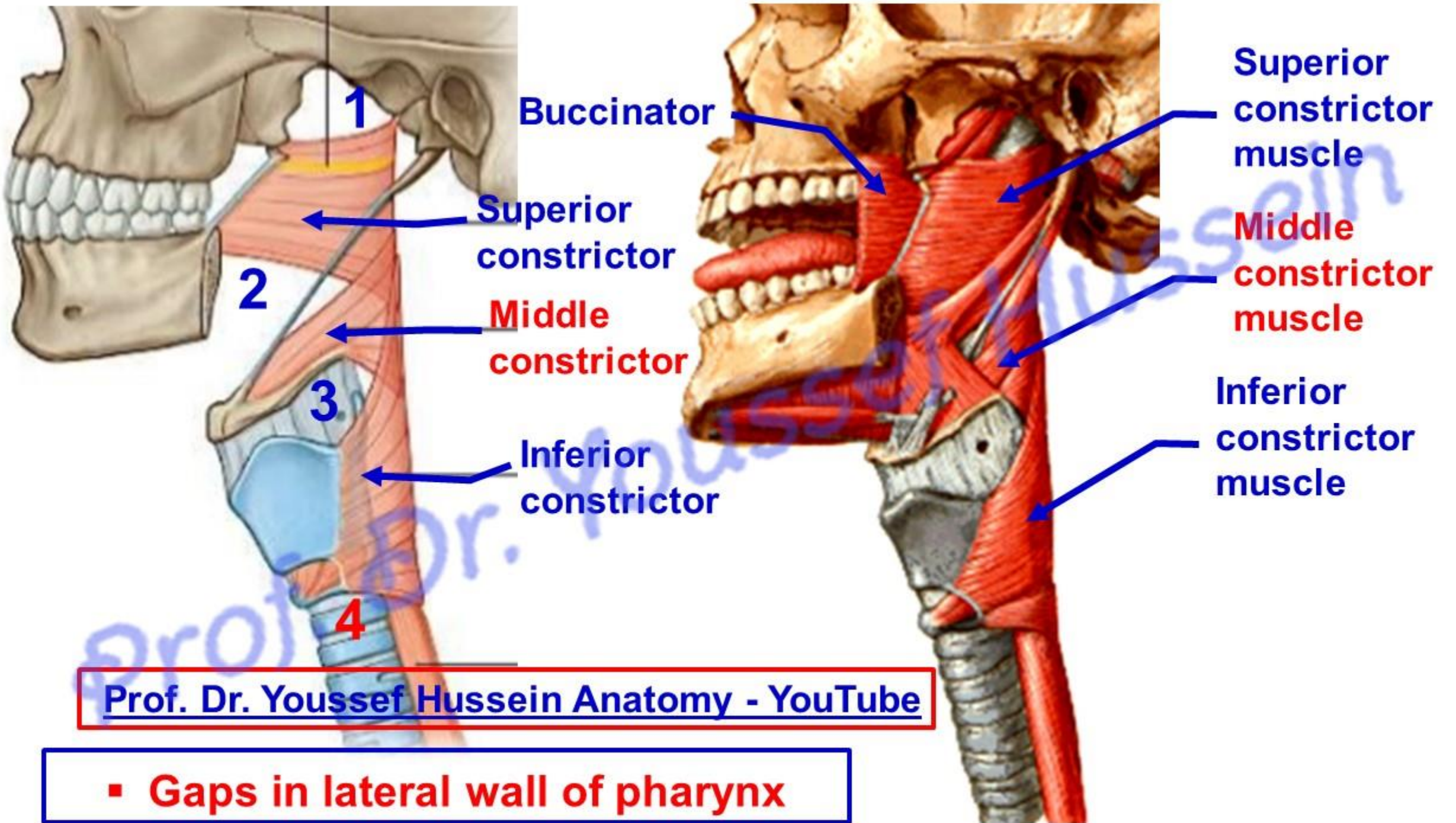
Middle constrictor

Pharyngeal Raphe

Inferior constrictor

- Actions, peristaltic movement during swallowing.





Buccinator

Superior constrictor

Middle constrictor

Inferior constrictor

Superior constrictor muscle

Middle constrictor muscle

Inferior constrictor muscle

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▪ Gaps in lateral wall of pharynx

▪ Gaps in the lateral wall of the pharynx

- **1) First gap:** between base of skull and upper border of superior constrictor muscle. - **It contains:**

1) **2 Palati muscles;** Tensor **palati** muscle, and **levator** palati muscle.

2) **2 ascending arteries;** ascending palatine (facial artery) and **ascending** pharyngeal arteries (ECA).

3) **Eustachian tube.**

- **2) Second gap:** between superior and middle constrictor muscles.

- **It contains:** 1) stylopharyngeus muscle. 2) glossopharyngeal nerve.

- **3) Third gap:** between middle and inferior constrictor muscles.

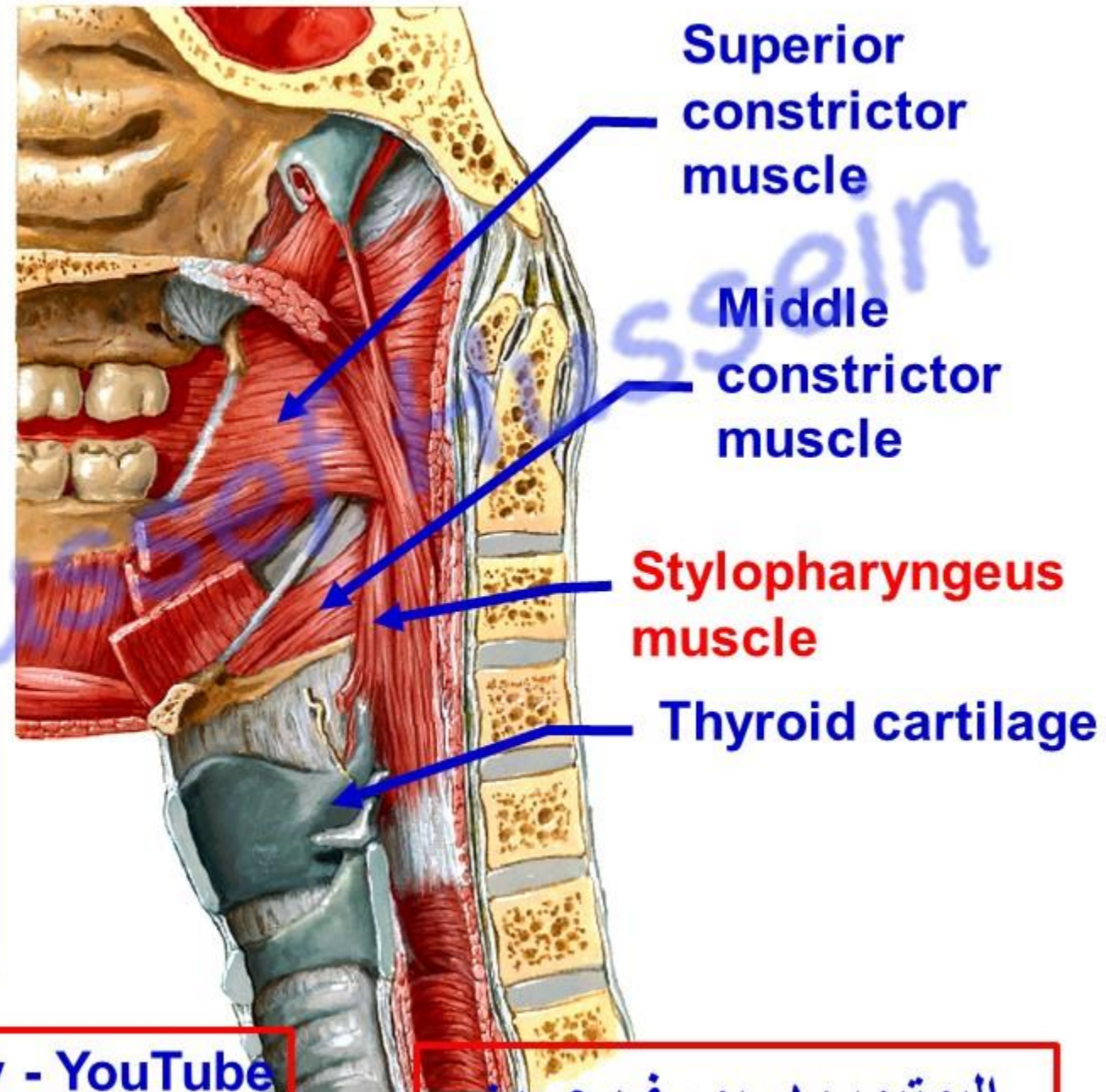
- **It contains** 1) Superior laryngeal vessels. 2) Internal laryngeal nerve.

- **4) The fourth gap:** below lower border of inferior constrictor muscle,

- **It contains** 1) Inferior laryngeal vessels. 2) Recurrent laryngeal nerve.

- **Stylopharyngeus muscle**

- **Origin;** styloid process near its base.
- **Course,** descends obliquely downwards and forwards **between** external and internal carotid arteries with the glossopharyngeal nerve.
- Then, it passes **between** superior and middle constrictors muscles of pharynx.
- **Insertion:** wall of the pharynx and posterior border of thyroid cartilage.
- **Action:** elevates the pharynx and larynx during swallowing.



- **Salpingopharyngeus muscle**

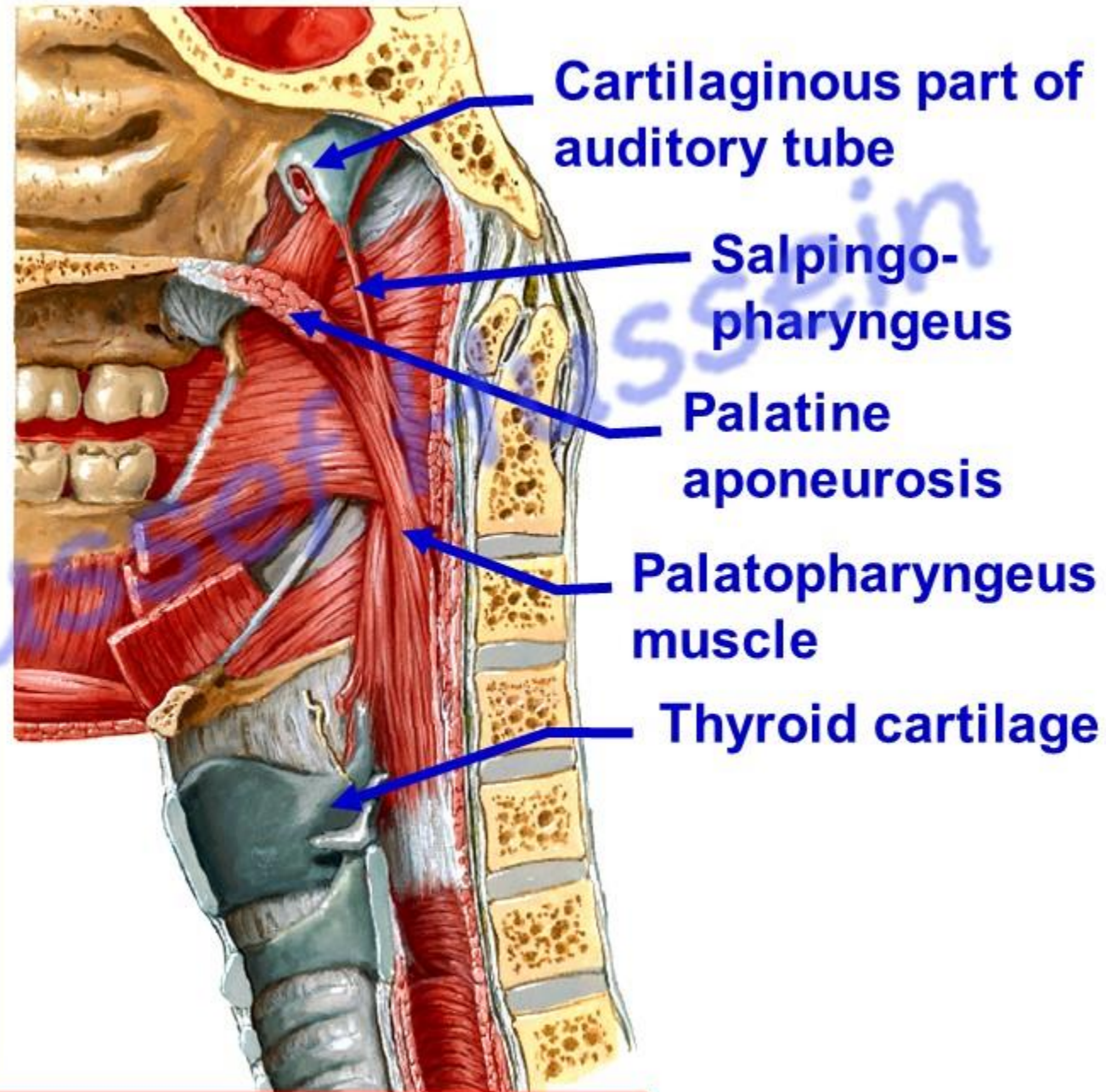
- **Origin**, from cartilaginous part of auditory tube.
- **Insertion**: wall of the pharynx and posterior border of thyroid cartilage.
- **Action**: 1) elevates pharynx and larynx during swallowing.

2) Keep Eustachian tube patent.

- **Palatopharyngeus muscle**

- **Origin**: upper surface of the palatine aponeurosis.
- **Insertion**: wall of the pharynx and posterior border of thyroid cartilage
- **Action**: 1- Elevates pharynx and larynx during swallowing.

2- Contraction of both muscles closes the pharyngeal isthmus.



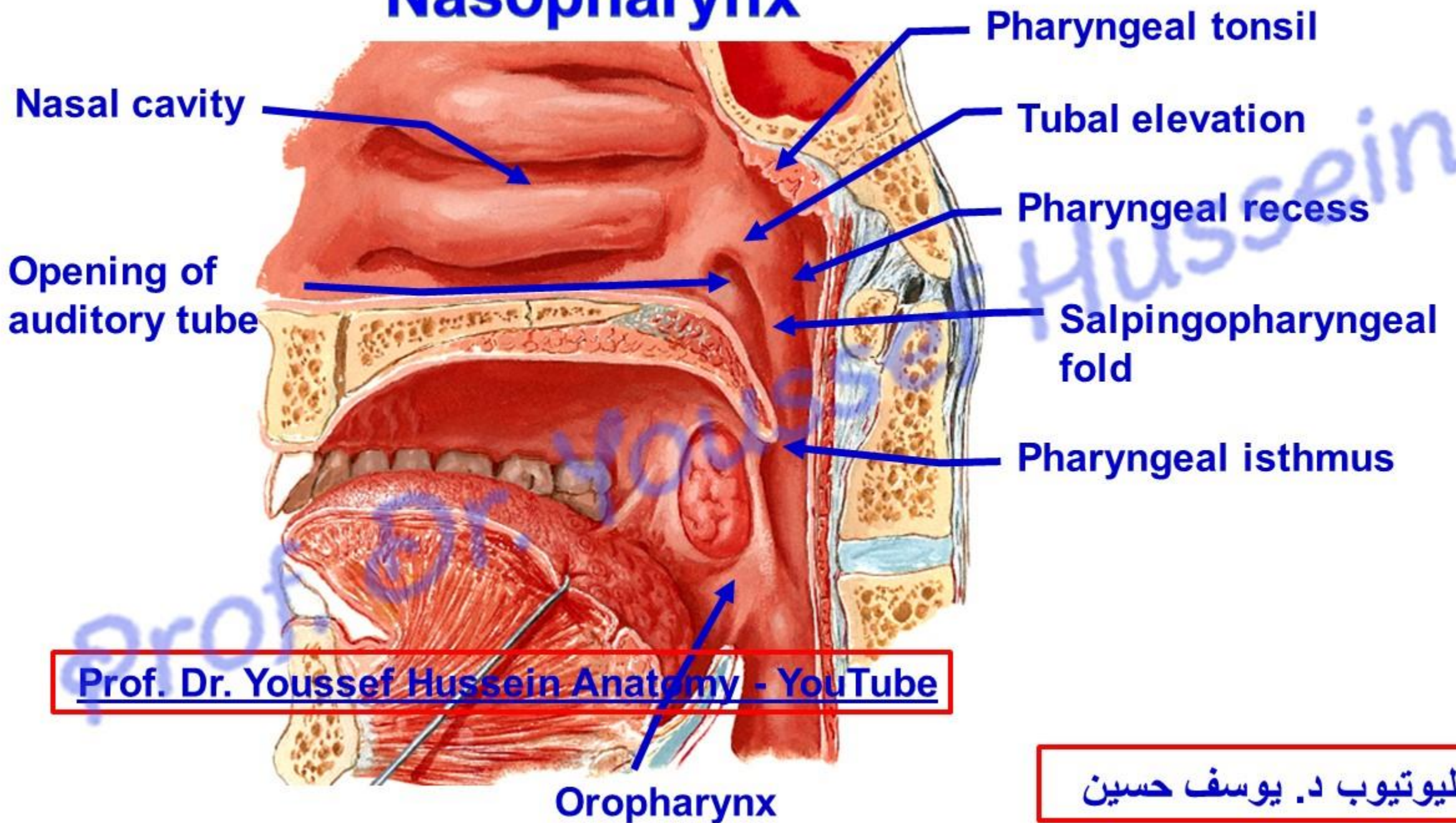
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Nasopharynx

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Nasopharynx



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- **Nasopharynx:**

- It is the upper part of the pharynx (behind nasal cavity)

- **Features of the nasopharynx:**

- (1) Opening of the auditory tube** (one on each side) connects the nasopharynx with the middle ear cavity.

- (2) Tubal elevation:** upper and posterior lips of opening of auditory tube.

- (3) Salpingopharyngeal fold:** by the salpingopharyngeus muscle.

- (4) Pharyngeal recess:** a narrow space behind the salpingopharyngeal fold.

- (5) Pharyngeal tonsil** collection of lymphoid tissue in the posterior wall.

- **Adenoid** enlargement of pharyngeal tonsil

- It causes **snoring** during sleep

- Difficult in nasal breathing and phonation

- It may block auditory tube causing otitis media

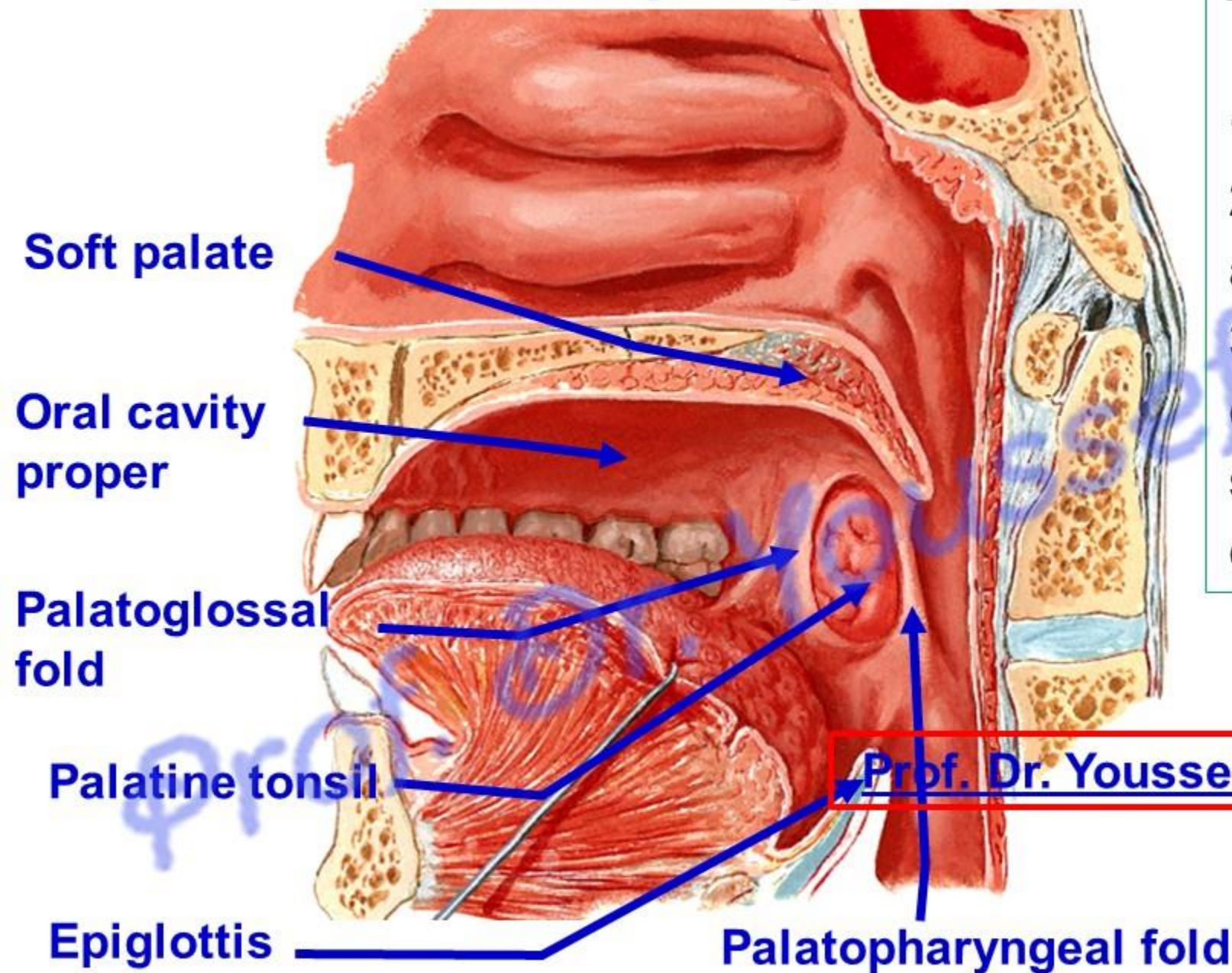
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Oropharynx Palatine tonsil

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Oropharynx



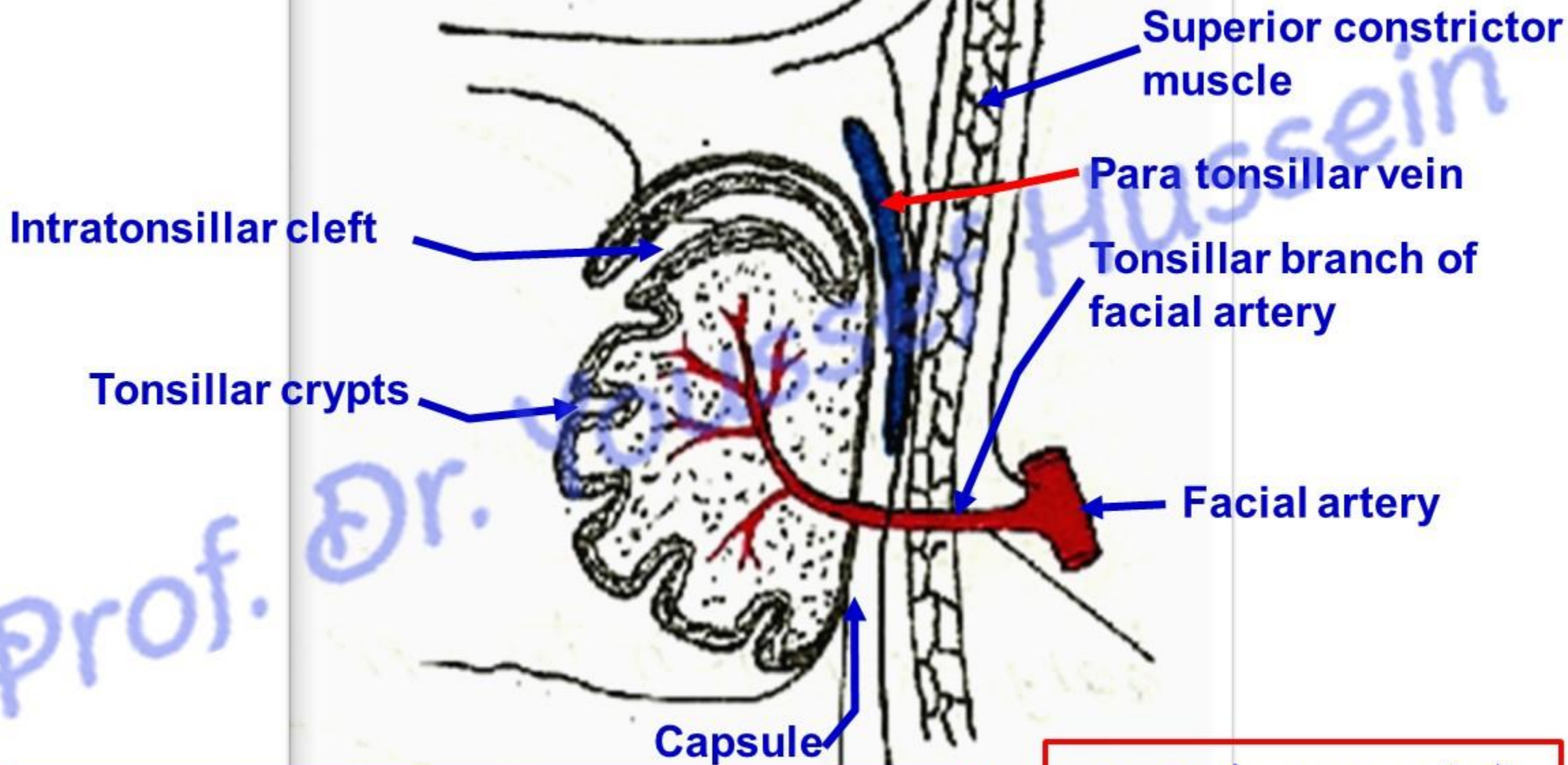
- **Boundaries of tonsillar fossa;**
 - 1- **Anteriorly**, palatoglossal arch.
 - 2- **Posteriorly**, palatopharyngeal arch.
 - 3- **Laterally (floor)**, superior constrictor muscle which separates it from the external carotid and facial artery..

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Medial

Lateral



- **Palatine tonsil**

- **Structure:** it is a mass of lymphoid tissue surrounded by capsule.

- **Shape:** almond-shaped.

- **Site:** it lies in the **tonsillar fossa** on the lateral wall of oropharynx.

- **Surfaces of the tonsil (Features)** : it has 2 surfaces:

1. **Medial** (free) surface: presenting 12-15 tonsillar **crypts**.

- The upper part of the tonsil shows a deep cleft called **intratonsillar cleft** (within the substance of the tonsil).

2. **Lateral** (deep) surface is covered by capsule which separates the tonsil from the superior constrictor muscle of the pharynx.

- This surface is related to VAN

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- 1- Tonsillar artery (branch of facial artery).

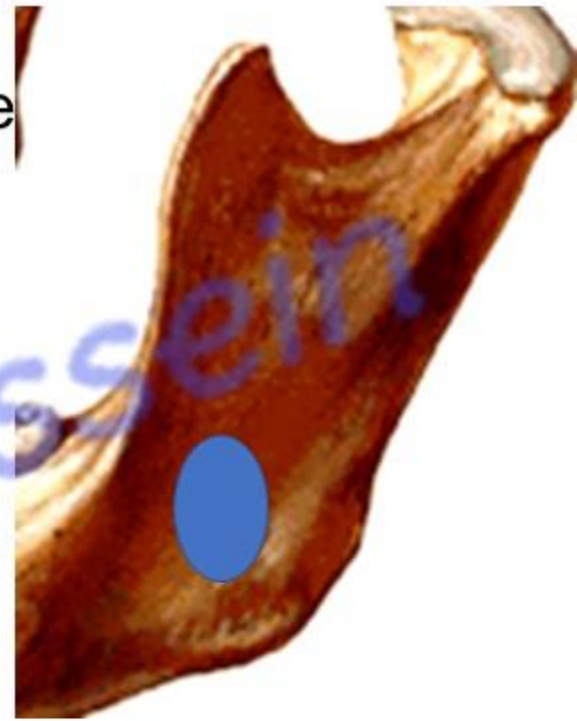
- 2- Paratonsillar vein.

- 3- Glossopharyngeal nerve

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• Palatine Tonsil

- **Nerve supply:** Glossopharyngeal nerve and lesser palatine nerve (maxillary).
- **Arterial supply:** tonsillar branch of
 - 1- Tonsillar artery (branch of Facial artery, main blood supply).
 - 2- Ascending palatine artery (facial artery).
 - 3- Ascending pharyngeal artery (external carotid artery).
 - 4- Greater palatine artery (the 3rd part of maxillary artery).
- **Venous drainage:** Paratonsillar vein to the pharyngeal plexus of veins or common facial vein.
- **Lymphatic drainage,** to upper deep cervical lymph nodes
- **Surface anatomy,** it represents by an oval fossa over ramus of mandible, a little above and in front angle of mandible.



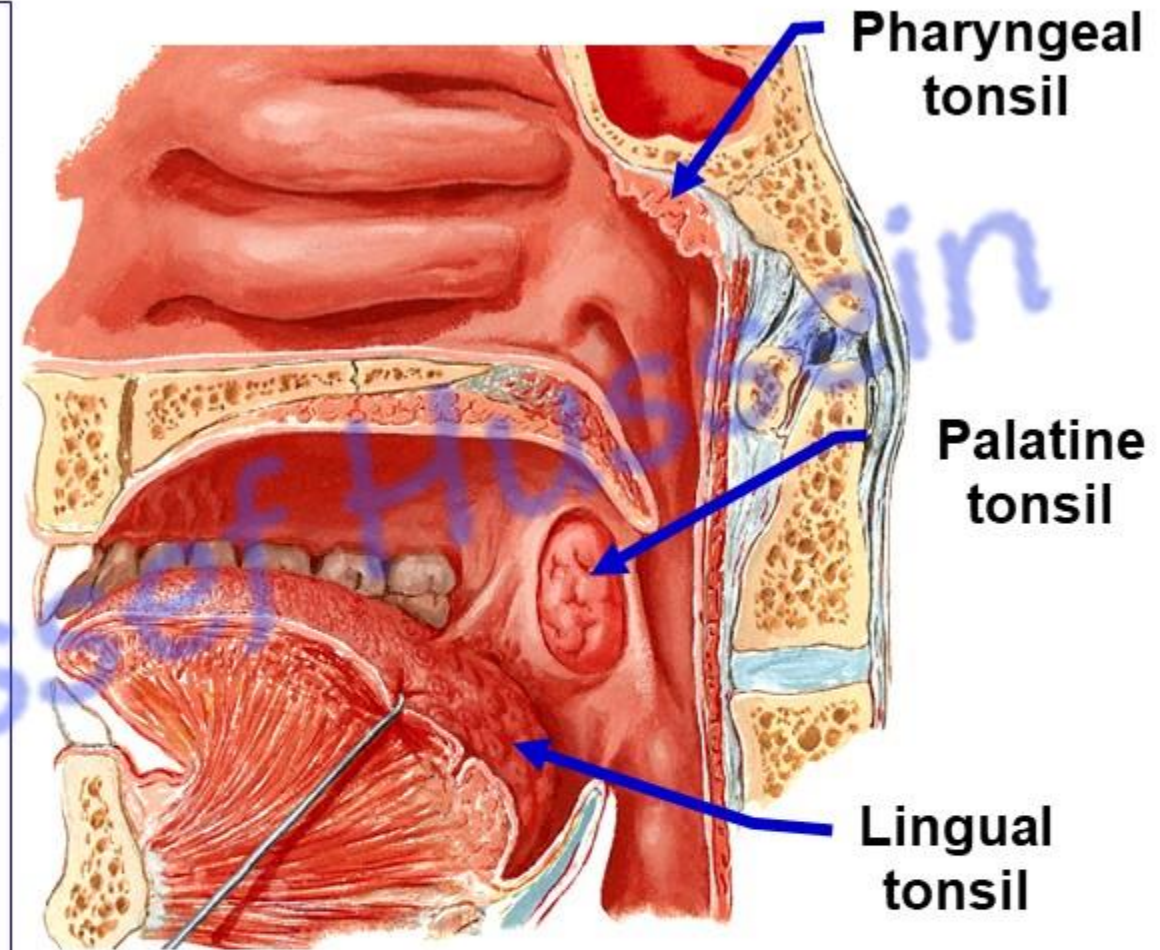
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1- Referred pain to the middle ear during tonsillitis or after tonsillectomy because the **glossopharyngeal nerve** supplies both tonsil and middle ear (through tympanic branch).

2- Severe haemorrhage may follow tonsillectomy due to injury of paratonsillar vein or arteries.

3- 3 tonsils (palatine tonsil, pharyngeal tonsil or adenoid and lingual tonsil in the dorsum of the posterior 1/3 of tongue) form a continuous ring of lymphoid tissue called **waldeyer's ring**. Protective incomplete ring of lymphoid tissue



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During tonsillectomy, glossopharyngeal nerve may be injured, causing loss of general sensation and taste sensation of the posterior one-third of the tongue.

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Laryngopharynx

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Laryngopharynx

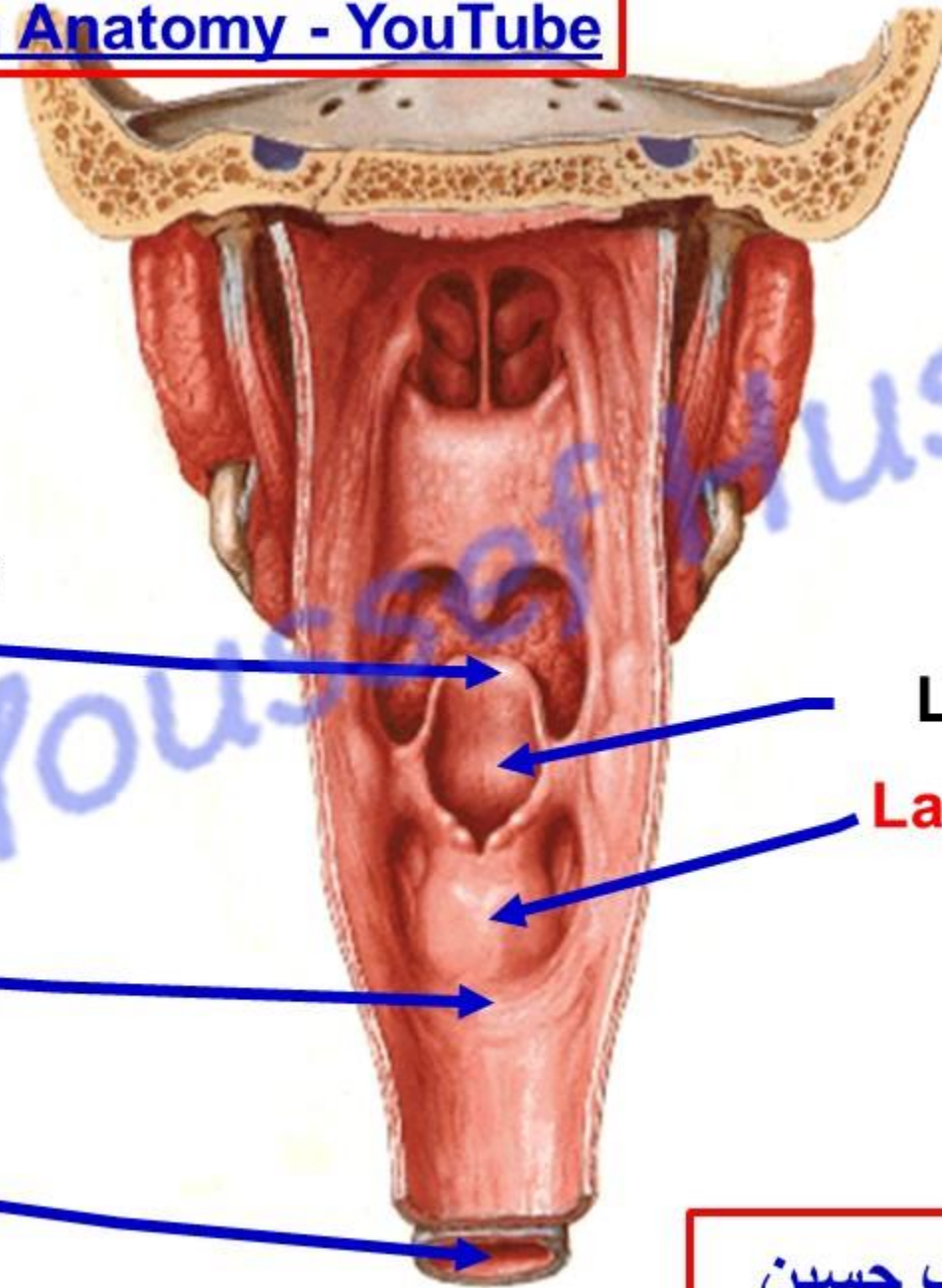
Begins, upper border of
epiglottis (C3)

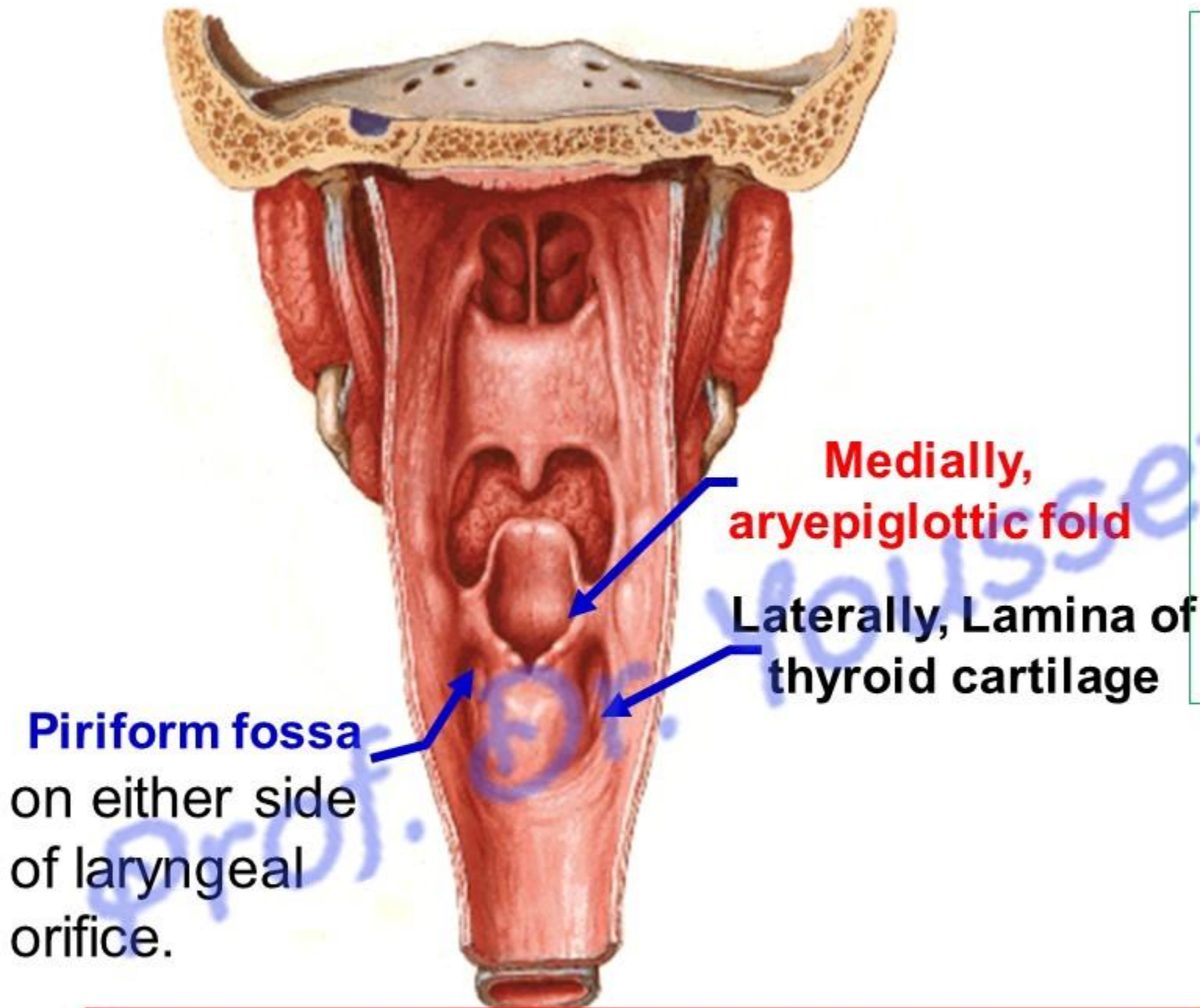
End, lower border of
cricoid cartilage (C6)

Trachea

Larynx

Laryngopharynx





❖ Piriform fossa

- In the floor of the fossa, there is the **internal laryngeal nerve**.
- During swallowing, foreign body may be lodged in fossa
- The nerve may be injured during removal of the foreign body.

- **Mechanism of deglutition**

- The process of deglutition passes through **3 successive stages**:

A- First stage: voluntary.

- The **bolus** of food is formed by raising the tongue against the hard palate from tip and extending backwards by **styloglossus** and **palatoglossus muscles**.

B- Second stage: involuntary.

1- The soft palate is **raised by** the levator palati and **tense by** the tensor palati.

- At the same time, the pharyngeal isthmus is closed.

(by contraction of the palatopharyngeus muscles).

2- The pharynx and larynx are drawn up behind the hyoid bone.

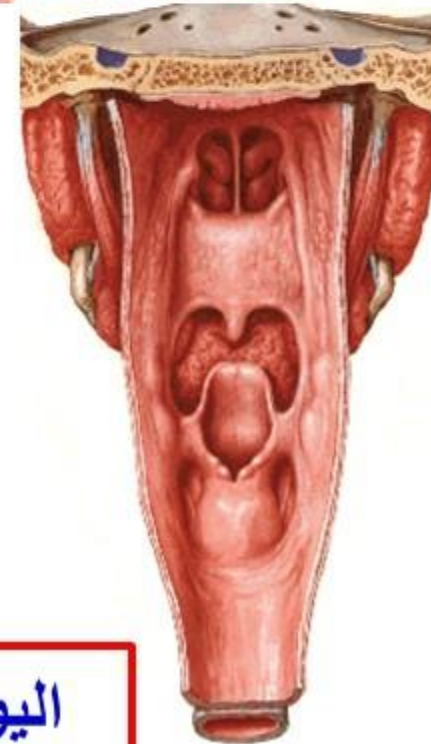
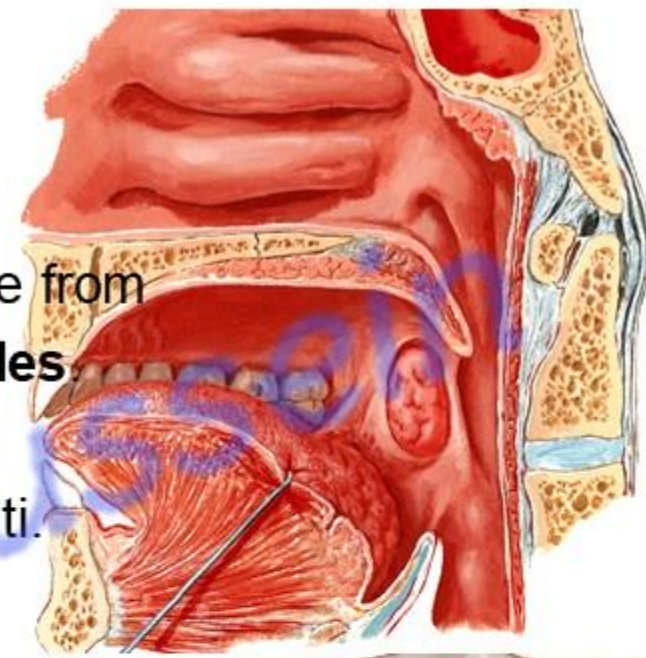
(by **Salpingopharyngeus, Palatopharyngeus, and Stylopharyngeus**).

- At the same time, the laryngeal opening is closed.

(by approximation of the aryepiglottic folds).

C- Third stage: involuntary

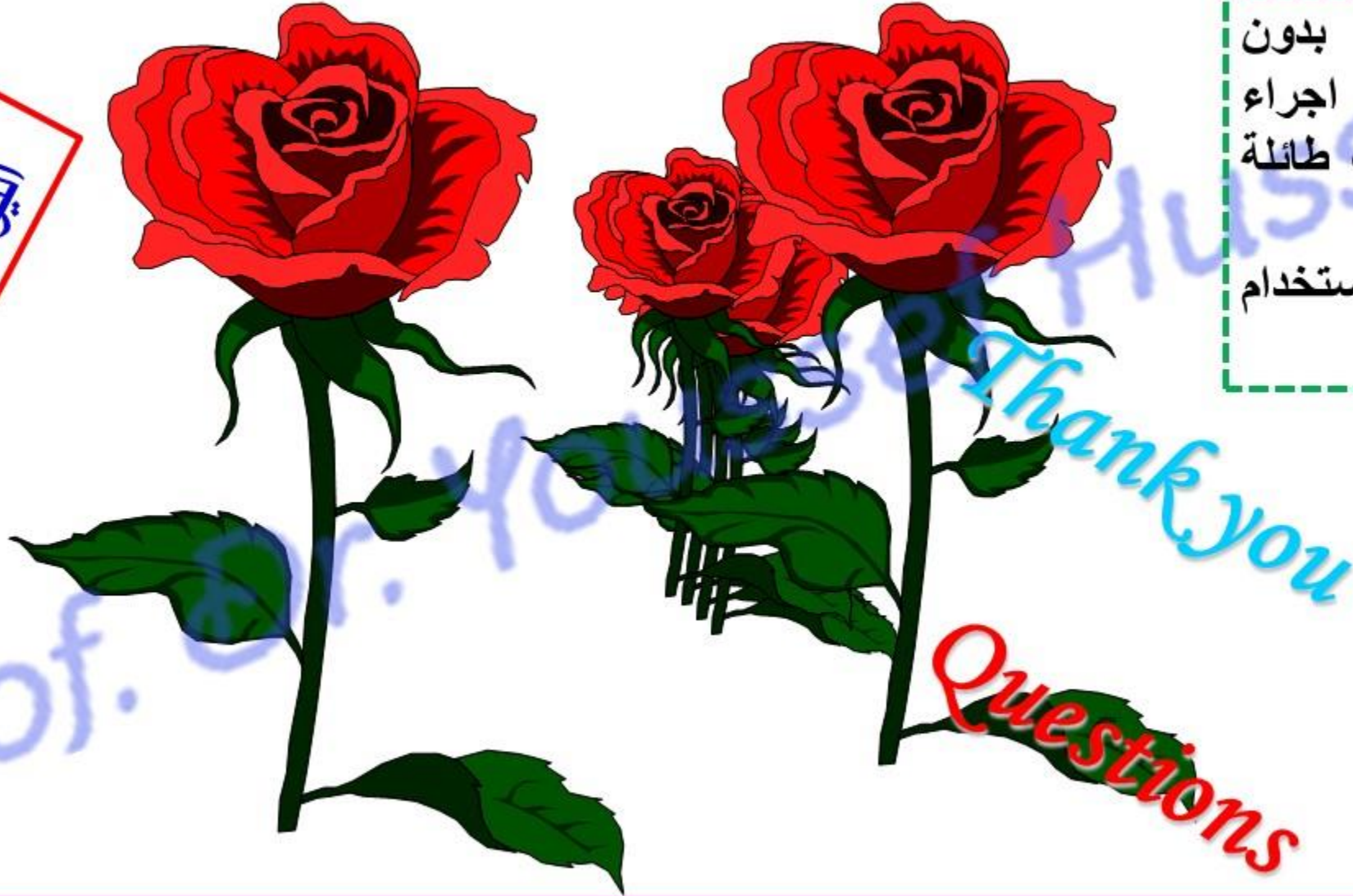
- The bolus of food passes down through pharynx by peristaltic contraction of superior, middle, and inferior constrictor muscles to push the bolus of food down to the esophagus .



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