

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

كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

الواتس (أي استفسار)
00201224904207

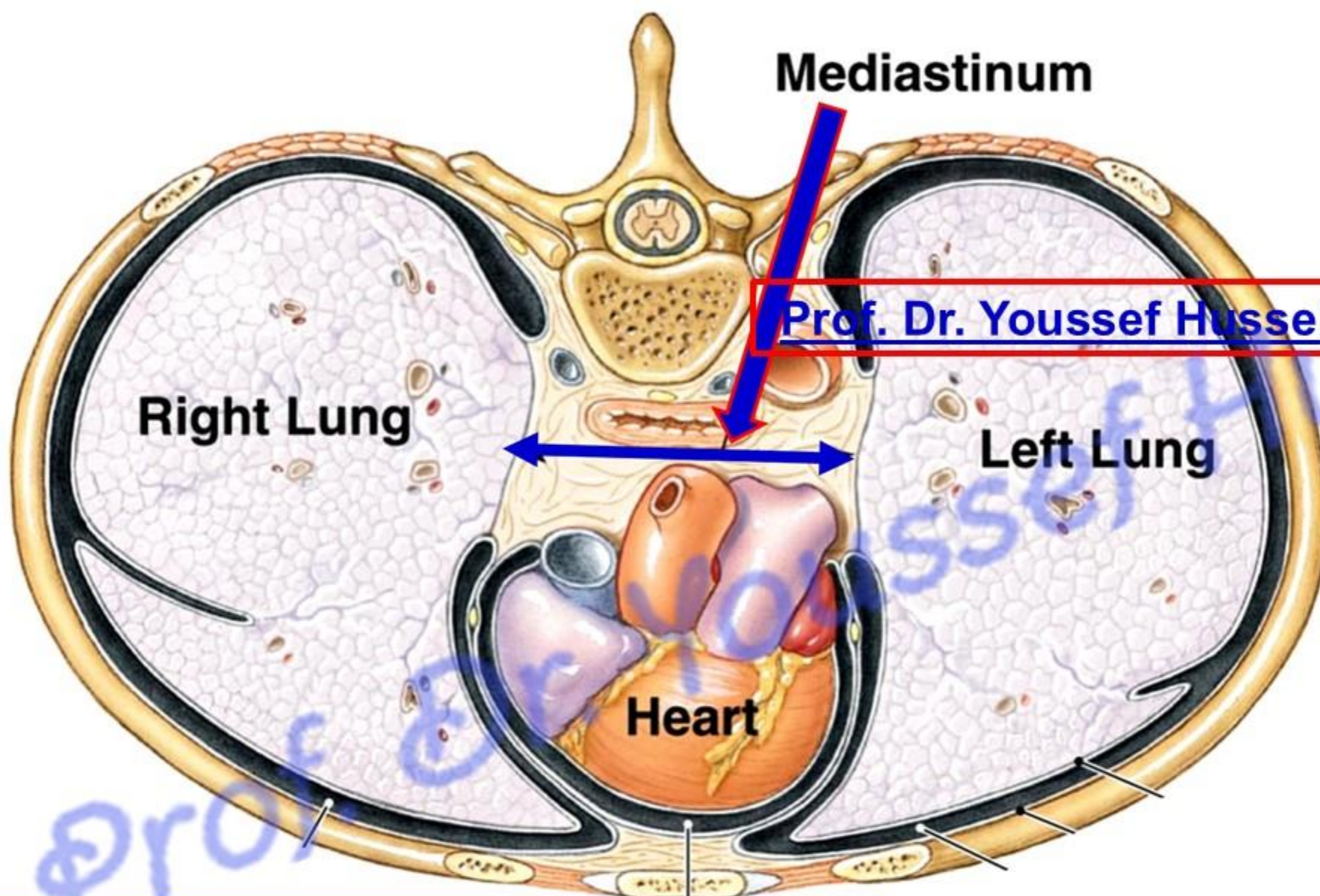
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Mediastinum

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Mediastinum

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Right Lung

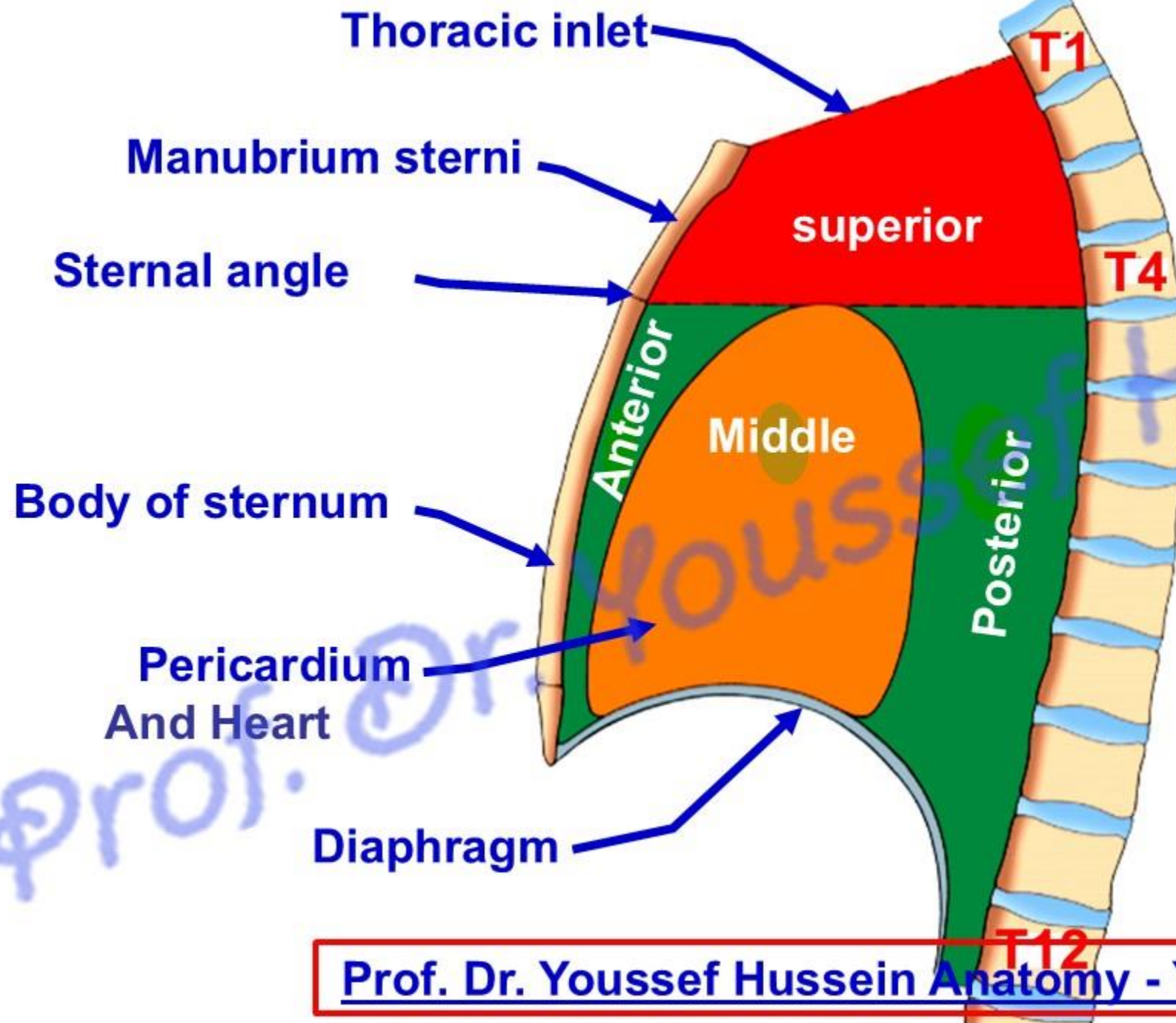
Left Lung

Heart

اليوتيوب د. يوسف حسين

Mediastinum is the space
between the two pleural cavities

Boundaries of Mediastinum



**** Boundaries of superior mediastinum;**

- **Anteriorly**, manubrium sterni.
- **Posteriorly**; upper 4 thoracic vertebrae.
- **Superiorly**; Thoracic inlet
- **Inferiorly**; an imaginary plane from sternal angle (angle of Louis) to the lower border of T4
- **On each side**; pleura and lung.

**** Boundaries of Inferior mediastinum;**

- **Anteriorly**; body of the sternum.
- **Posteriorly**; bodies of T5 to T12 thoracic vertebrae.
- **Superiorly**; an imaginary plane
- **Inferiorly**; diaphragm.
- **On each side**; pleura and lung.

Contents of middle Mediastinum

Superior vena cava

Ascending aorta

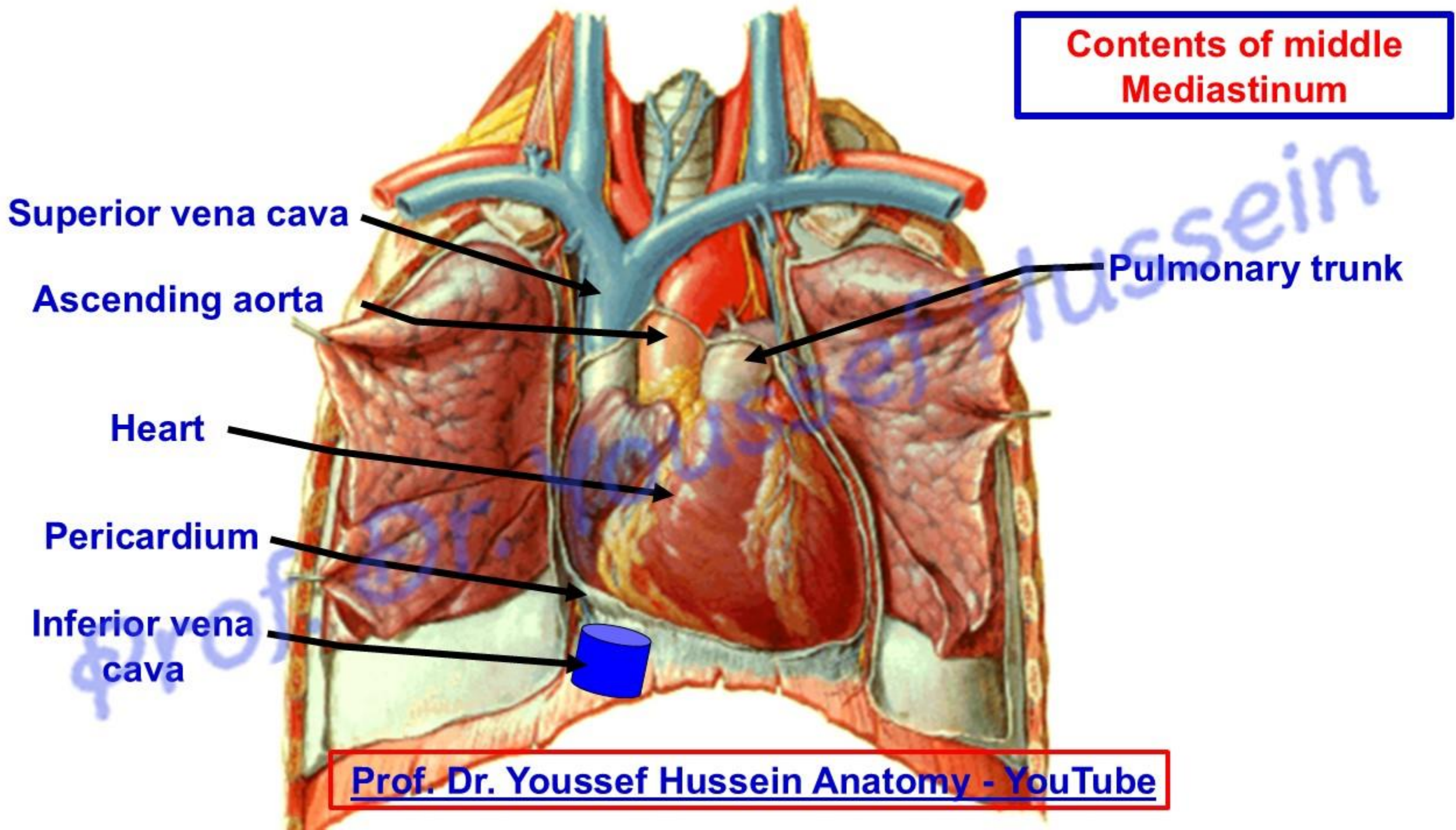
Heart

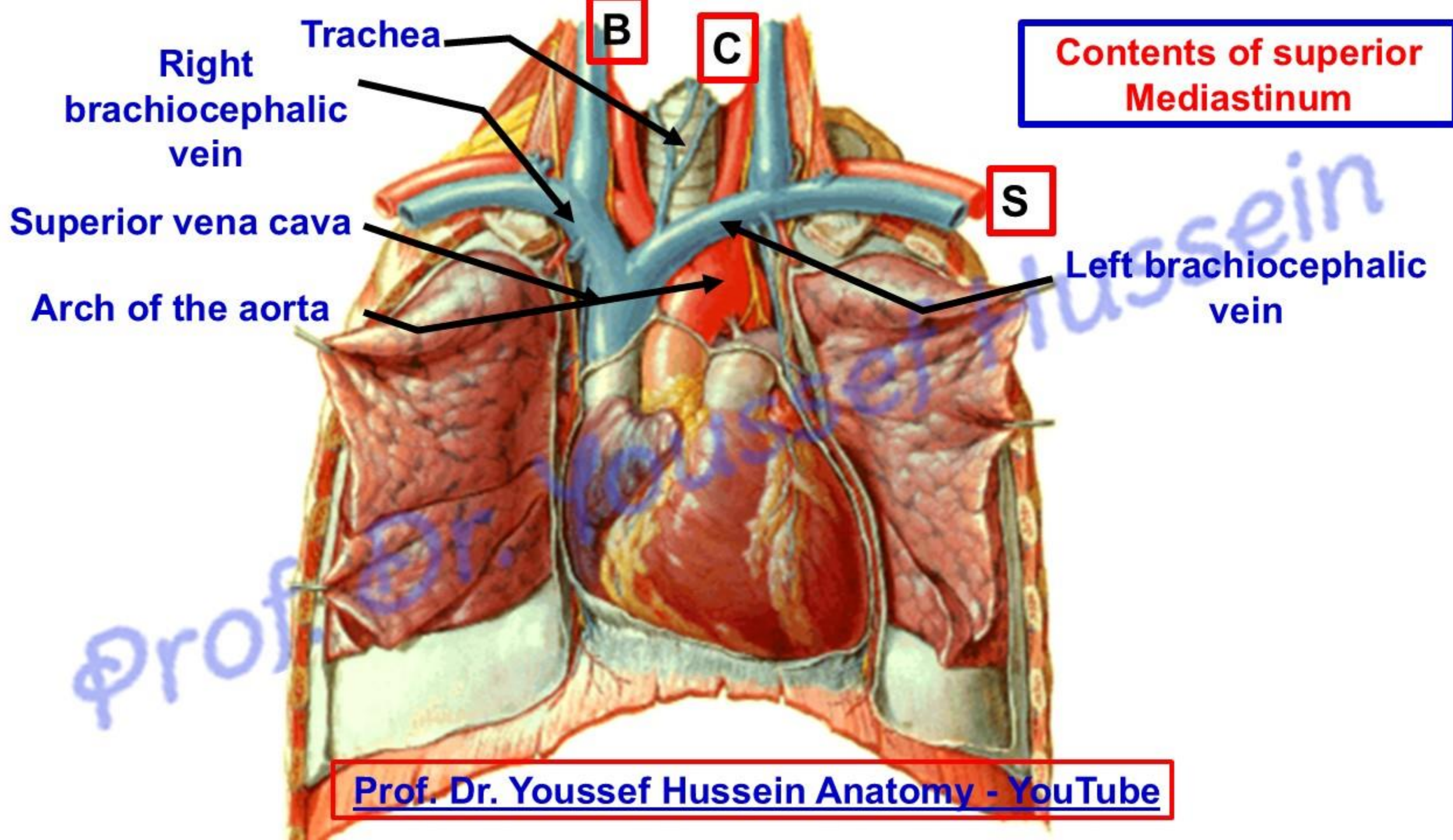
Pericardium

Inferior vena
cava

Pulmonary trunk

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**** Contents of Superior Mediastinum**

1) Thymus gland.

2) Large veins;

a- left brachiocephalic vein.

b- Right brachiocephalic vein.

c- Upper half of superior vena cava.

3) Large arteries;

a- Arch of the aorta:

b- 3 big branches of the aortic arch (B-C-S).

a- Brachiocephalic artery.

b- Left common carotid artery.

c- Left subclavian artery.

4) Trachea.

5) Oesophagus

6) Right and left vagus nerves.

7) Right and left phrenic nerves

**** Applied anatomy:- Mediastinal syndrome,**

- Compression of contents of superior mediastinum by any lesion (Tumor or enlarged lymph nodes, thymus gland).

1- Compression of the veins leading to venous congestion of the upper limb, head and neck.

2- Compression of the arteries leading to ischemia of the upper limb, head & neck.

3- Compression of the trachea leading to dyspnea (difficult of respiration).

4- Compression of the oesophagus leading to dysphagia (difficult in swallowing).

NOSE & PARANASAL SINUSES

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- The **cavity of the nose** is dividing into right and left halves by the **nasal septum**.

- Each cavity opens

A- Anteriorly on the **face** by the anterior nasal aperture (nostril)

B- Posteriorly into the **nasopharynx** by the posterior nasal aperture.

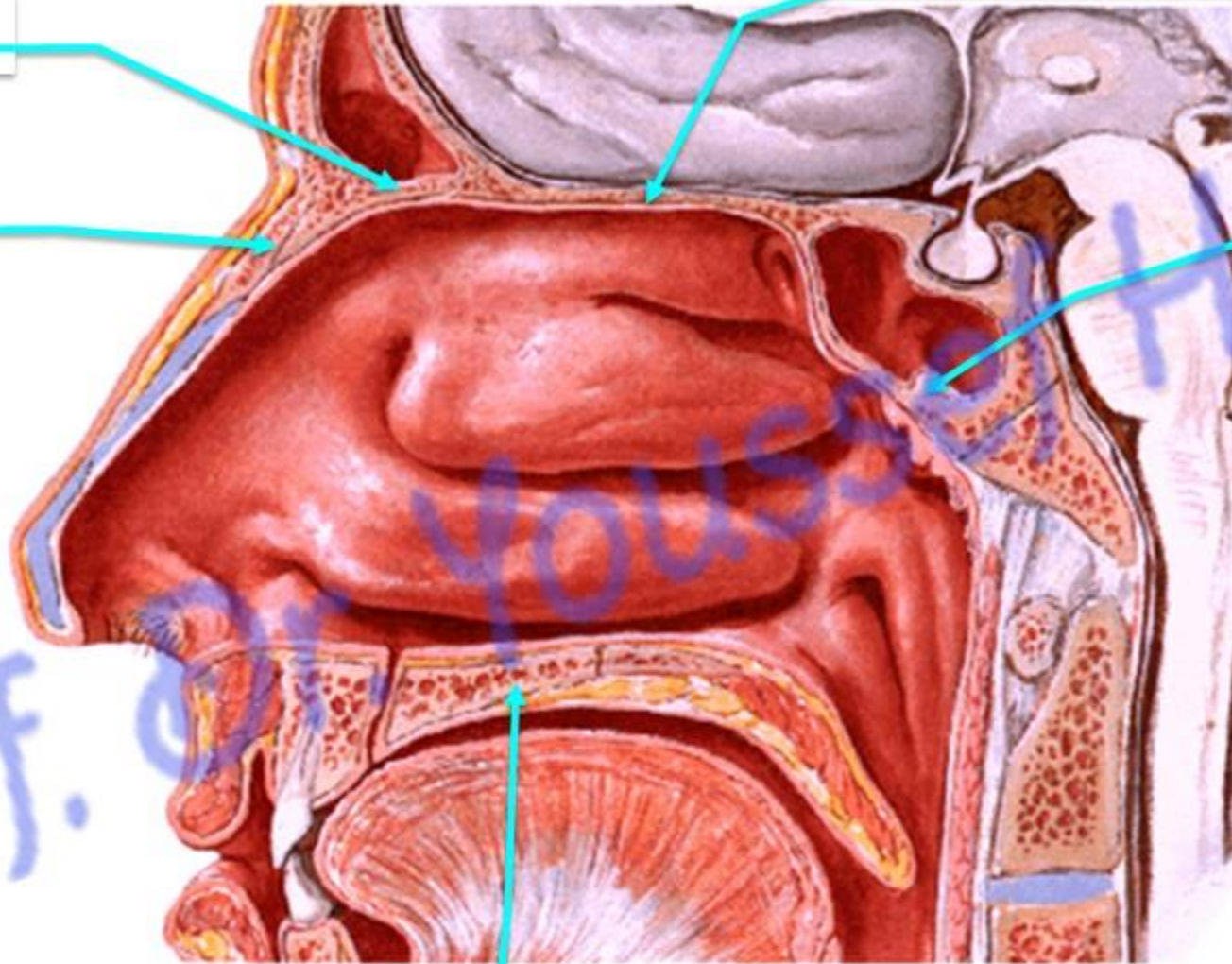
Roof

**Cribriform plate of
ethmoid bone**

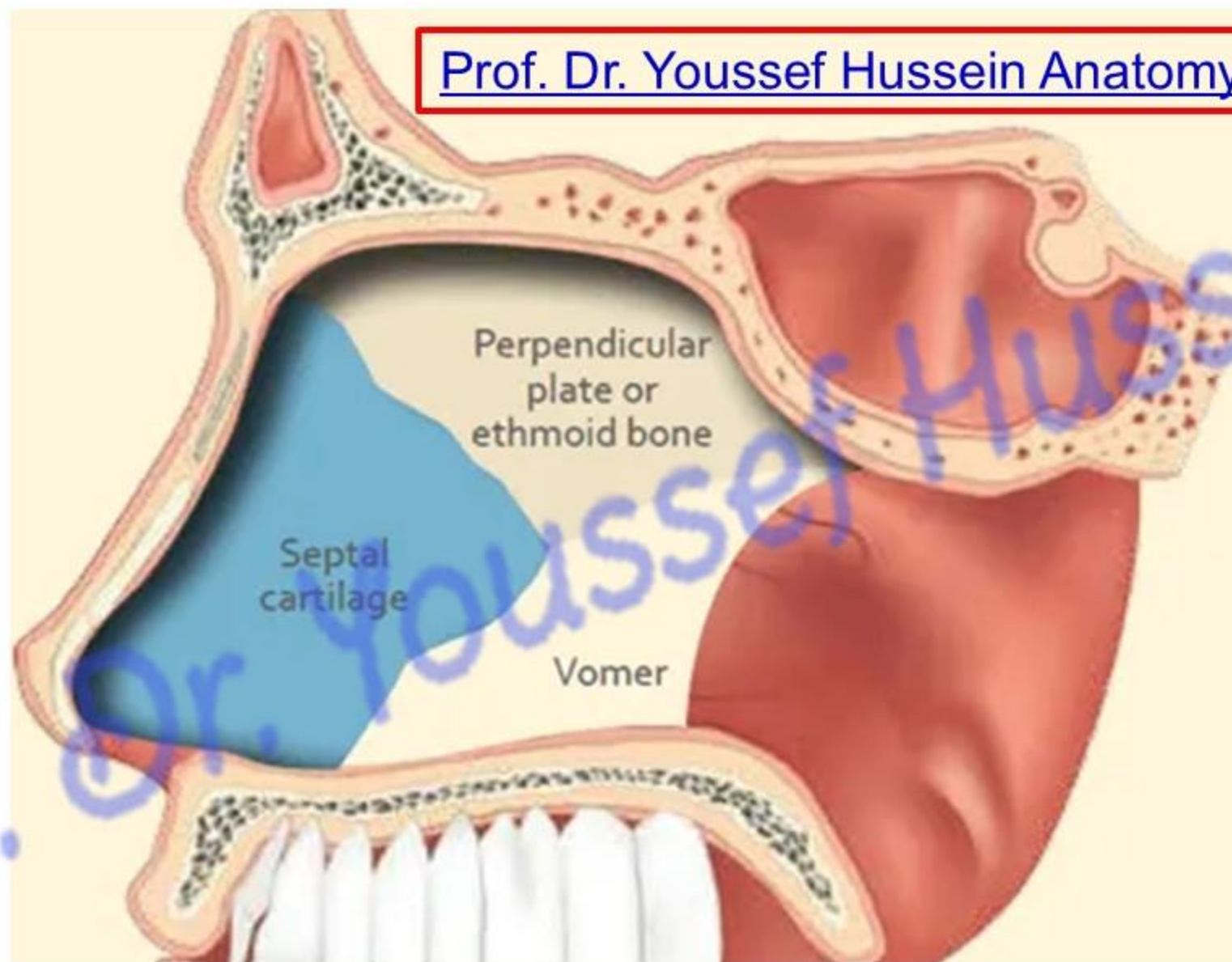
Frontal bone

Nasal bone

**Body of the
sphenoid**



Floor is hard palate separating it from oral cavity



Nasal septum

Sphenoethmoidal recess

Lateral wall

Frontal sinus

Superior concha

Superior meatus

Middle meatus

inferior concha

Inferior meatus

Temp Lobe

Hypothalamus

M B

P

Pons

M O

sphenoid air sinus

middle concha

- **Openings in the nasal meatuses of the lateral wall:**

(1) **Sphenoethmoidal recess**: above the **superior concha**.

- It receives the opening of the **sphenoidal air sinus**.

(2) **Superior Meatus** : below superior concha and receives opening of the **posterior ethmoidal air sinus**.

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(3) **Middle meatus**: below middle concha and **shows**,

a- Bulla ethmoidalis: a rounded elevation overlies the **middle ethmoidal air sinus** and receives its opening.

b- Hiatus semilunaris: a crescent groove below the bulla ethmoidalis receiving the opening of

1) Frontal air sinus opens into the anterior end.

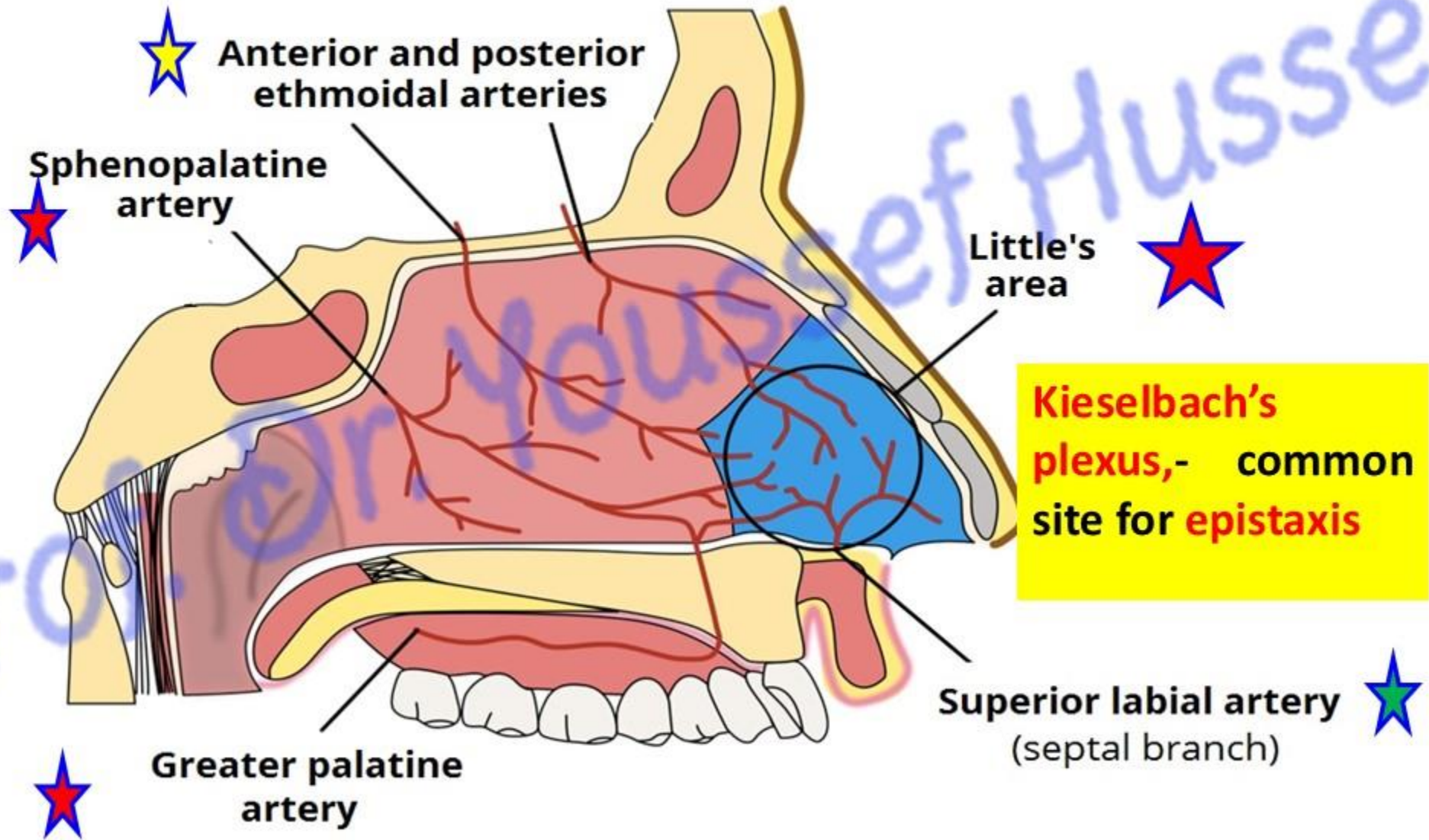
2) Anterior ethmoidal air sinuses.

3) Maxillary air sinus opens near the posterior end.

(4) **Inferior-meatus**: below inferior concha and receives the opening of **nasolacrimal duct**.

Arterial blood supply of the nose

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▪ **Applied anatomy,**

- **Little's area** is an area on the inferior and anterior part of the **nasal septum** showing rich arterial anastomosis (**Kieselbach's plexus**). This anastomosis is formed by;
 - 1) Sphenopalatine artery.
 - 2) Greater palatine artery.
 - 3,4) Anterior and posterior ethmoidal arteries.
 - 5) Septal branch of superior labial artery.
- It is a common site for **epistaxis** (bleeding from the nose).
- **To stop the bleeding:**
 - a- Sit down and firmly pinch the soft part of nose for 10-15 M, **NOT** lean backward because blood drains into throat
 - b- Nasal pack soaked with adrenaline in the vestibule.
 - c- Cauterization of the bleeding arteries.
 - d- Ligation of the 3rd part of the maxillary artery.

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STRUCTURE OF LARYNX

- The larynx is organ of voice and forms an important part of the respiratory tract
- It is formed number of **cartilages** which are articulated by **synovial joints** and connected together by **ligaments** and **membranes** and moved by number of **muscles**.

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Cartilages

3 single

Epiglottis

Thyroid cartilage
(Adam's apple).

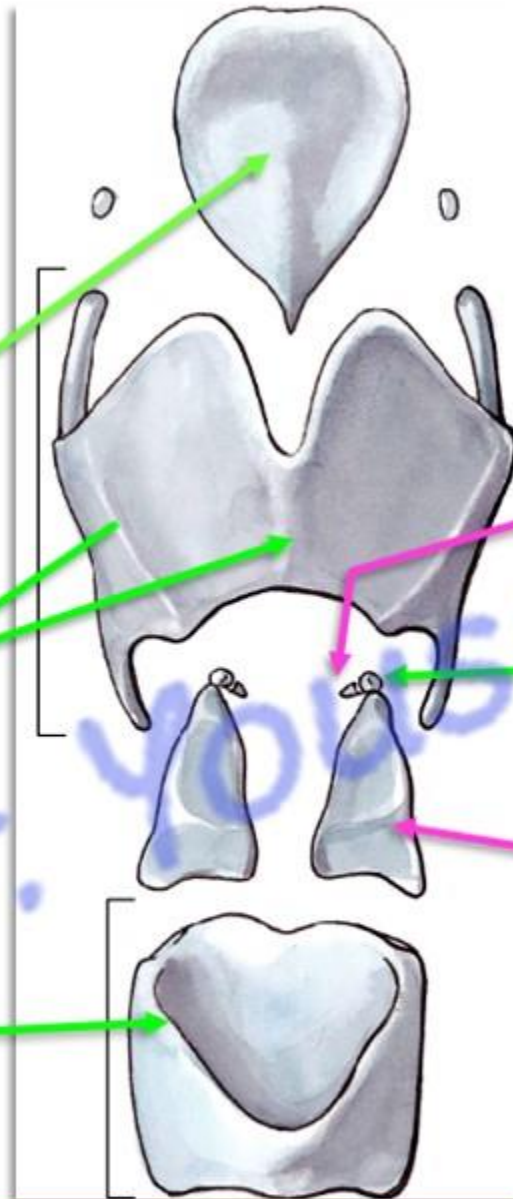
Cricoid
cartilage

3 paired

Cuneiform
cartilage

Corniculate cartilage

Arytenoid cartilage



signet-ring shaped



Cricoid cartilage

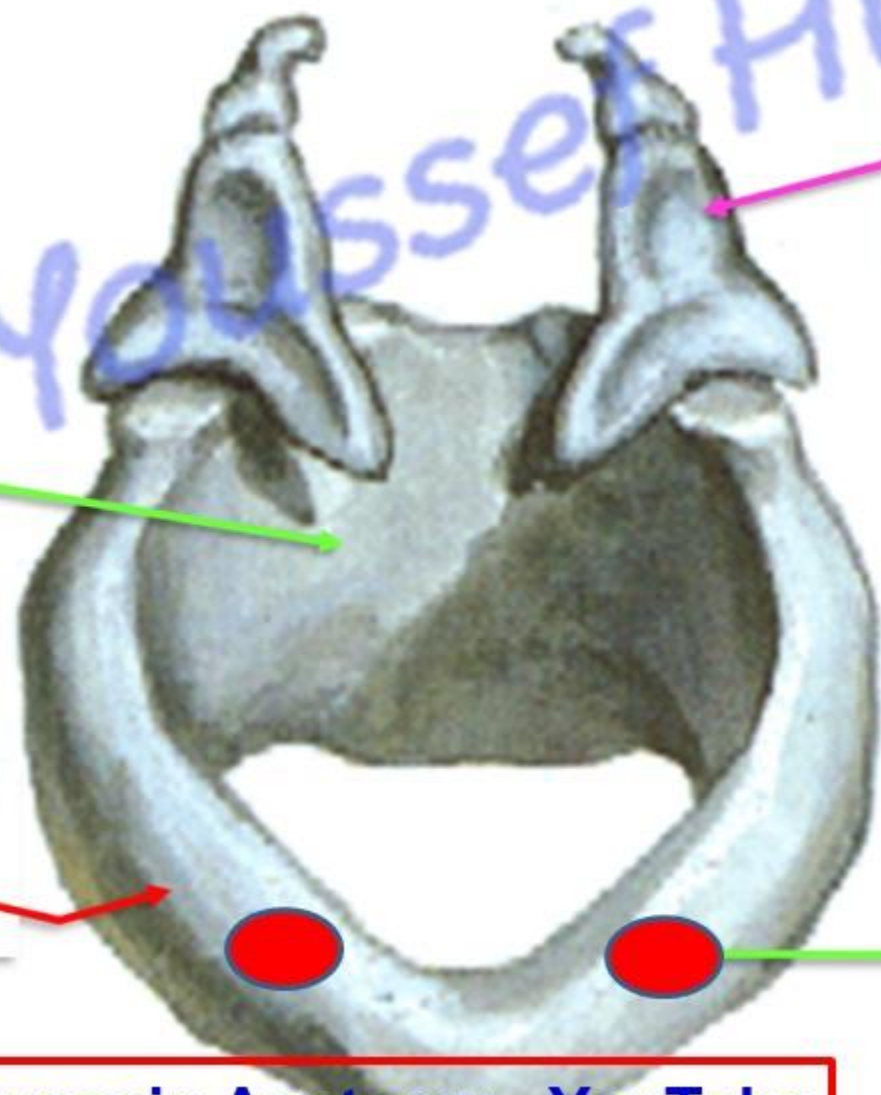
Arytenoid cartilage (Key cartilage of the larynx)

Is the only complete cartilaginous ring in the whole of air passage

Inferior horn of thyroid cartilage

Narrow anterior arch

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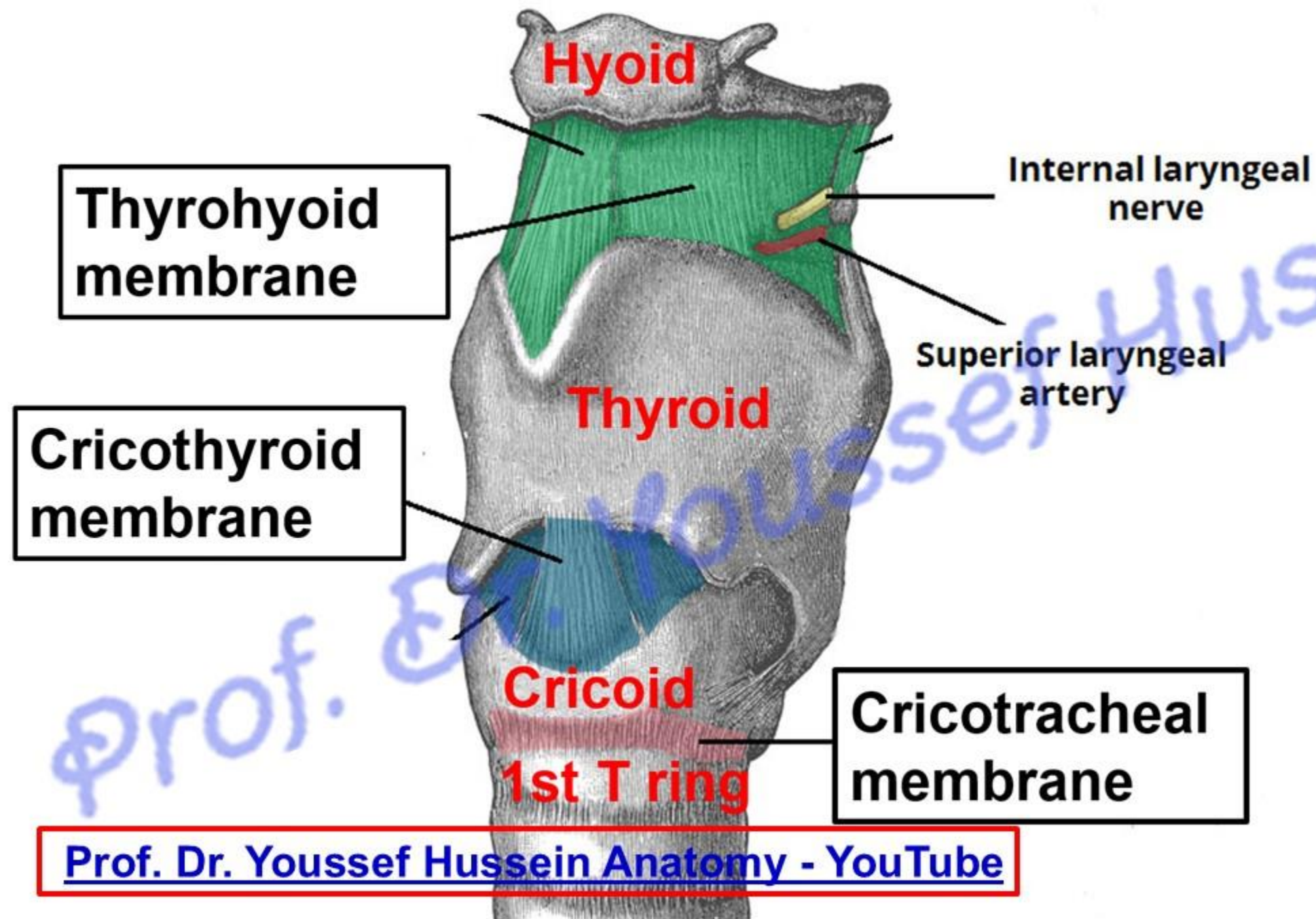
- **Cricoid cartilage** حلقى

- It is **ring-shaped** having a broad **lamina posteriorly** and a narrow **arch anteriorly**.
- It lies opposite the **6th** cervical vertebrae.
- **It articulates with**
 - a- Posteriorly:** upper border of the lamina articulates with **two** arytenoids cartilages (**cric arytenoid joint**).
 - b- The anterolateral aspect** of the arch articulates with the inferior horn of the **thyroid cartilage** (**cricothyroid joint**).

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MEMBRANES AND LIGAMENTS OF LARYNX

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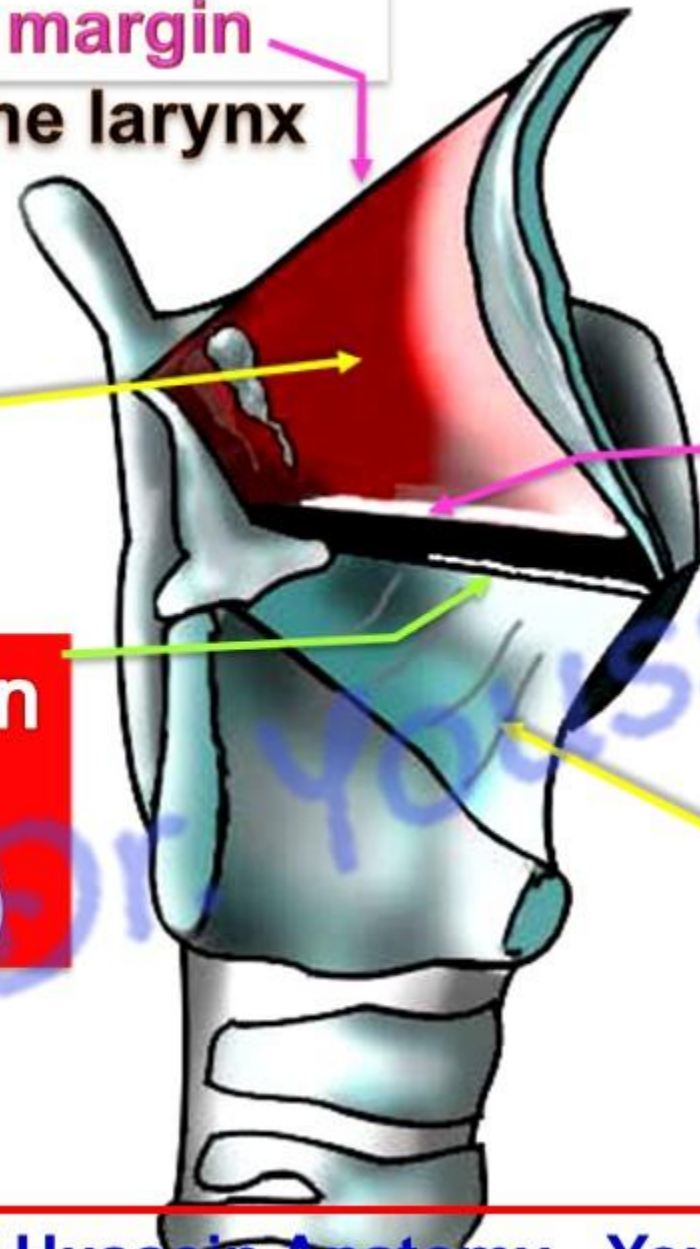
Upper Free margin
Opening of the larynx

Quadrangular Membrane

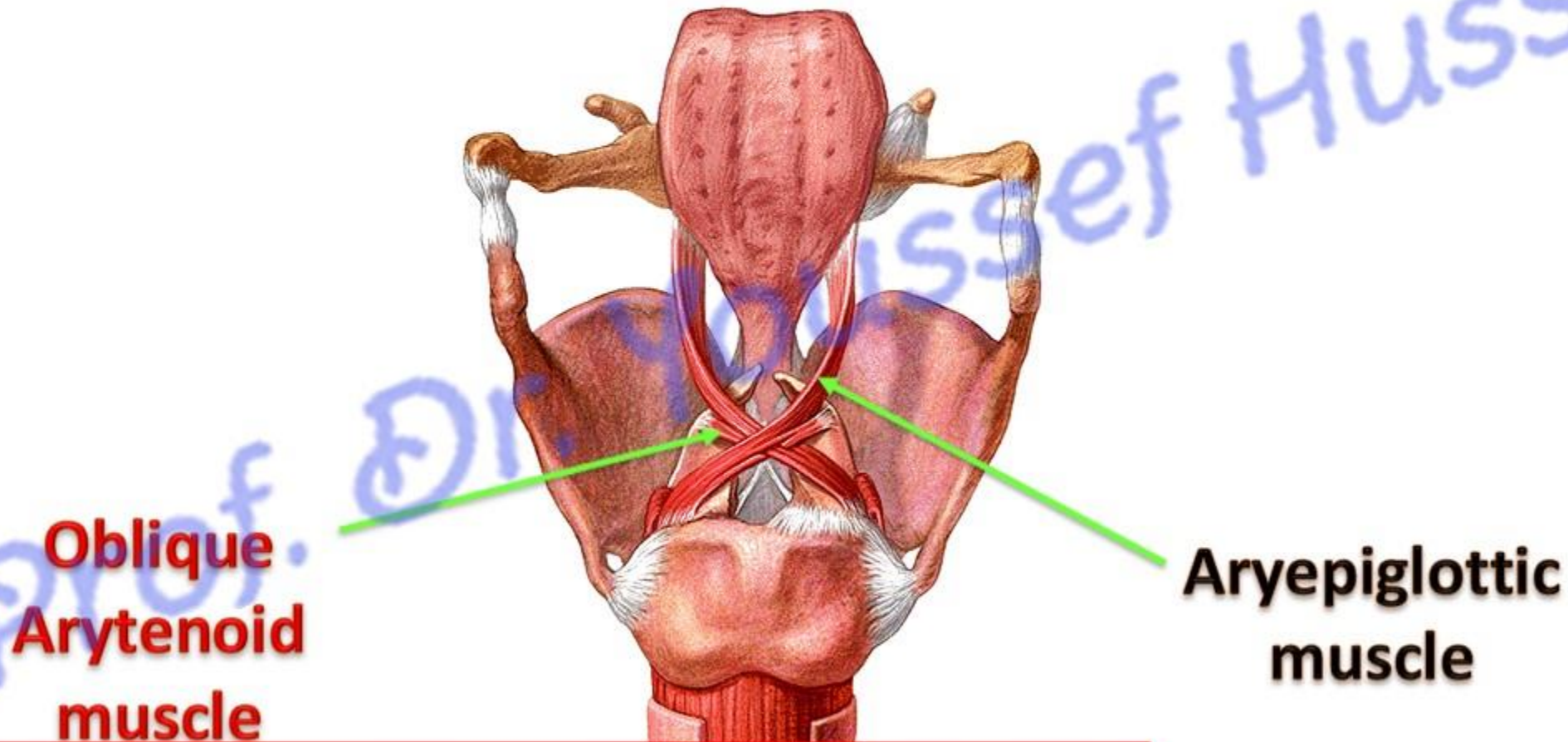
Upper free margin
(Vocal fold
True vocal cord)

lower Free margin
(Vestibular fold- False
vocal cord)

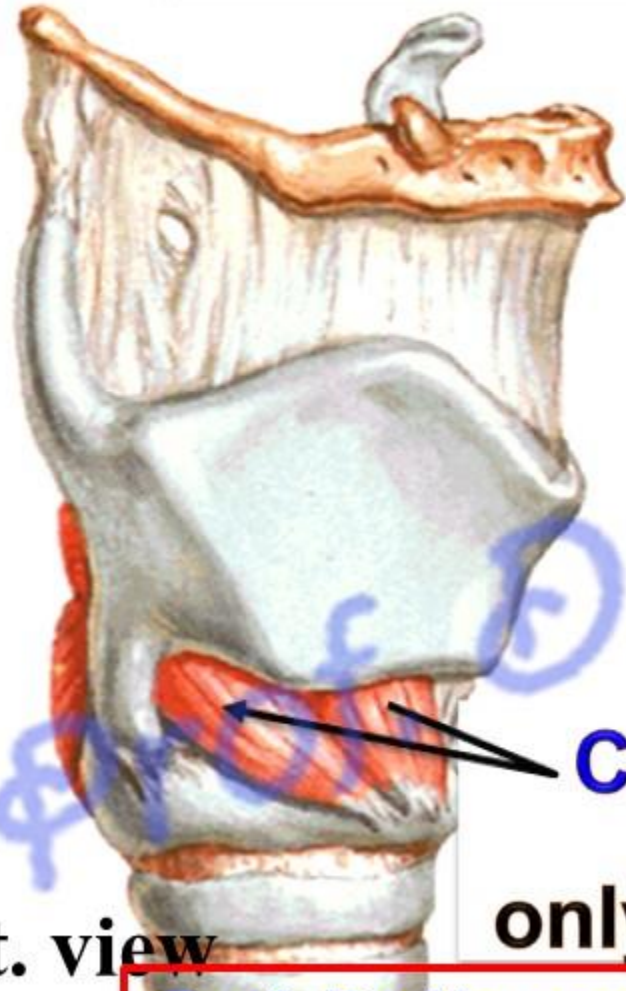
Cricothyroid membrane



Muscles Controls the inlet of larynx (act as sphincter of the inlet)



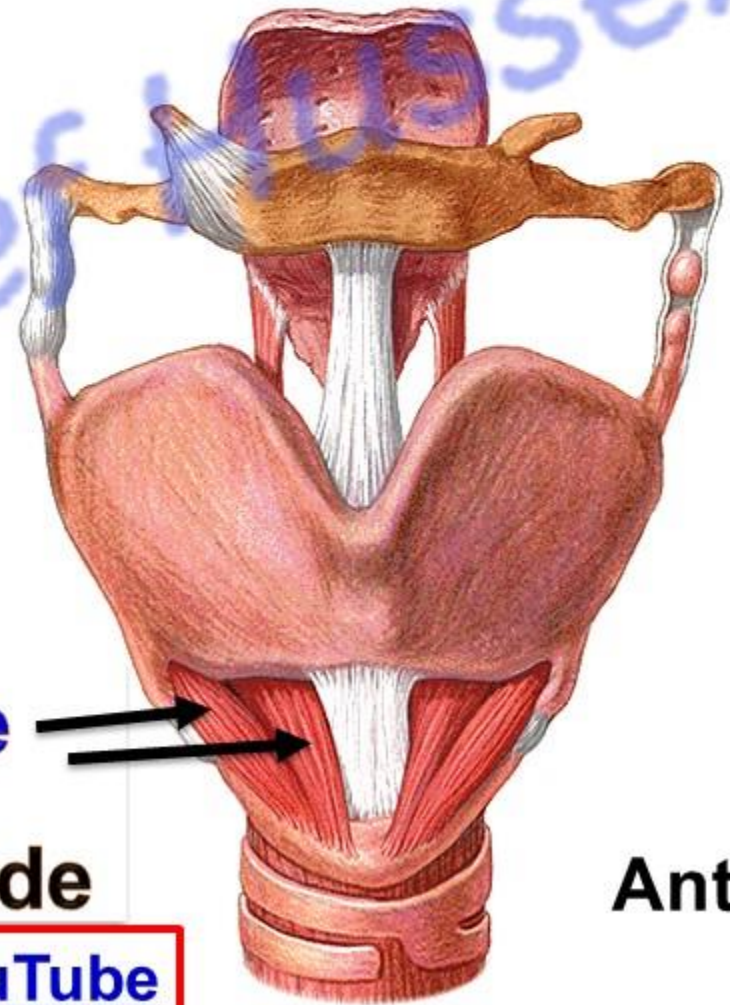
Muscles which stretch the vocal cords
(Cricothyroid muscle)



Lat. view

Cricothyroid muscle

only muscle lies outside



Ant. view

Muscles abduct and adduct the vocal cord

Adduction

Abduction

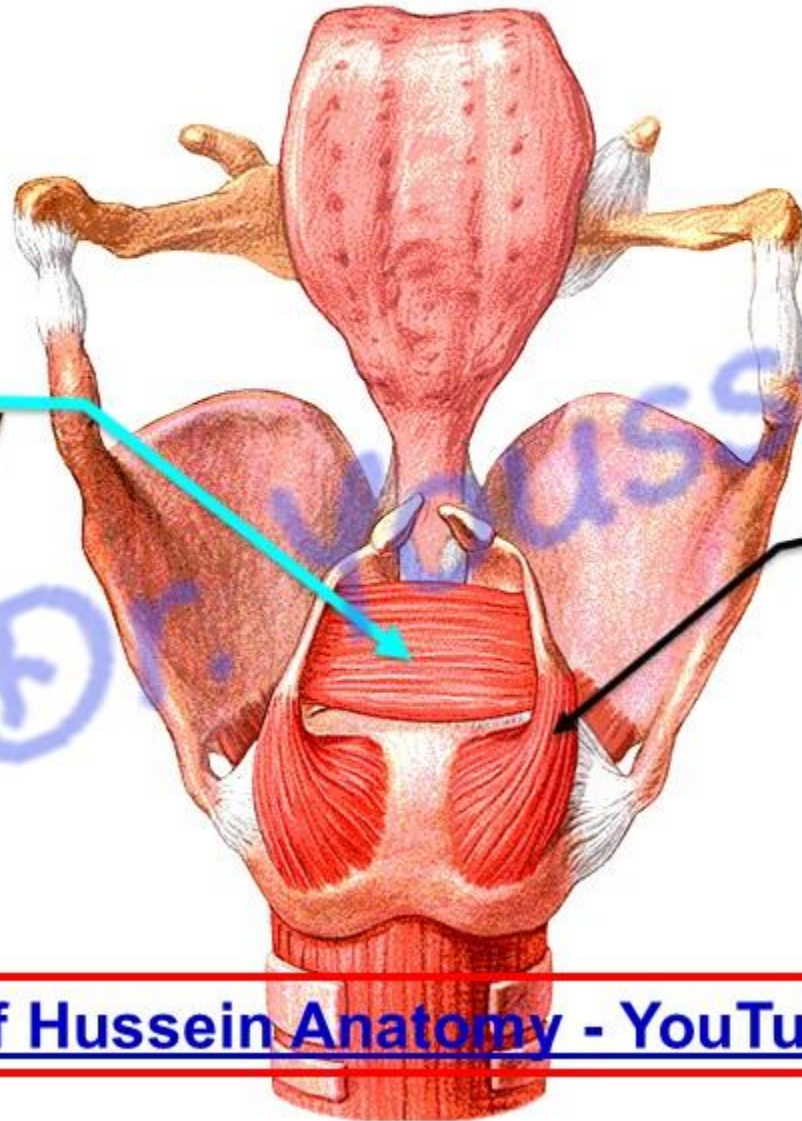
**Transverse
Arytenoid (Only
single)**

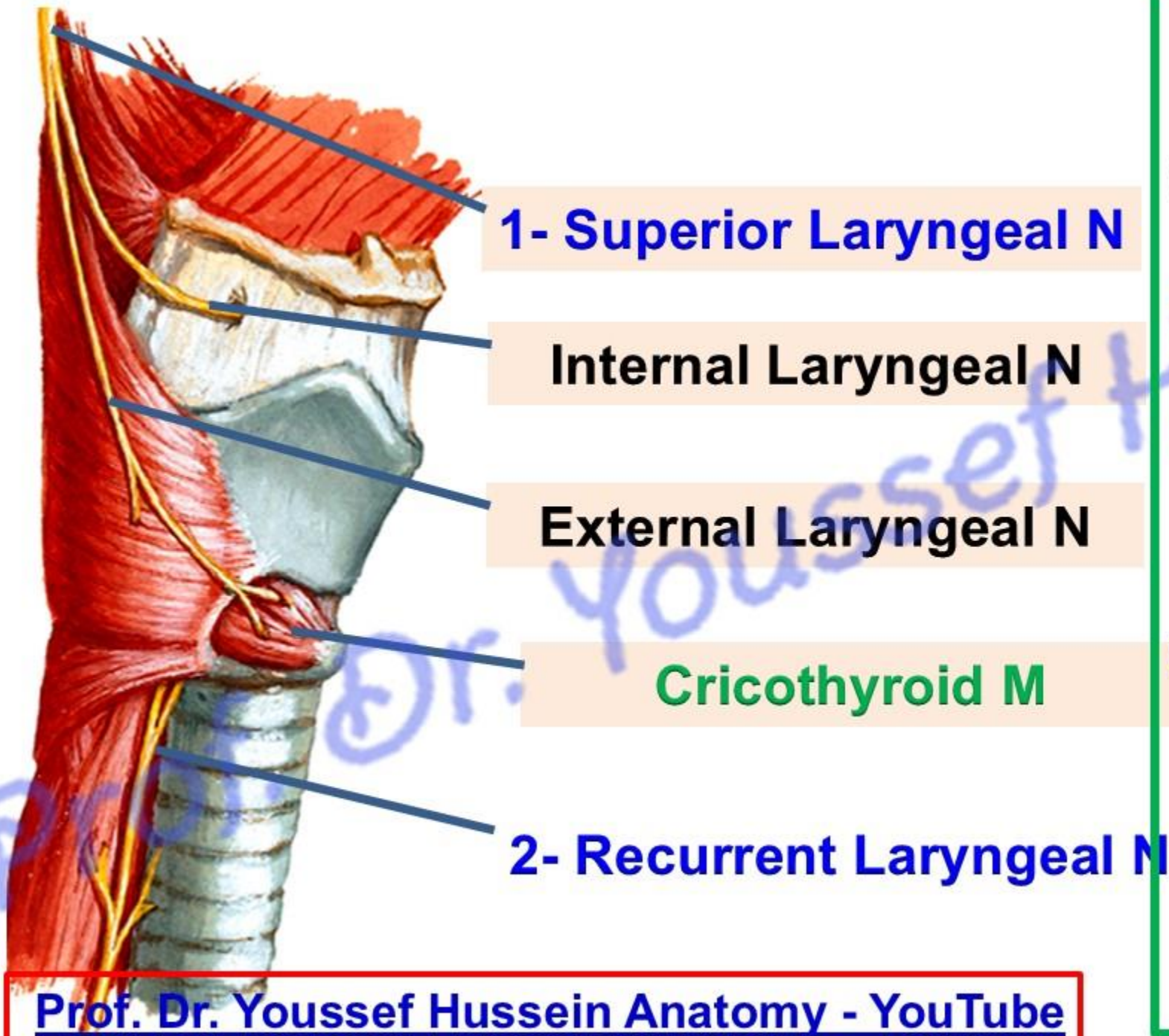
- Lateral
cricoarytenoid

Posterior Cricoarytenoid

**The most important
muscle**

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• NERVE SUPPLY OF THE LARYNX

(1) Motor supply

- All the intrinsic laryngeal muscles are supplied by recurrent laryngeal nerves except cricothyroid muscle is supplied by external laryngeal nerve.

(2) Sensory supply to the mucous membrane :

a- Internal laryngeal nerve above the vocal folds.

b- Recurrent laryngeal nerve below the vocal folds.

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Trachea

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Trachea

- It is a cartilaginous tube forms a part of the respiratory system.

**

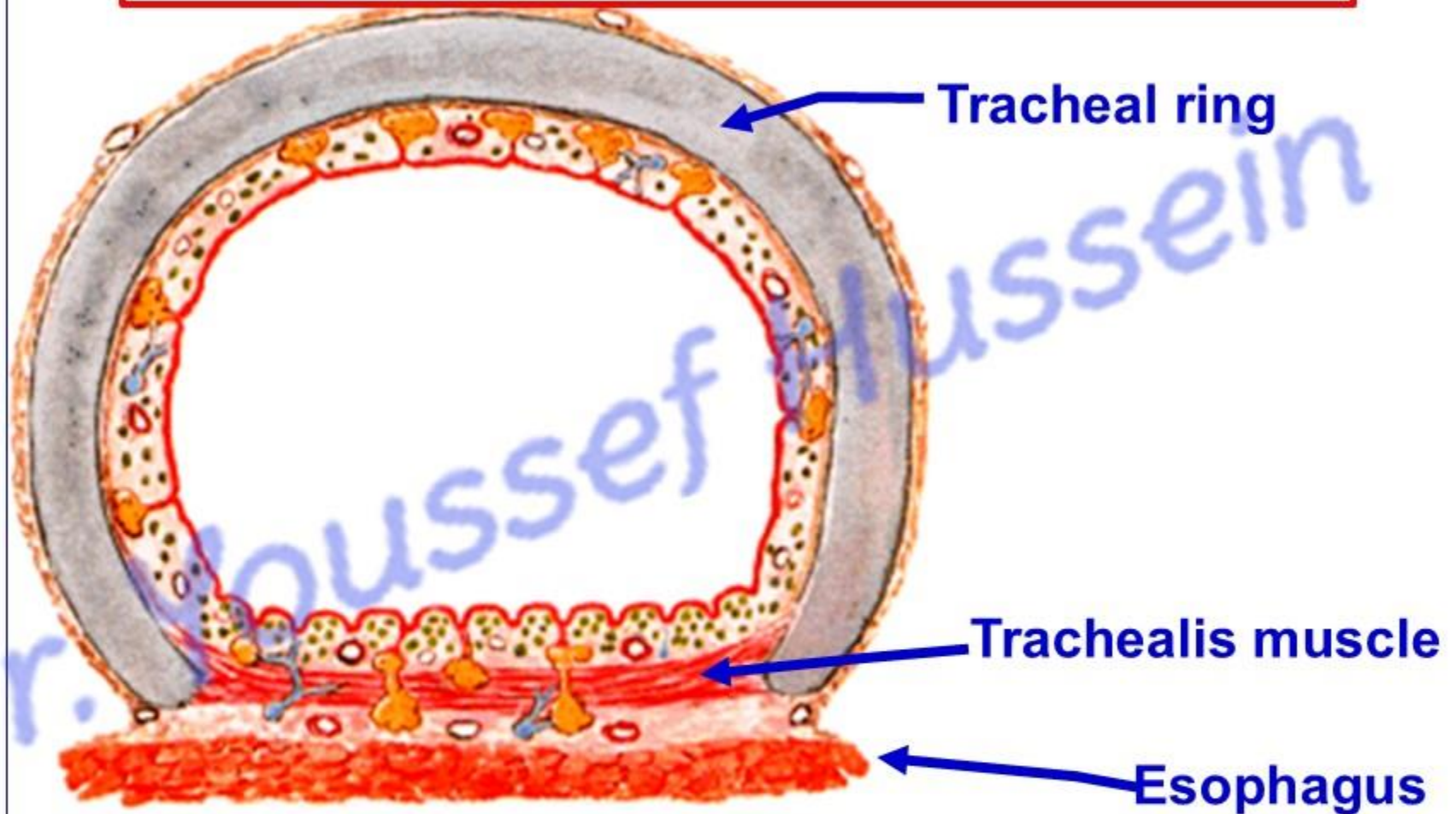
Length; 10 to 15 cm



Begin at the level of **C6** as a continuation of the larynx

End in thorax slightly to the **right of the median plane** at level of sternal angle (lower border of **T4**) by dividing into right and left bronchi

- It is formed of **18-20 C-shaped** cartilaginous rings.
- The concavity of the ring directed posteriorly and completed by a plain muscle (**trachealis**) and fibro-elastic tissue that allow dilatation of the esophagus during deglutition.



Tracheostomy

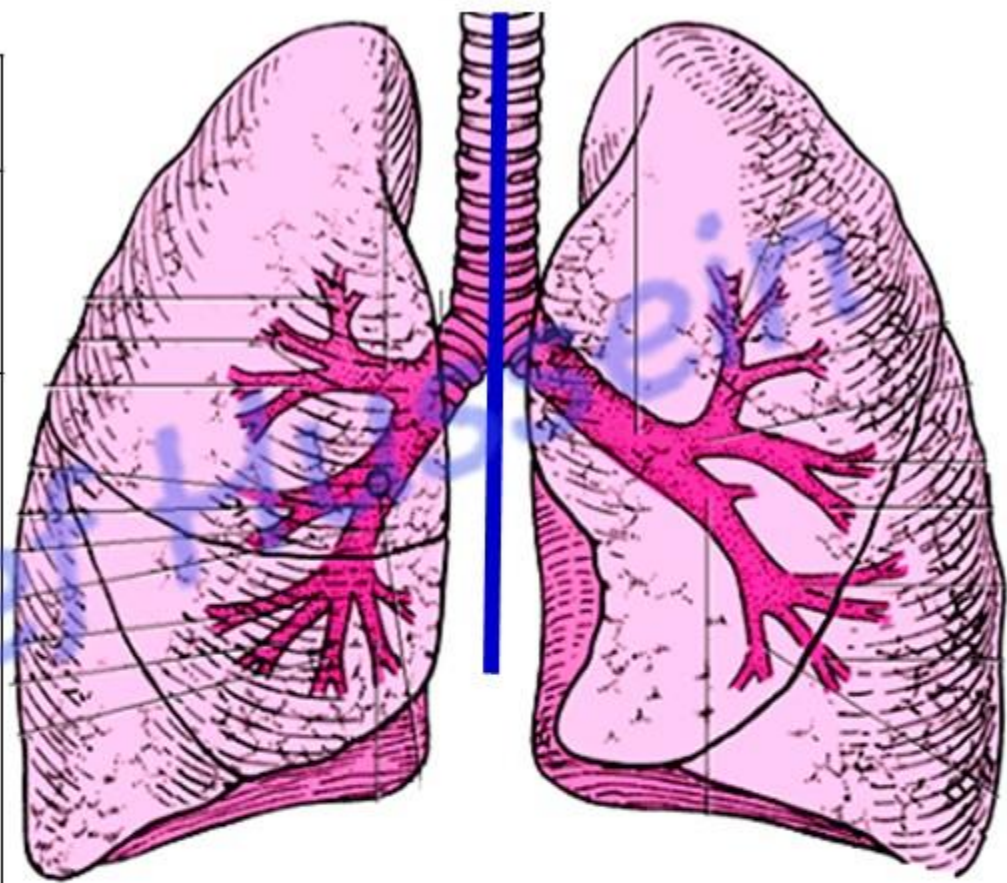
- **Tube inserted in the trachea** midway between thyroid cartilage and sternal notch, approximate at the 2nd tracheal ring

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Bronchi

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	Right Bronchus	Left Bronchus
Diameter	Wide & short.	Narrow & long.
Direction	- It is more vertical and form angle about 15 degree with the trachea - SO, the foreign bodies and aspirated material pass to the right lung	- more oblique and form angle about 45 degree with the trachea.



Lungs Pleura

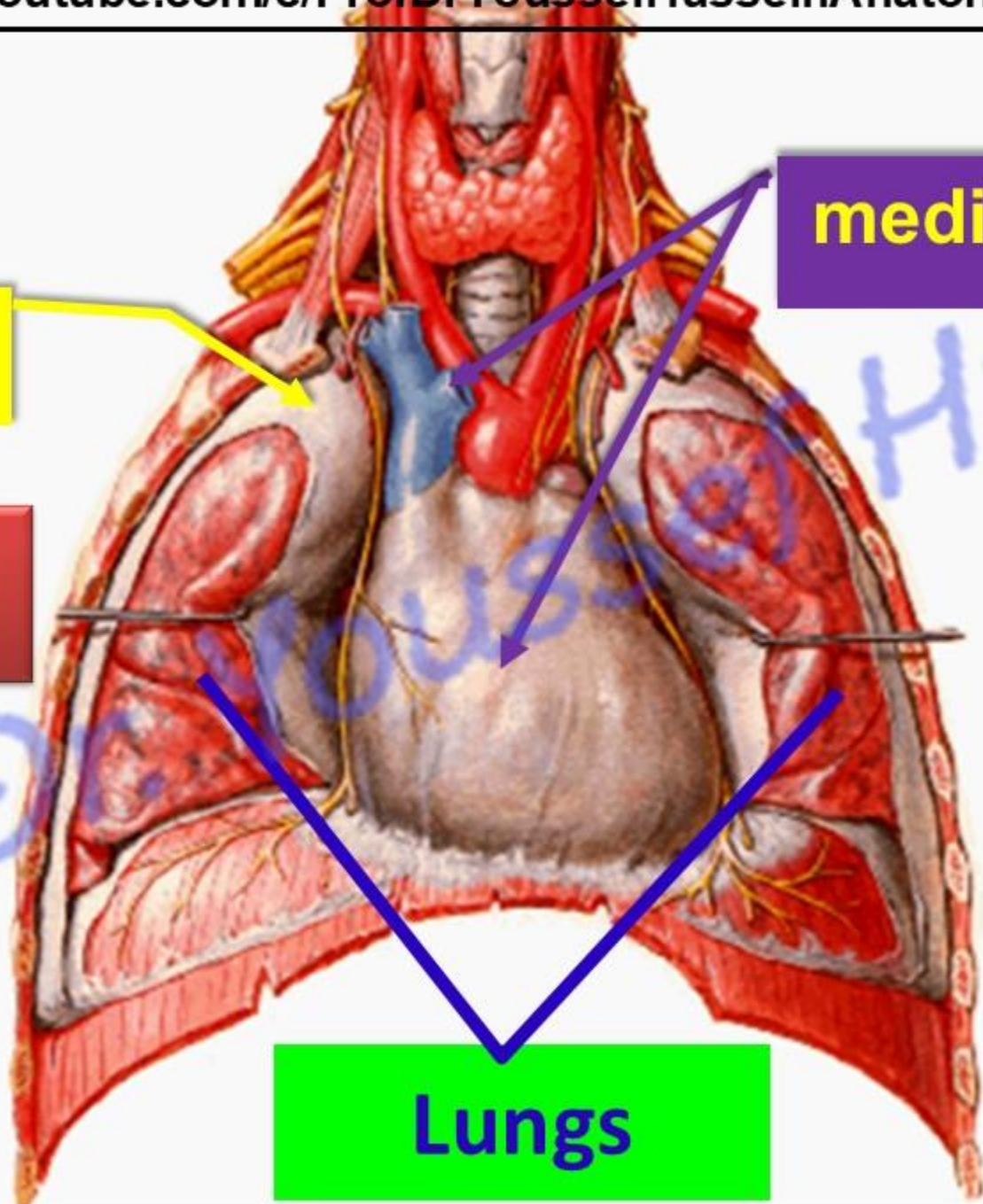
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Pleura

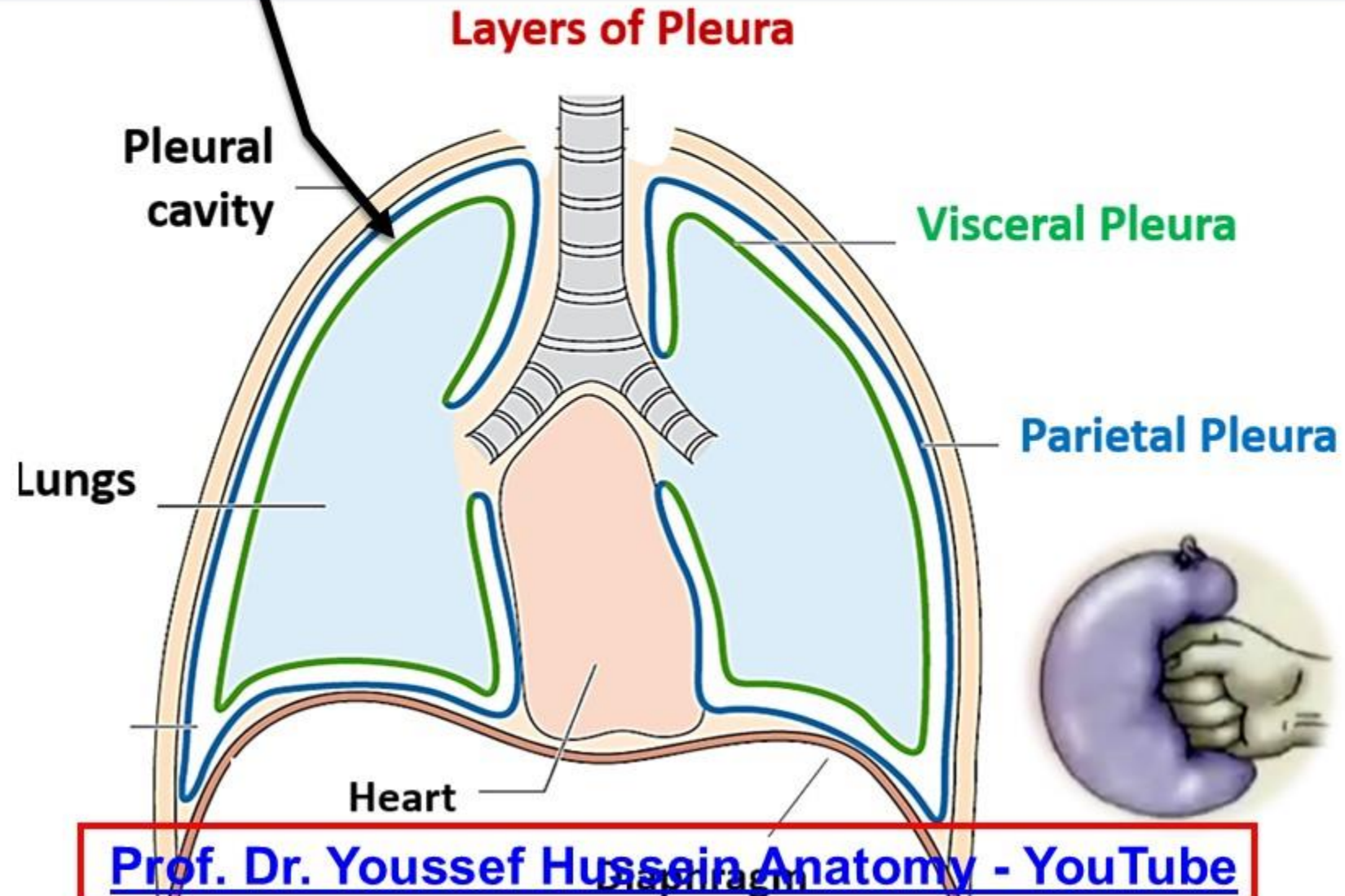
Position

mediastinum

Lungs

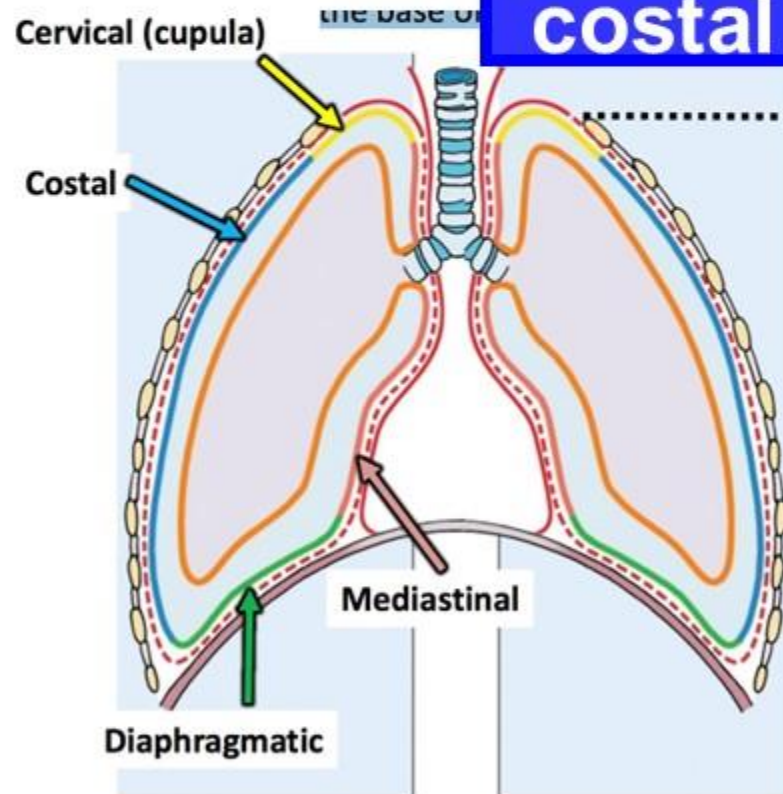


- Pleura is a closed serous sac invaginated by lung from its medial side. It consists of 2 layers. It contains serous fluid, that acts as a lubricant.

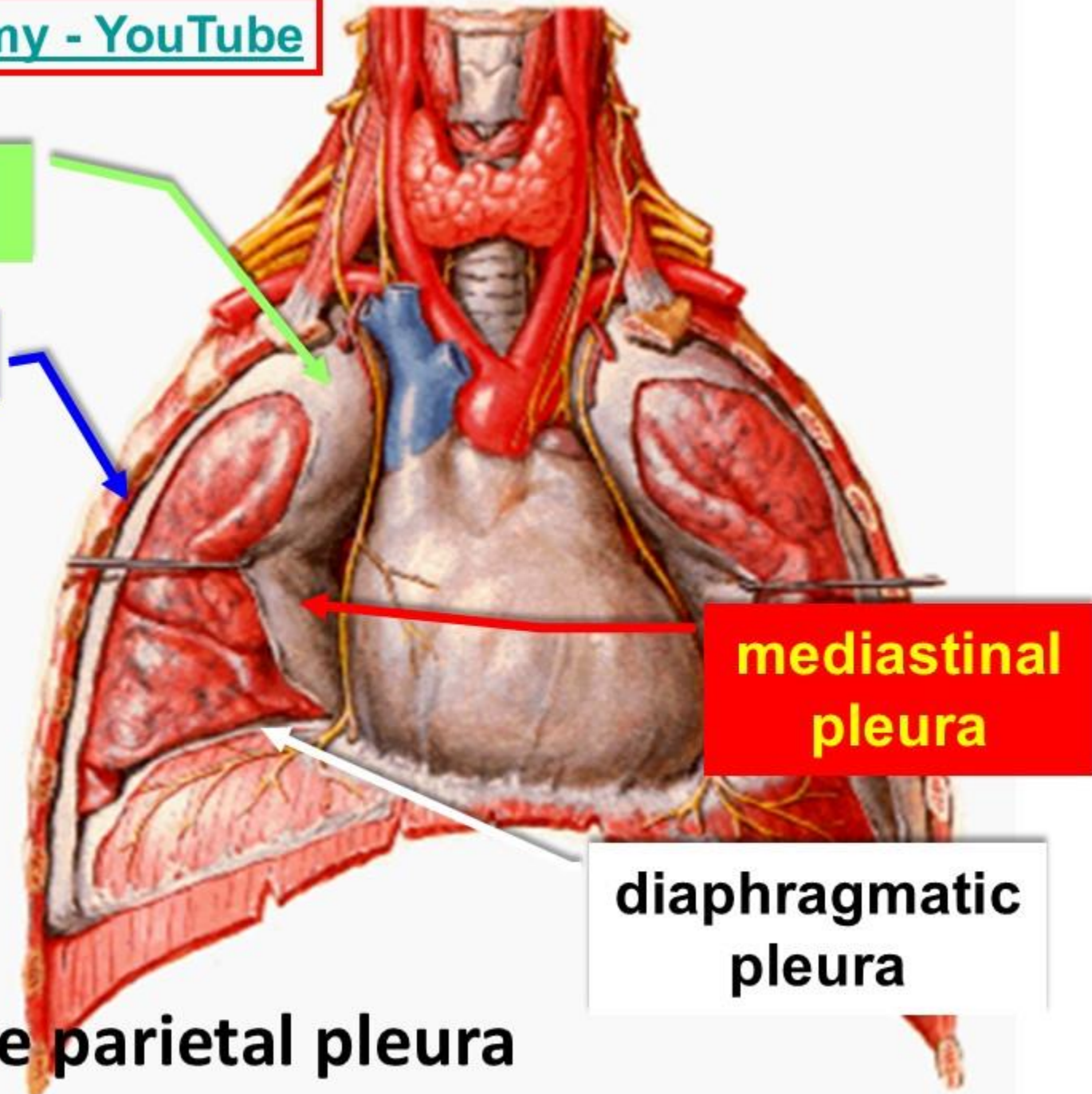


Cervical pleura

costal pleura



Parts of the parietal pleura



Apex of lung

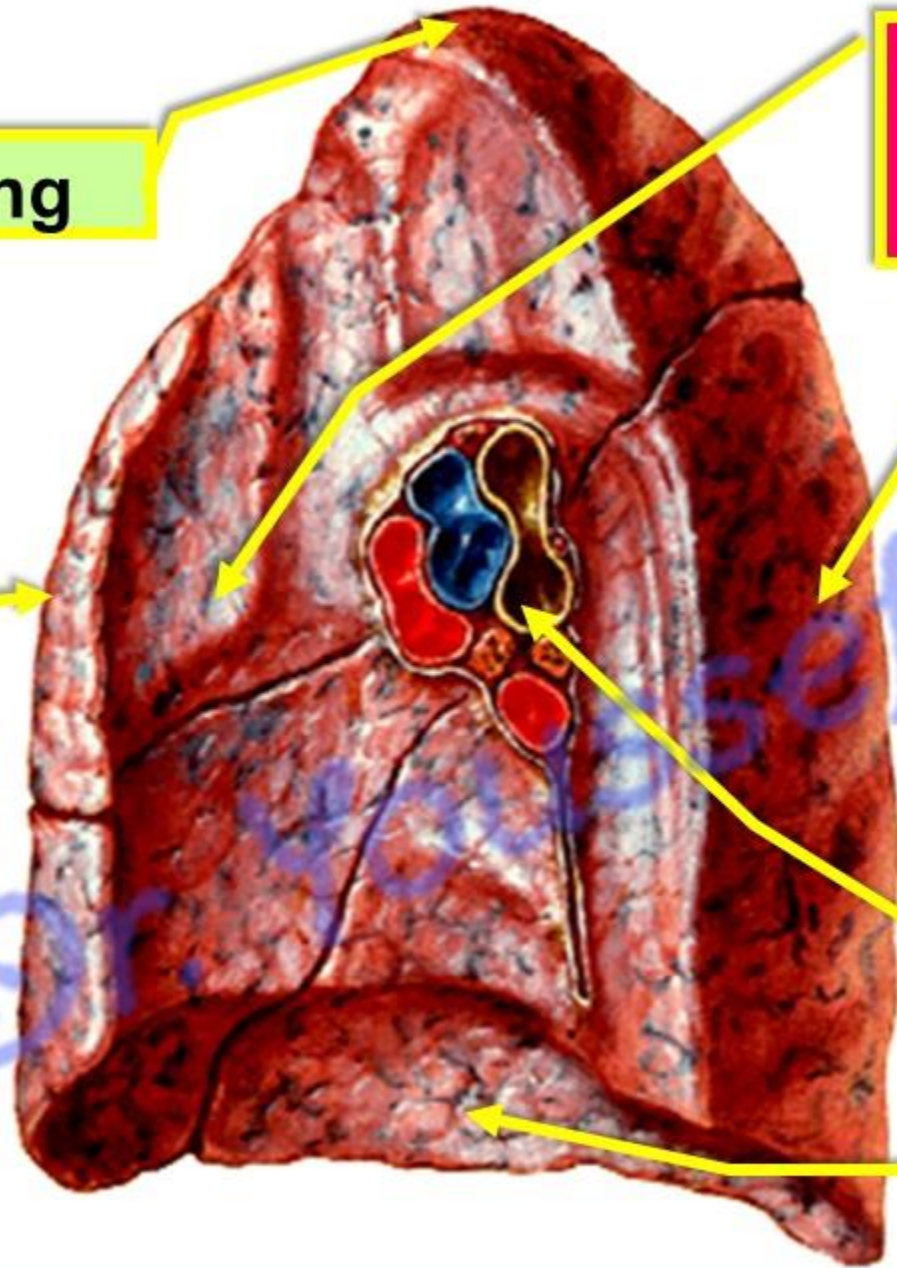
**mediastinal
surface**

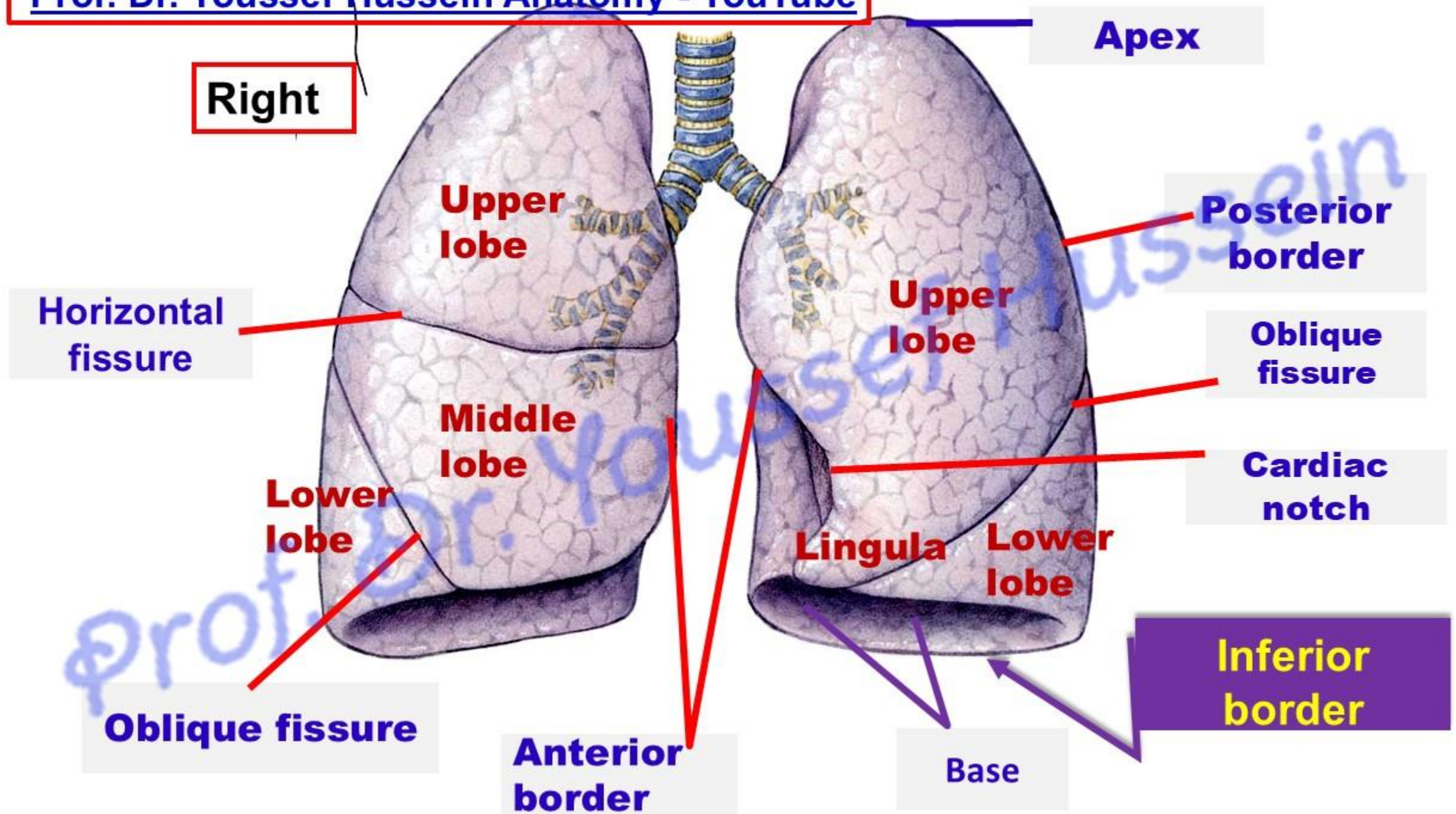
Costal surface

**Vertebral
surface**

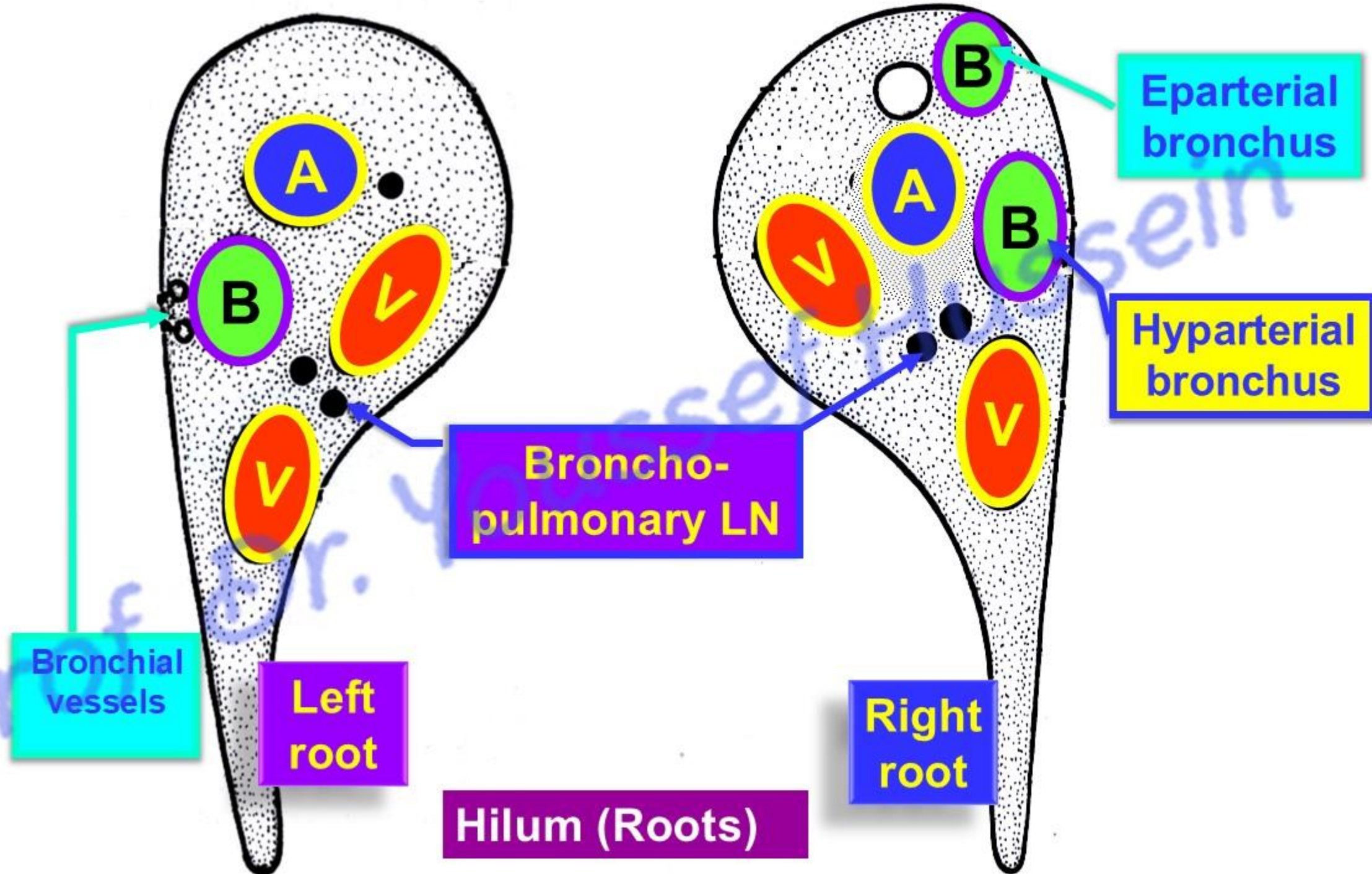
Hilum of lung

Base of lung





	Right lung	Left lung
1-Size	Larger	Smaller
2- Length and Breadth	Shorter and wider	Longer & narrower
3- Anterior border	Straight	cardiac notch & lingula below notch
4- Fissures	2 (oblique & horizontal)	1 (oblique)
5- Lobes	3 (upper, middle & lower)	2 (upper & lower)



	Hilum of Right lung	Hilum of Left lung
Bronchus	2 bronchi; a) Eparterial (behind and above pulmonary artery). b) Hyparterial (behind and below pulmonary artery).	Only one bronchus (Behind and below pulmonary artery).
Pulmonary A	One artery	One artery
2 pulmonary veins	- Superior in front of pulmonary artery. - Inferior (lower).	- Superior in front of pulmonary artery. - Inferior (lower).
bronchial vessels	Posterior to bronchi	Posterior to bronchi
Lymph nodes	Broncho-pulmonary lymph nodes.	Broncho-pulmonary lymph nodes.

**** Blood supply of the lung**

**** Arterial supply:**

a- Left lung: upper and lower left bronchial arteries from the descending thoracic aorta.

b- Right lung: Right bronchial artery arises either: from The right 3rd posterior intercostal artery.

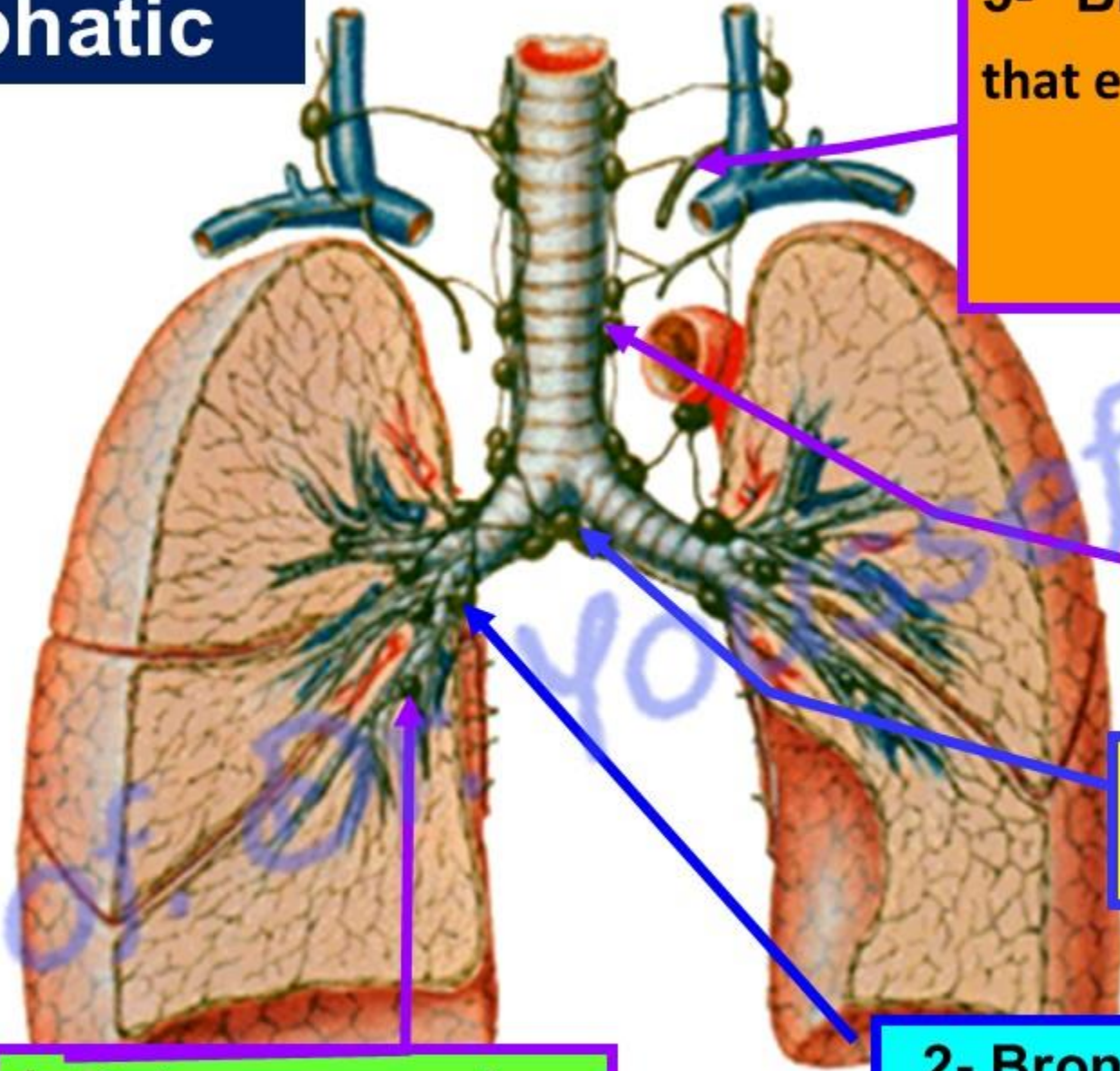
- Or from the upper left bronchial artery.

**** Venous drainage:**

- Right bronchial veins end into the arch of azygos vein.

- Left bronchial veins end into accessory hemiazygos vein.

Lymphatic



5- Bronchomediastinal lymph trunk that ends in:

- a- Thoracic duct (Left side).
- b- Right lymph trunk (Right side)

4- Pre and Paratracheal nodes in front and on each side of trachea

3- Tracheobronchial nodes at the bifurcation of the trachea

1- Pulmonary nodes in the hilum

2- Bronchopulmonary nodes at the termination of the bronchi

Segmental Branches of the Bronchus

- **Segmental Branches of Right Bronchus**

Apical segmental bronchus

Anterior

Posterior

Lateral

Medial

Apical

Lateral basal

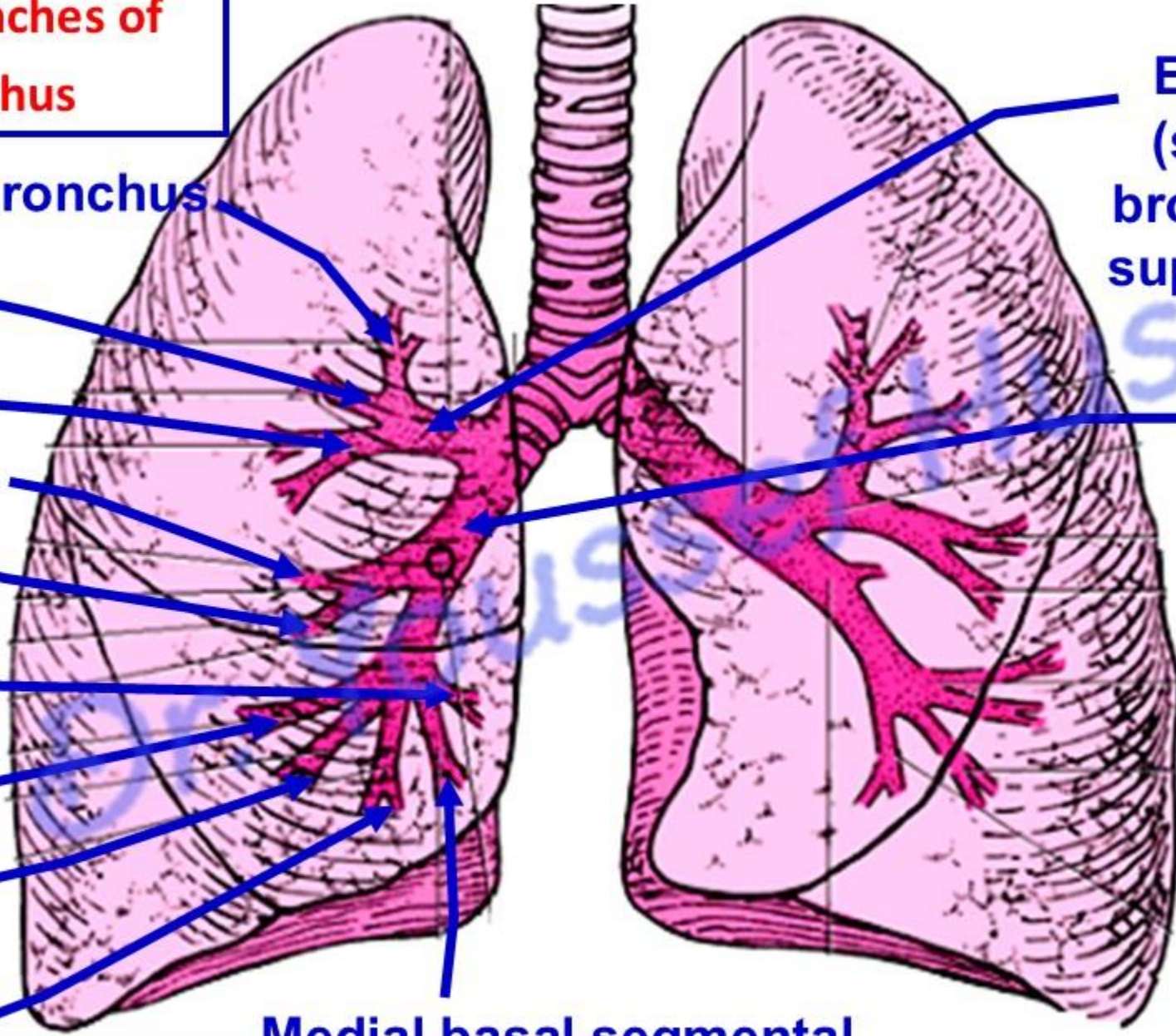
Anterior basal

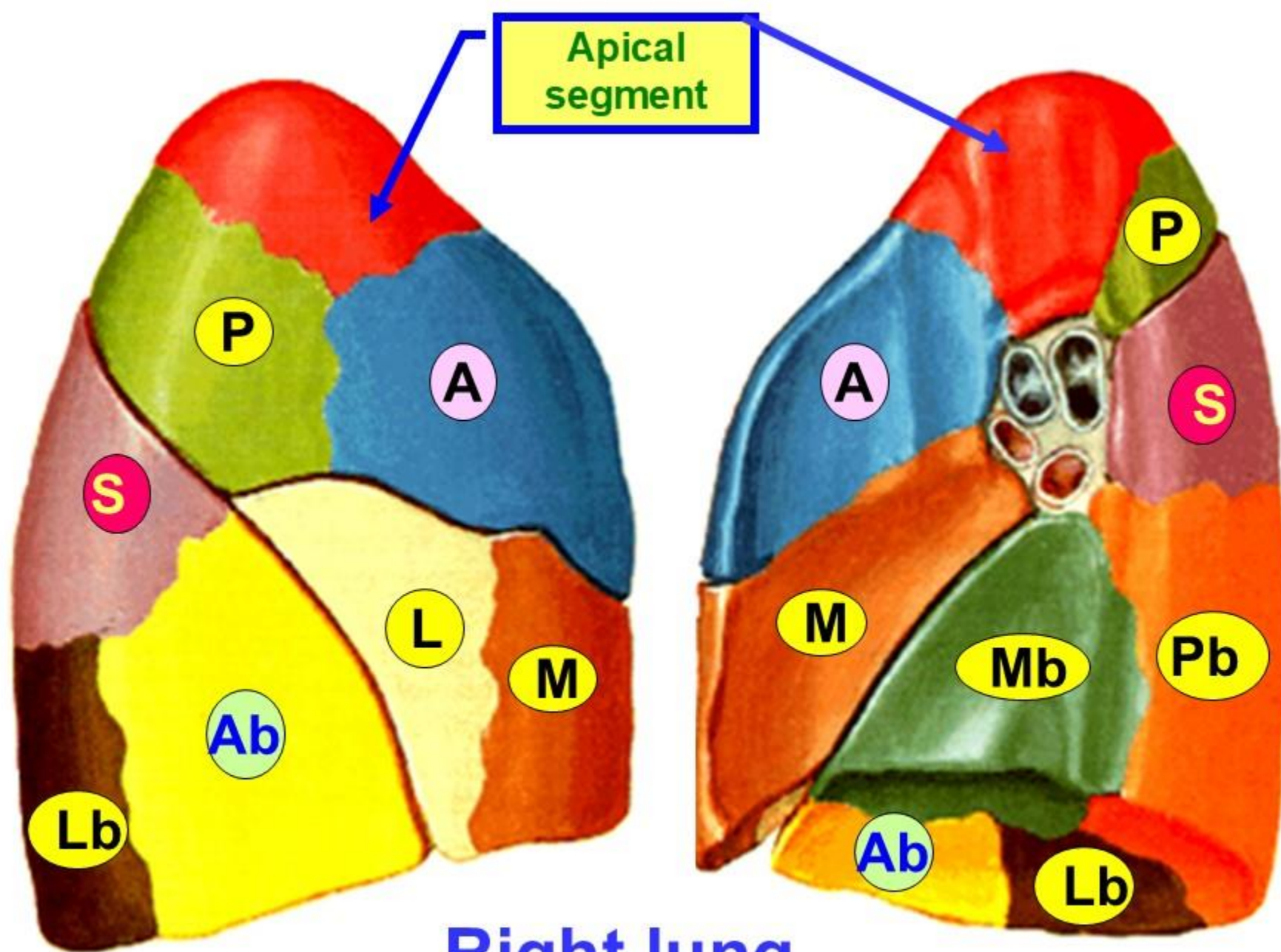
Posterior basal

Medial basal segmental

Eparterial
(superior)
bronchus for
superior lobe

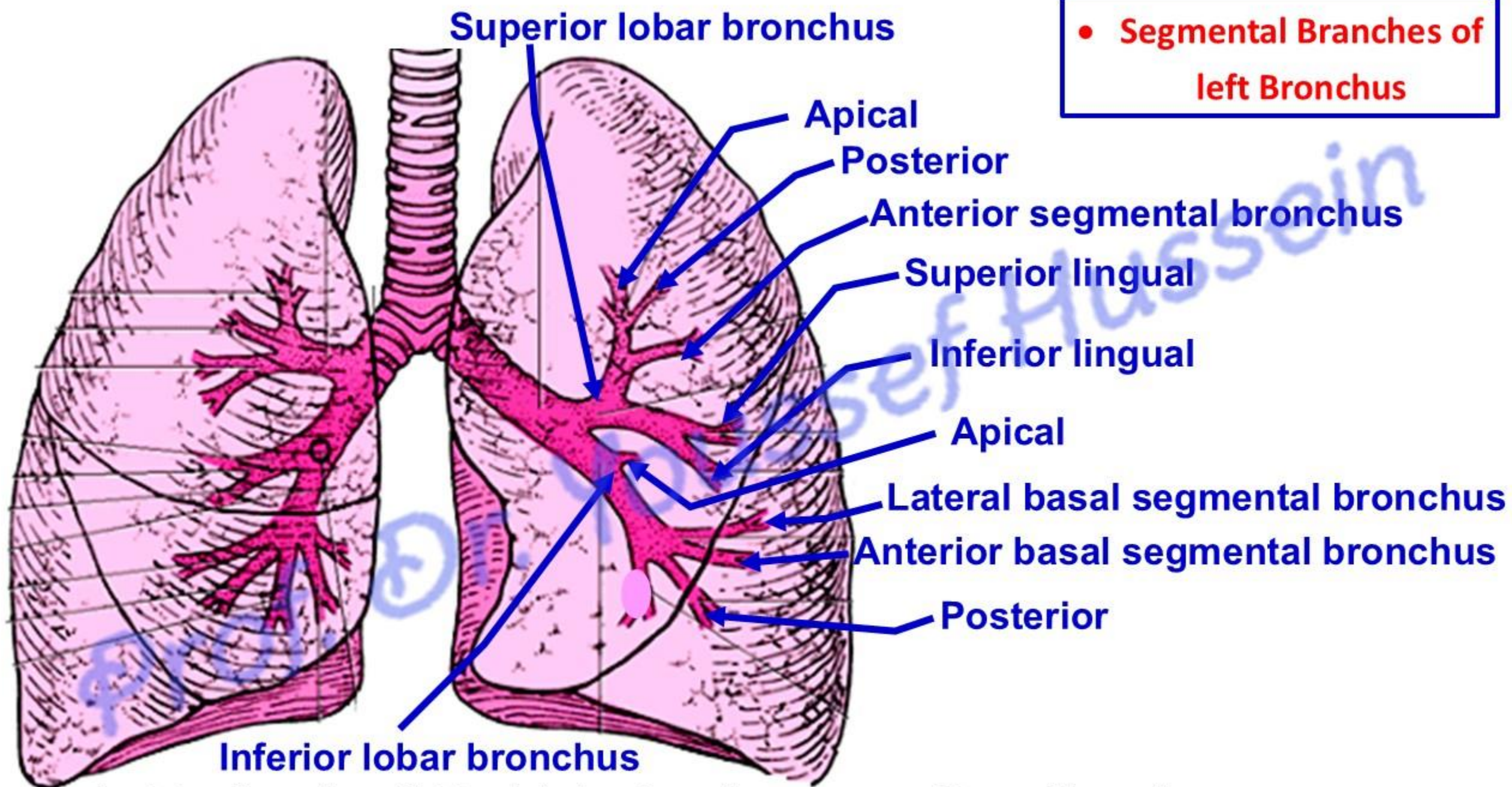
Hyparterial
(inferior)
bronchus for
middle and
inferior lobes



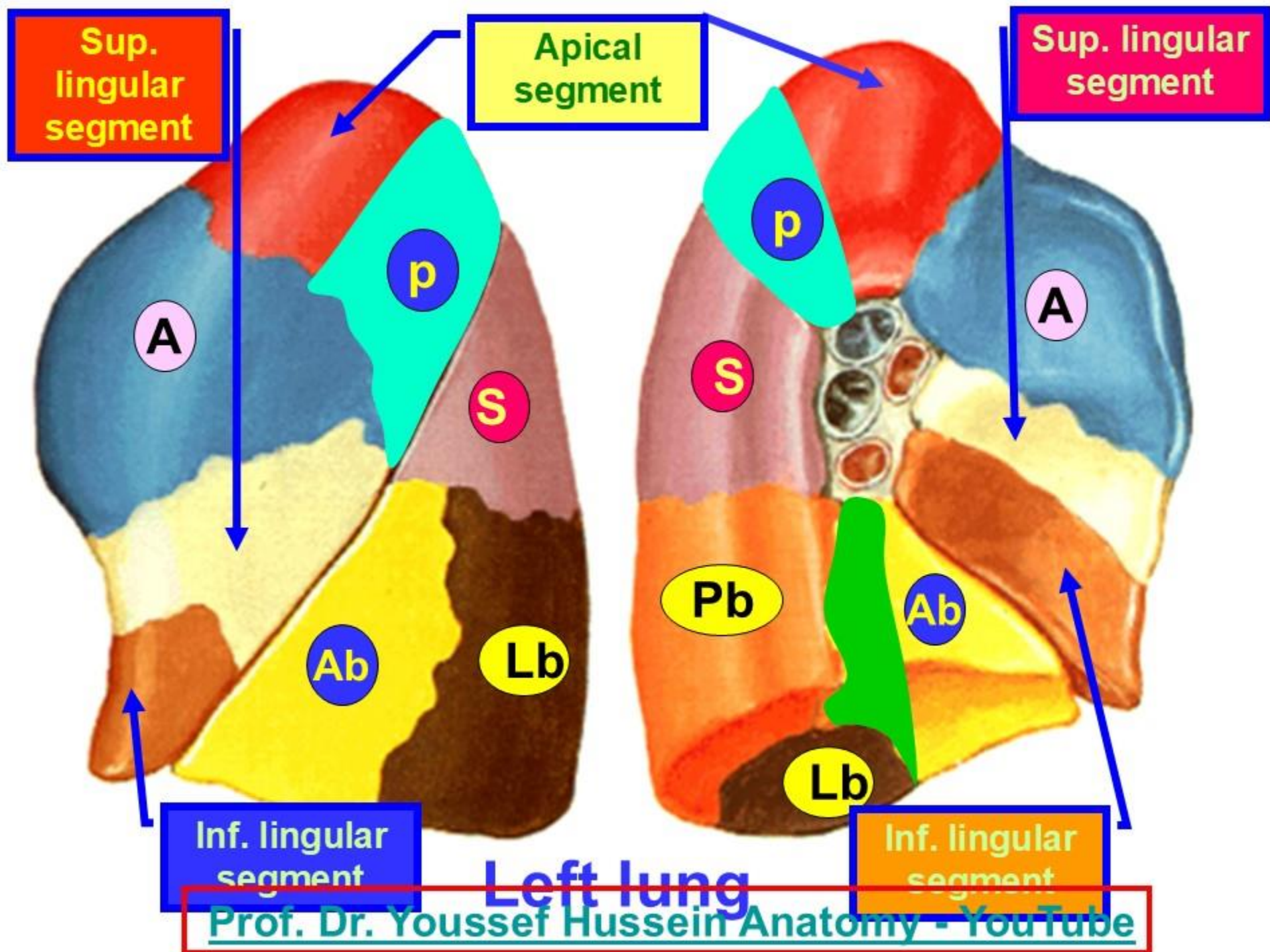


Right lung

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superior lobar bronchus divides into two branches upper and lower (lingual)



Broncho-pulmonary segments

- **Definition:** the anatomical, functional and surgical units of the lungs.
- The **right** lung is divided **10** segments while the **left** divided into **9** segments.
- **Each segment** is **pyramidal** shaped with its **apex at the hilum** and base at the lung outer surface.
- **Each segment** is separated from each other by fibrous septa and supplied by **VAB (pulmonary vein, Artery and Bronchus)**.
- **The clinical importance**, each segment can be removed without interruption of the other.

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التعليمي فقط

الـيوتيوب د. يوسف حسين



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Questions

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