

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

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

رئيس قسم التشريح والأنسجة والأجنة - كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

جميع المعلومات المنشورة هي فقط للاستخدام التعليمي

جروب الفيس د. يوسف حسين (استاذ التشريح)

اليوتيوب د. يوسف حسين

Prof. Dr. Youssef Hussein Anatomy - YouTube

https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd_cn0PQ

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Lungs

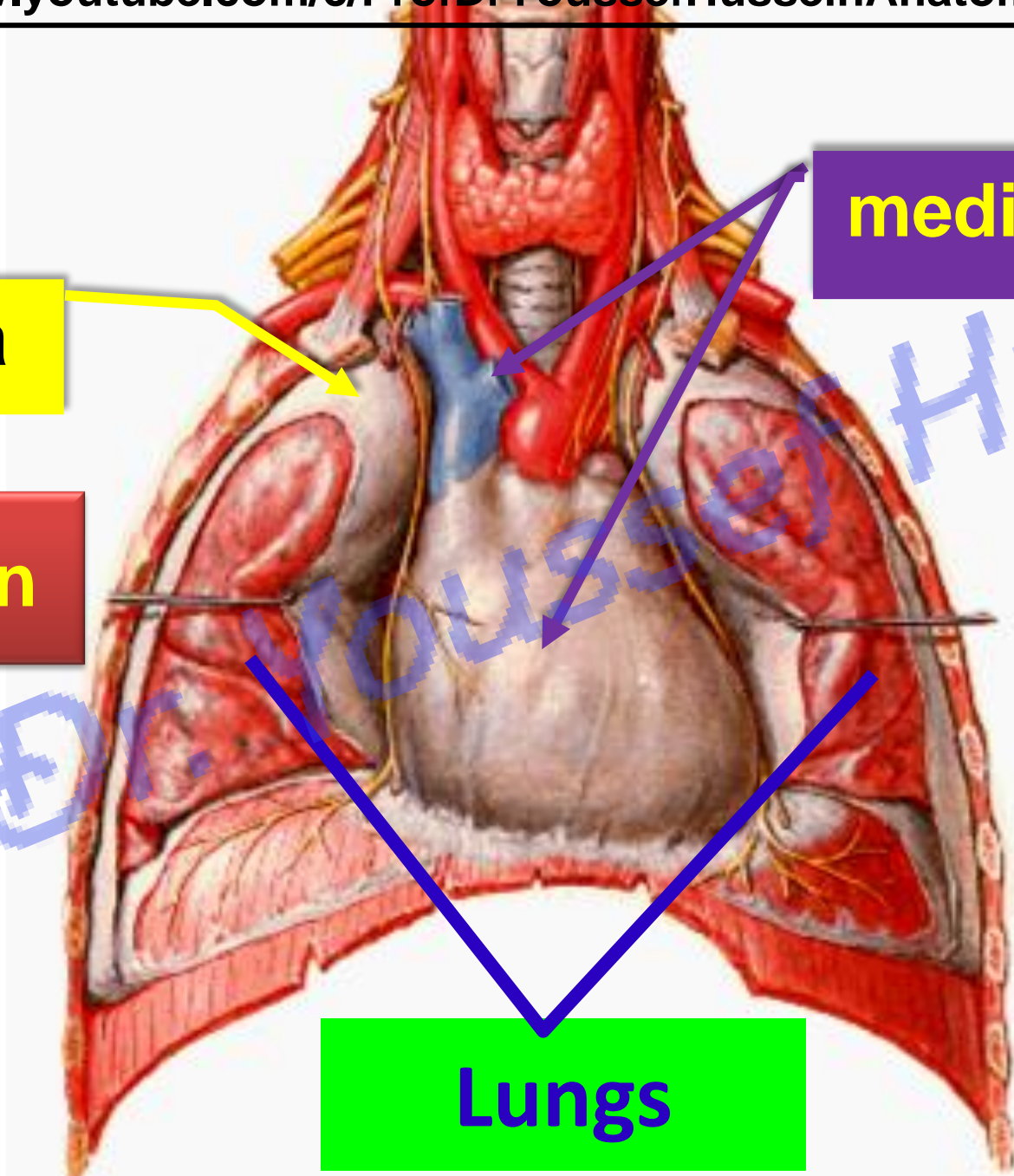
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Pleura

Position

mediastinum

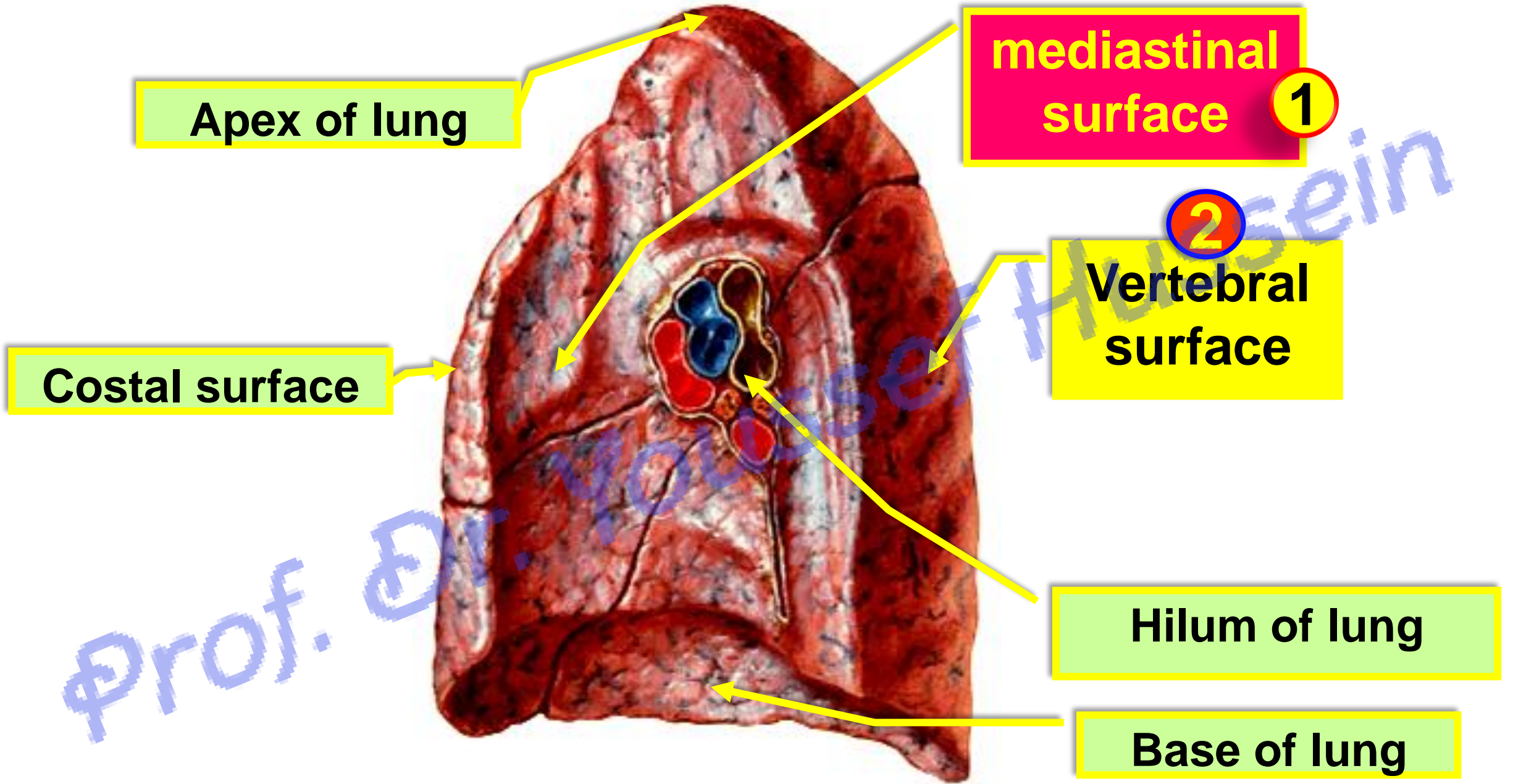
Lungs



Prof. Dr. Youssef Hussein

	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)

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• Relations of the lungs

1- Apex: It is covered by suprapleural membrane

2- Base: is related to:

* **Right lung:** right cupola of diaphragm and right lobe of liver.

* **Left lung:** left cupola of diaphragm, left lobe of the liver, spleen and fundus of the stomach.

3- Costal surface: smooth and convex.

- It is related to a- the ribs and their costal cartilages.

b- The intercostal muscles, nerve and vessels.

4- Medial surface: It contains the hilum and is divided into two parts:

1- Posterior part (vertebral surface) is related to,

a) Vertebral column and intervertebral discs.

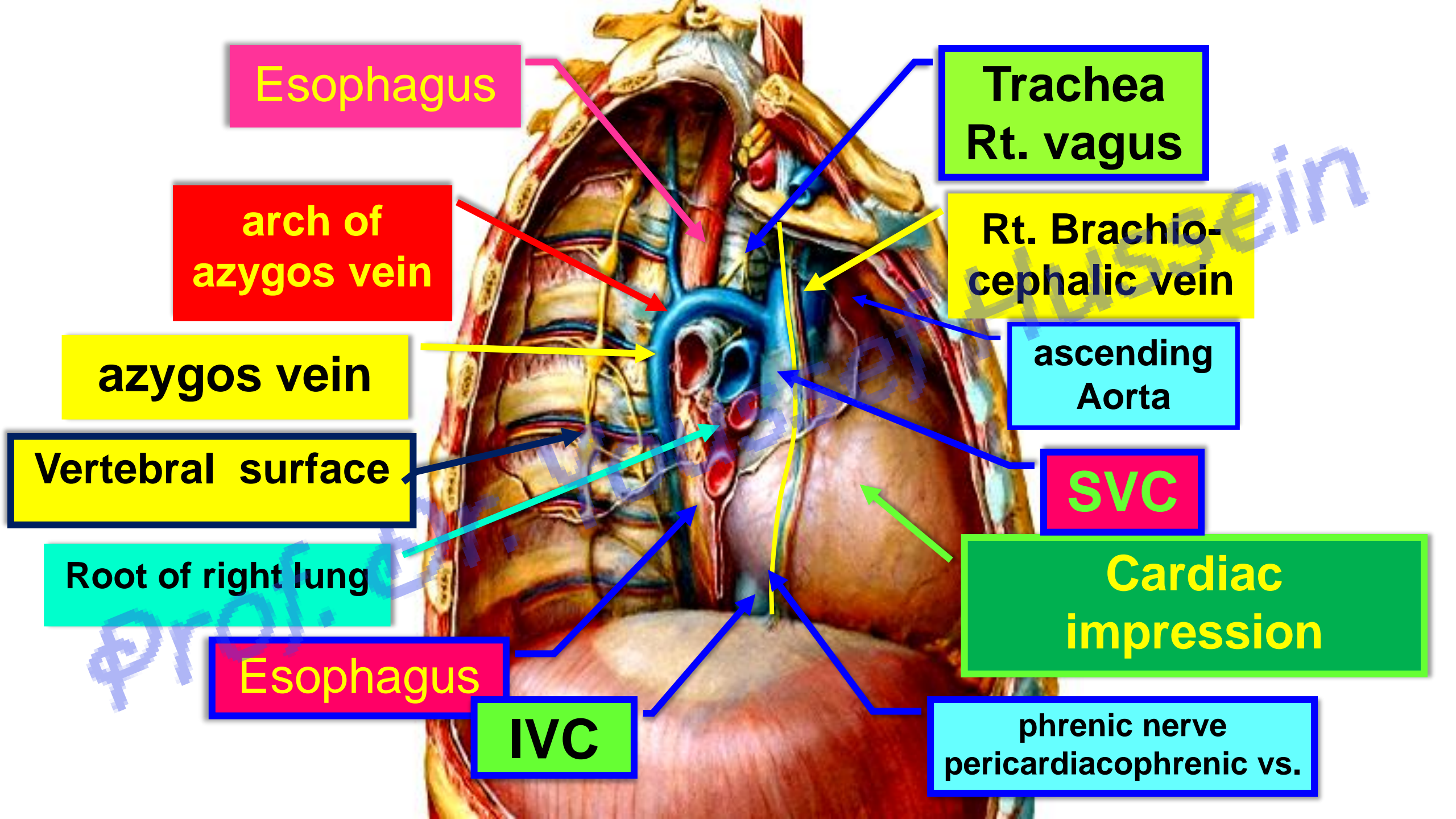
b) Sympathetic chains and spinal nerves.

c) Posterior intercostal nerve and vessels.

2. Anterior part (mediastinal surface)

**Relations of
mediastinal
surface of the
lungs**

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Esophagus

Trachea
Rt. vagus

arch of
azygos vein

Rt. Brachio-
cephalic vein

azygos vein

ascending
Aorta

Vertebral surface

SVC

Root of right lung

Cardiac
impression

Esophagus

IVC

phrenic nerve
pericardiophrenic vs.

- **Mediastinal surface of the right lung**

- **In front the hilum;**

- a) **Pericardial impression:** related to pericardium and right atrium.

- b) **Groove for (SVC):** vertical groove in front of upper part of the hilum. It is continuous above with right brachiocephalic vein.

- c) **Ascending aorta and thymus gland**, related to the anterior border in front of the groove of S.V.C.

- **Above the hilum;**

- a) **Groove for arch of azygos vein:** direct above the hilum.

- b) **Above arch;** 3 vertical impressions arranged from anterior to posterior;

- 1- **Groove for right brachiocephalic vein** and right phrenic nerve.

- 2- **Groove for the trachea** and right vagus nerve.

- 3- **Groove for the oesophagus.**

- **Behind the hilum;**

- a) **Groove for azygos vein:** behind the upper part

- b) **Oesophagus** behind the lower part.

- **Below the hilum;** Groove for inferior vena cava and right phrenic nerve.

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Left common carotid a.

Left Subclavian artery

Arch of Aorta

Esophagus thoracic duct

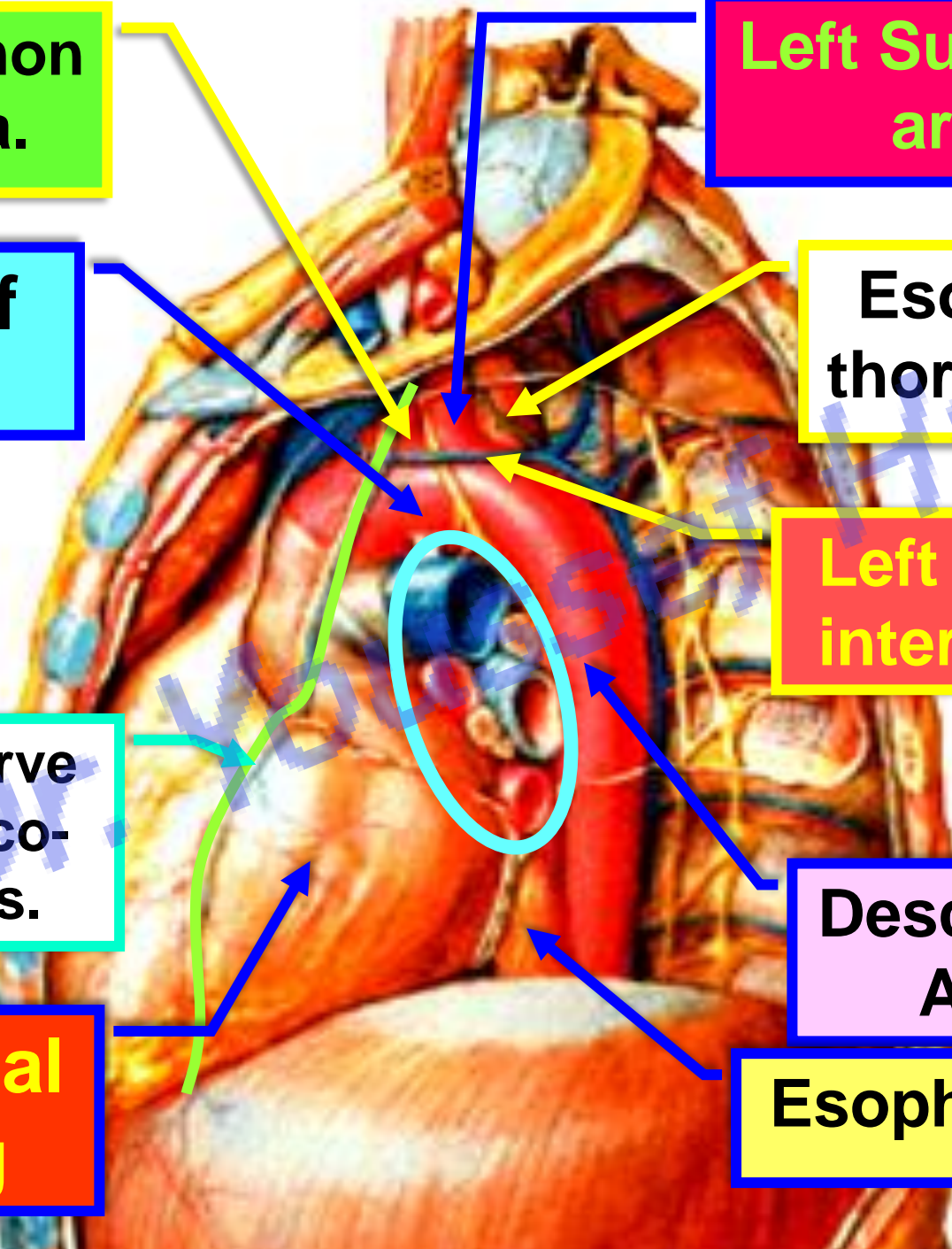
Left superior intercostal v.

phrenic nerve pericardiophrenic vs.

Descending Aorta

Pericardial bulging

Esophagus



Left lung

Groove for esophagus, thoracic duct

Groove for arch of Aorta

Groove for descending thoracic Aorta

Groove for esophagus

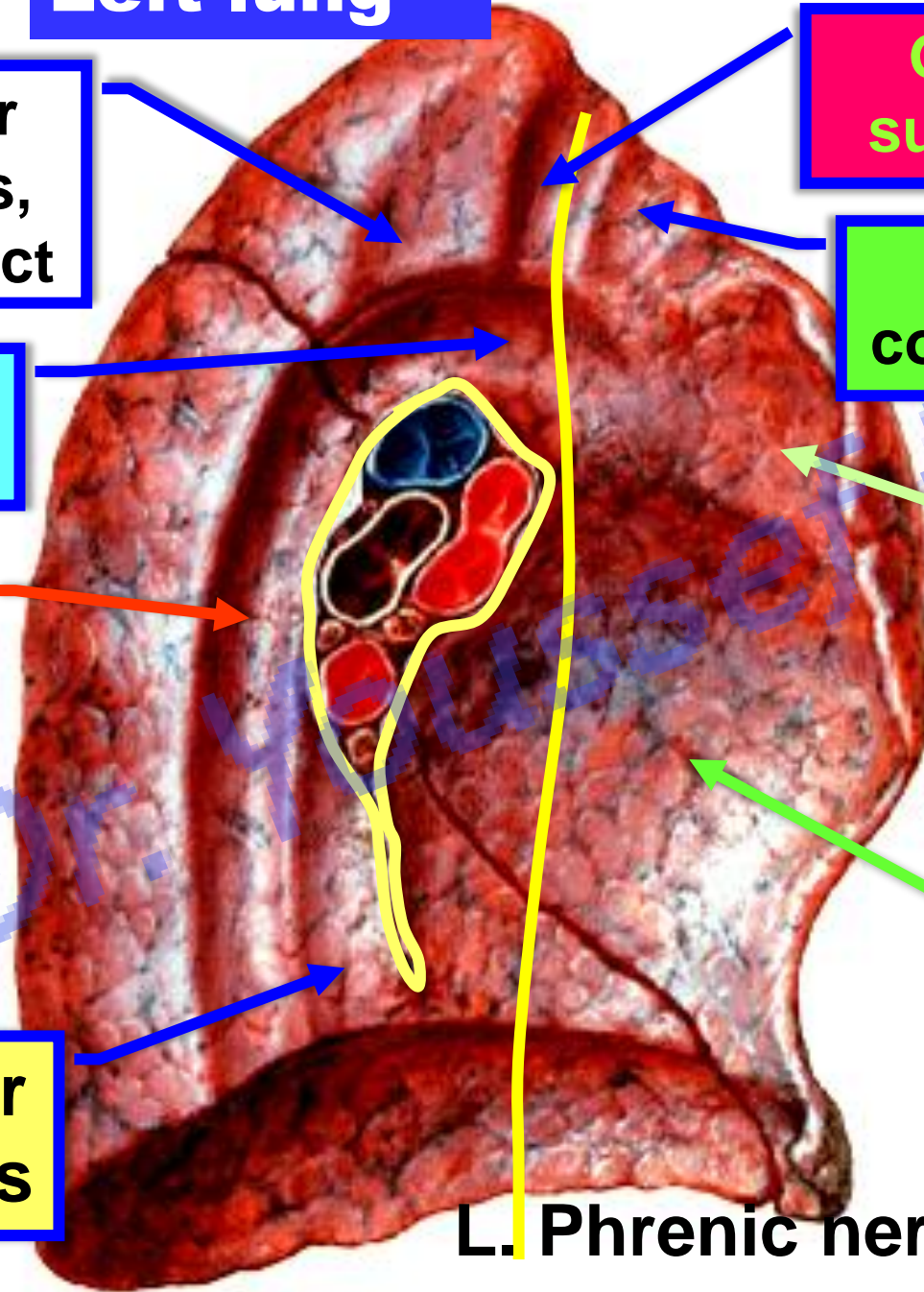
Groove for left subclavian artery

Groove for left common carotid a

Groove for pulmonary trunk and thymus gland

Cardiac impression

L. Phrenic nerve



- **Mediastinal surface of the left lung**

- **In front the hilum;**

- a) **Pericardial impression:** related to pericardium and left ventricle.

- b) **Pulmonary trunk and thymus gland,** related to the anterior border of the lung above the pericardial impression.

- **Above the hilum;**

- a- **Groove for arch of aorta** directly above the hilum.

- b) **Above arch;** 3 vertical impressions arranged from anterior to posterior;

- 1- **Left common carotid artery.**

- 2- **Left subclavian artery.**

- The left phrenic and left vagus nerves descend between them.

- 3- **Groove for oesophagus and thoracic duct.**

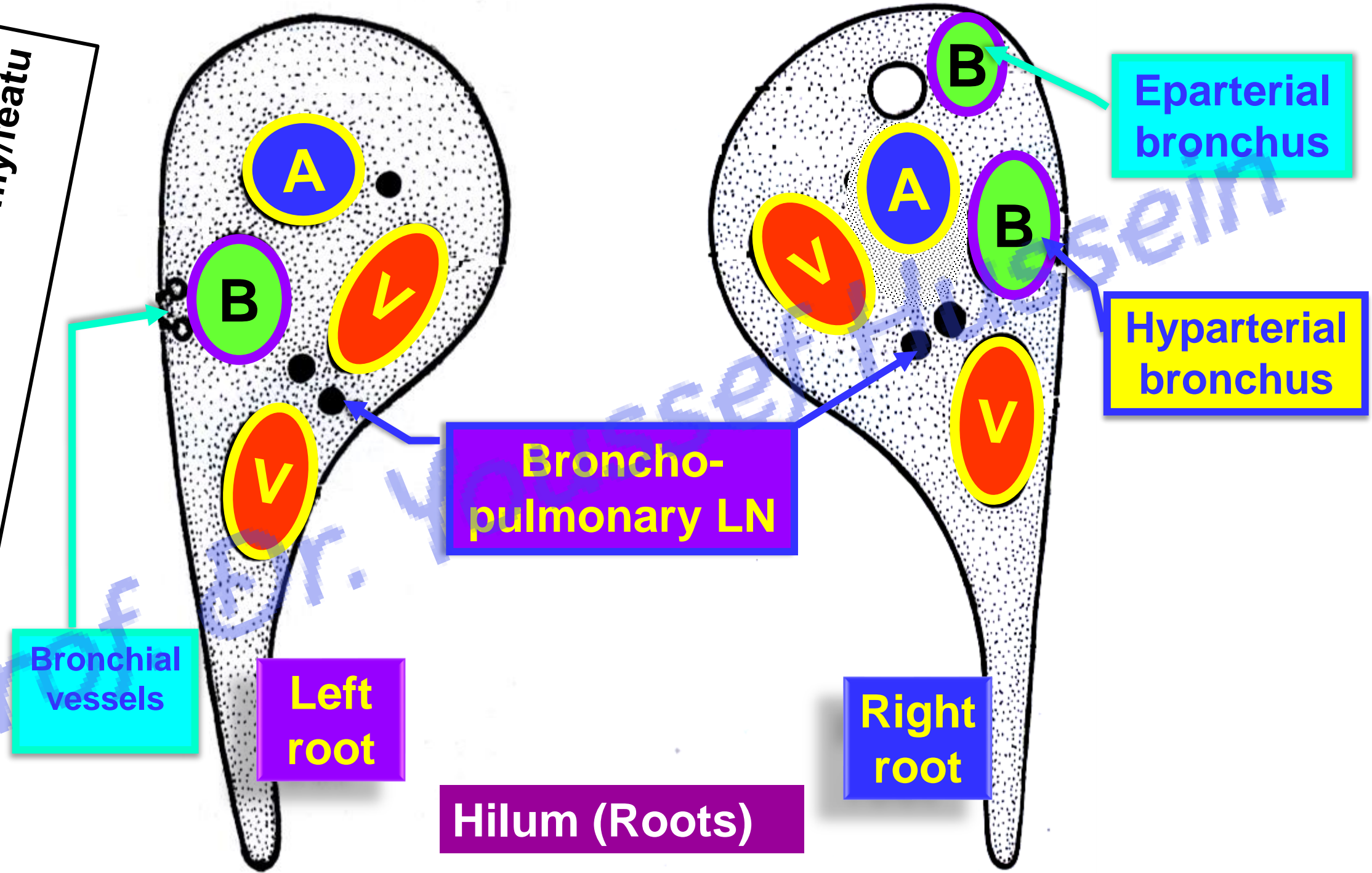
- **Behind the hilum;**

- a- **Oesophagus** behind the lower part.

- b- **Groove for descending aorta:** behind the hilum and oesophagus.

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red



Bronchial vessels

Left root

Broncho-pulmonary LN

Right root

Hilum (Roots)

Eparterial bronchus

Hyparterial bronchus

	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.

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**** 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.

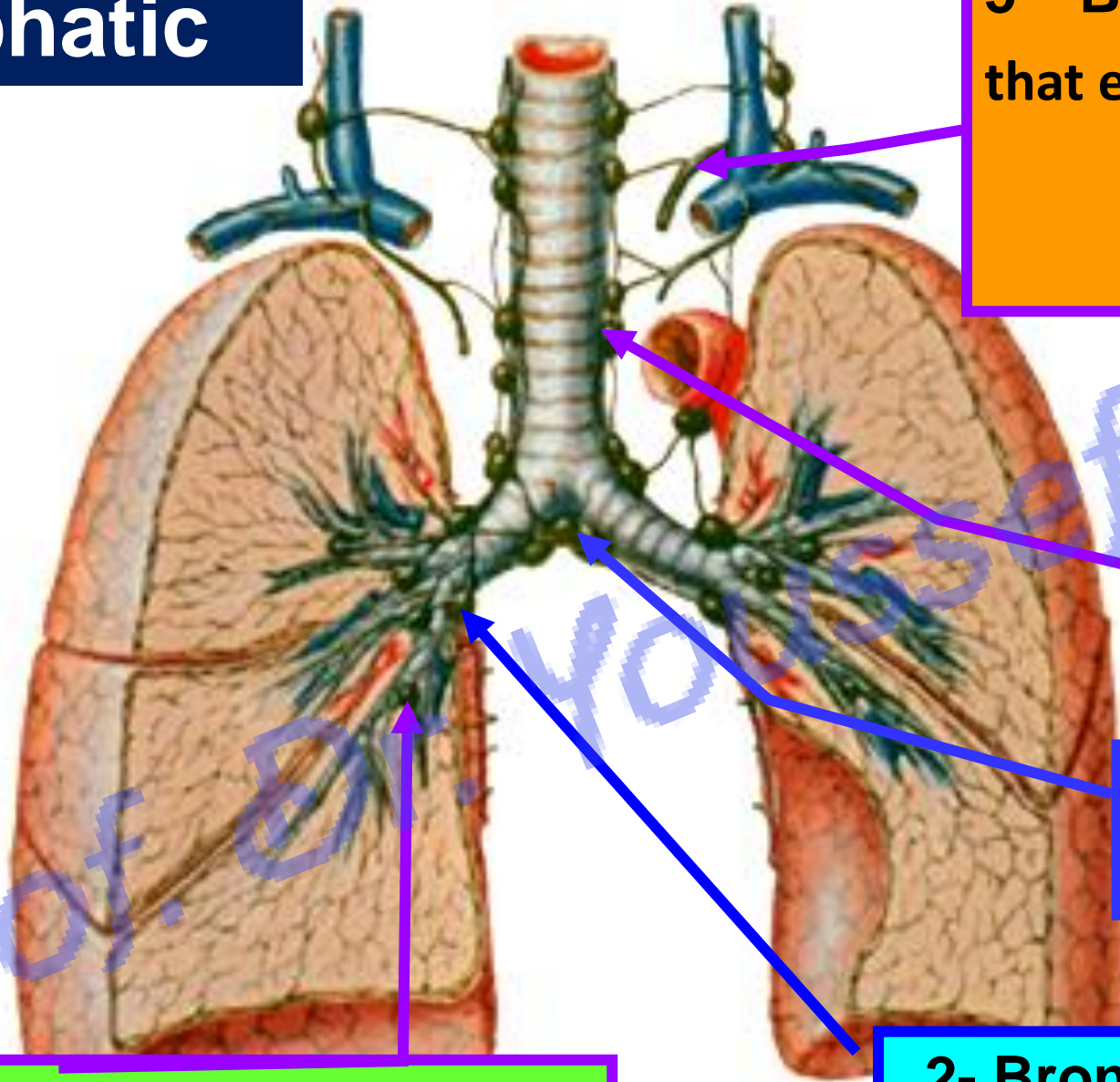
- Left bronchial veins end into accessory hemiazygos vein.

**** Nerve supply**

- Anterior and posterior pulmonary plexuses which are formed of:

- 1) Sympathetic fibers 2nd, 3rd and 4th ganglion of the sympathetic thoracic chain.
- 2) Parasympathetic from the vagus nerve.

Lymphatic



1- Pulmonary nodes
in the hilum

2- Bronchopulmonary nodes
at the termination of the bronchi

3- Tracheobronchial nodes
at the bifurcation of the trachea

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

5- Bronchomediastinal lymph trunk
that ends in:

a- Thoracic duct (Left side).

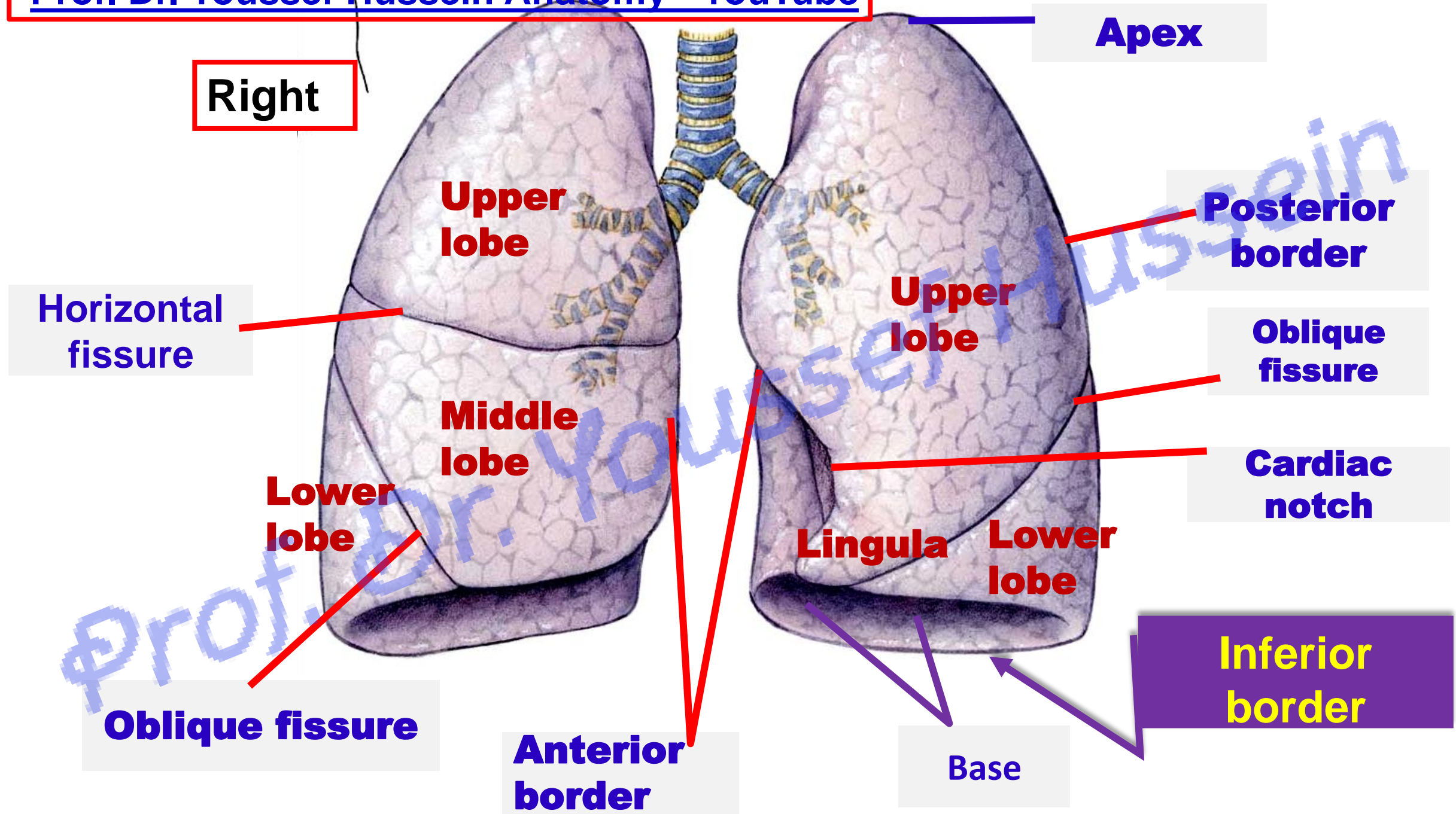
b- Right lymph trunk (Right side)

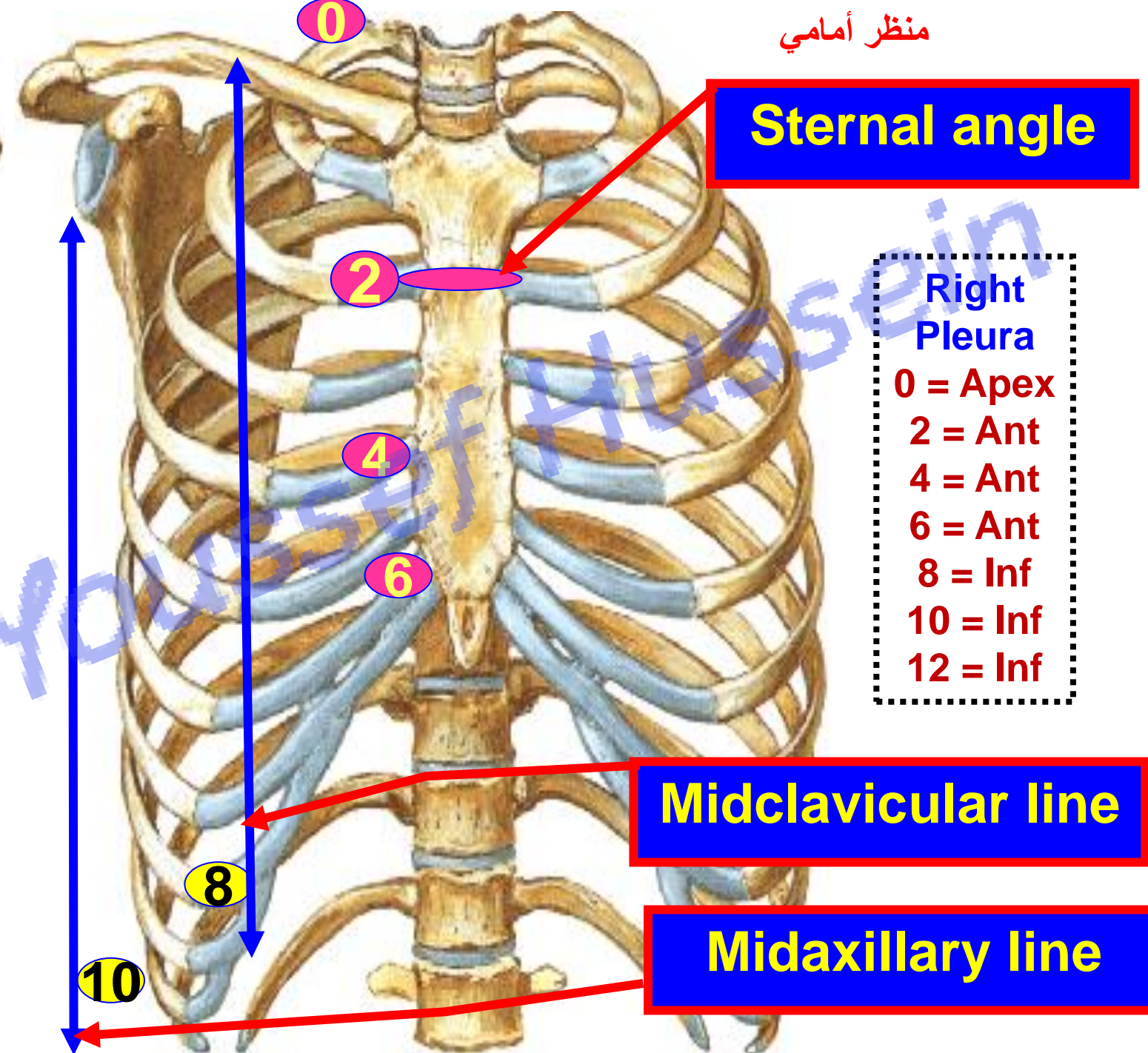
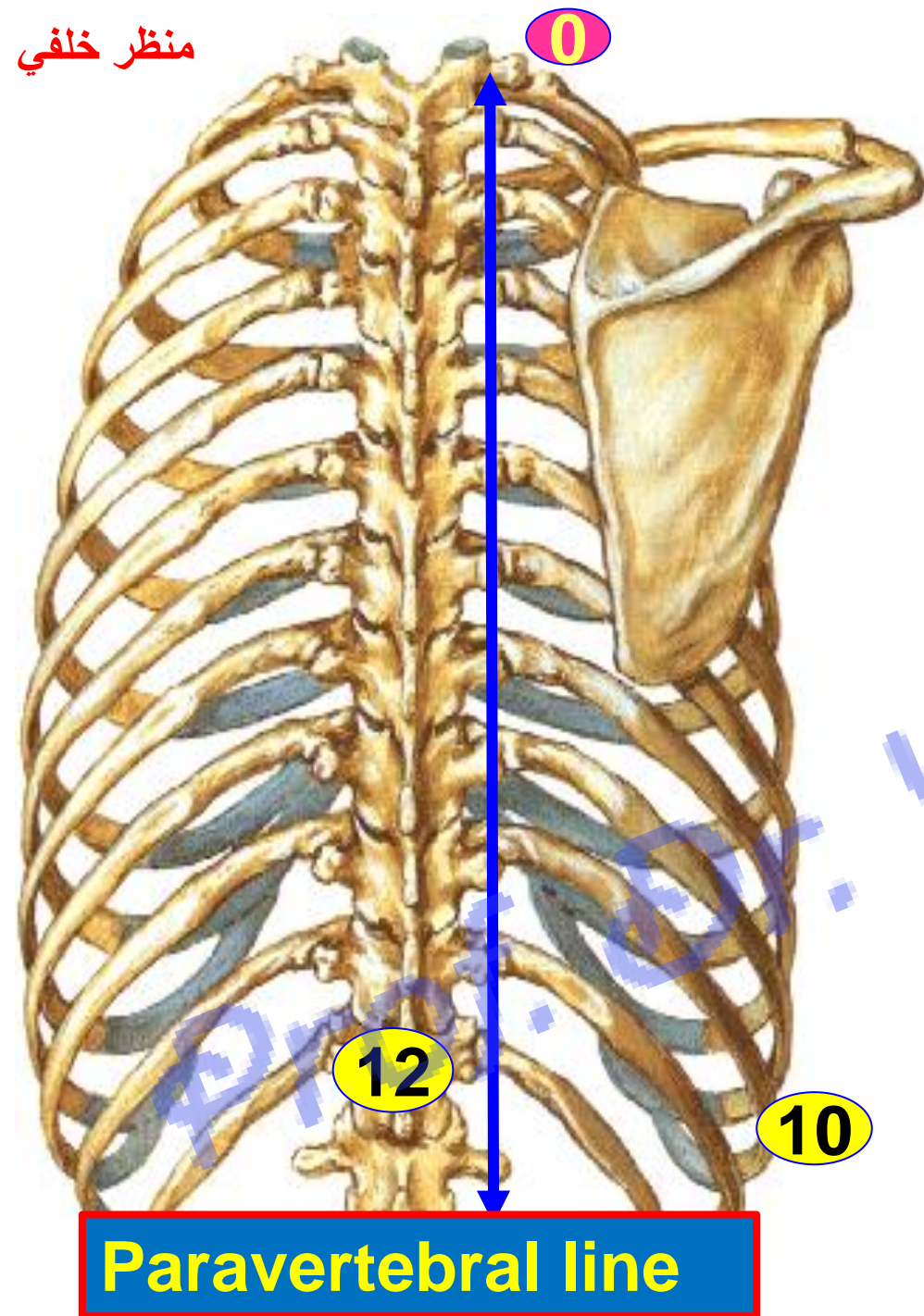
Surface anatomy

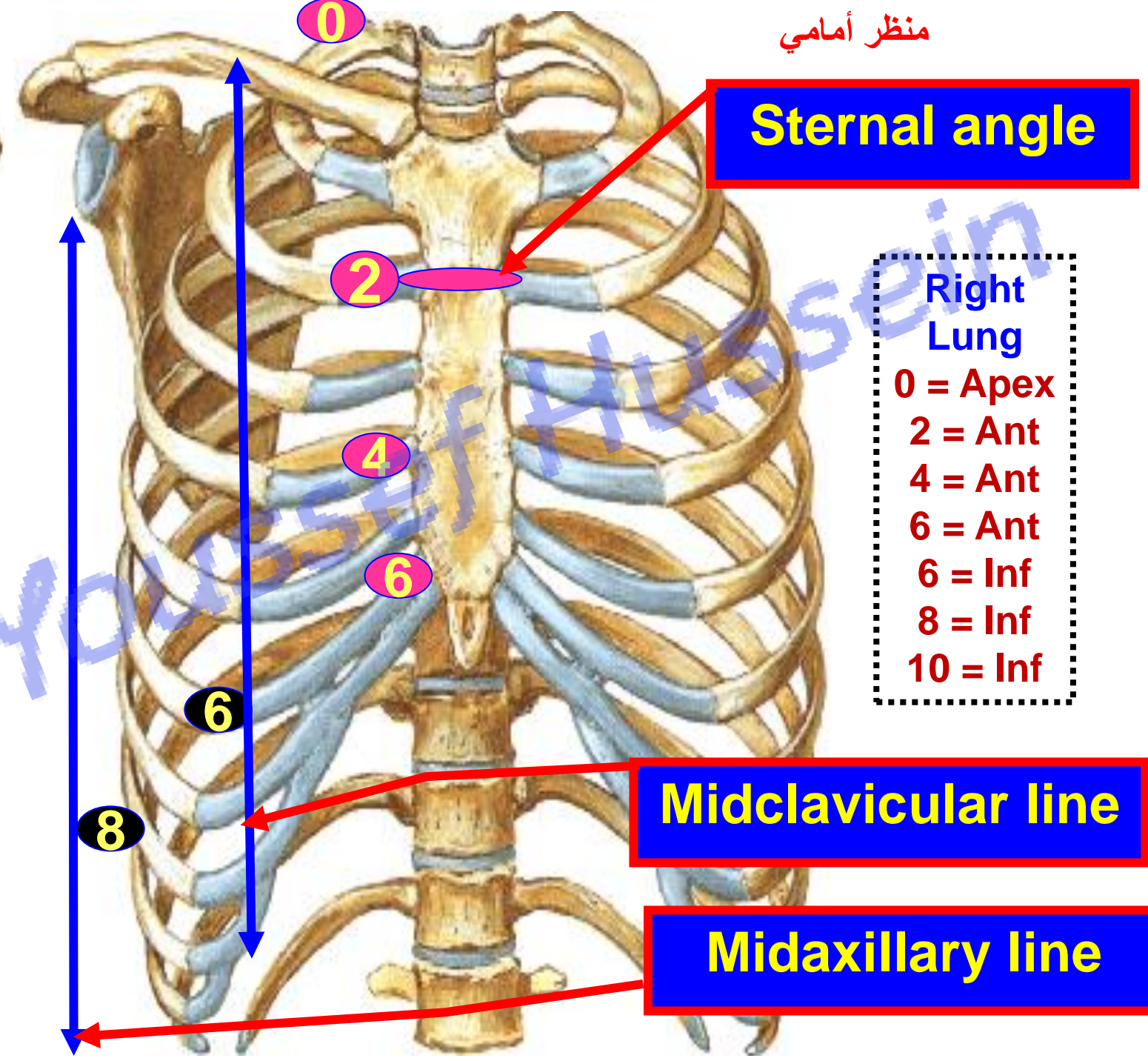
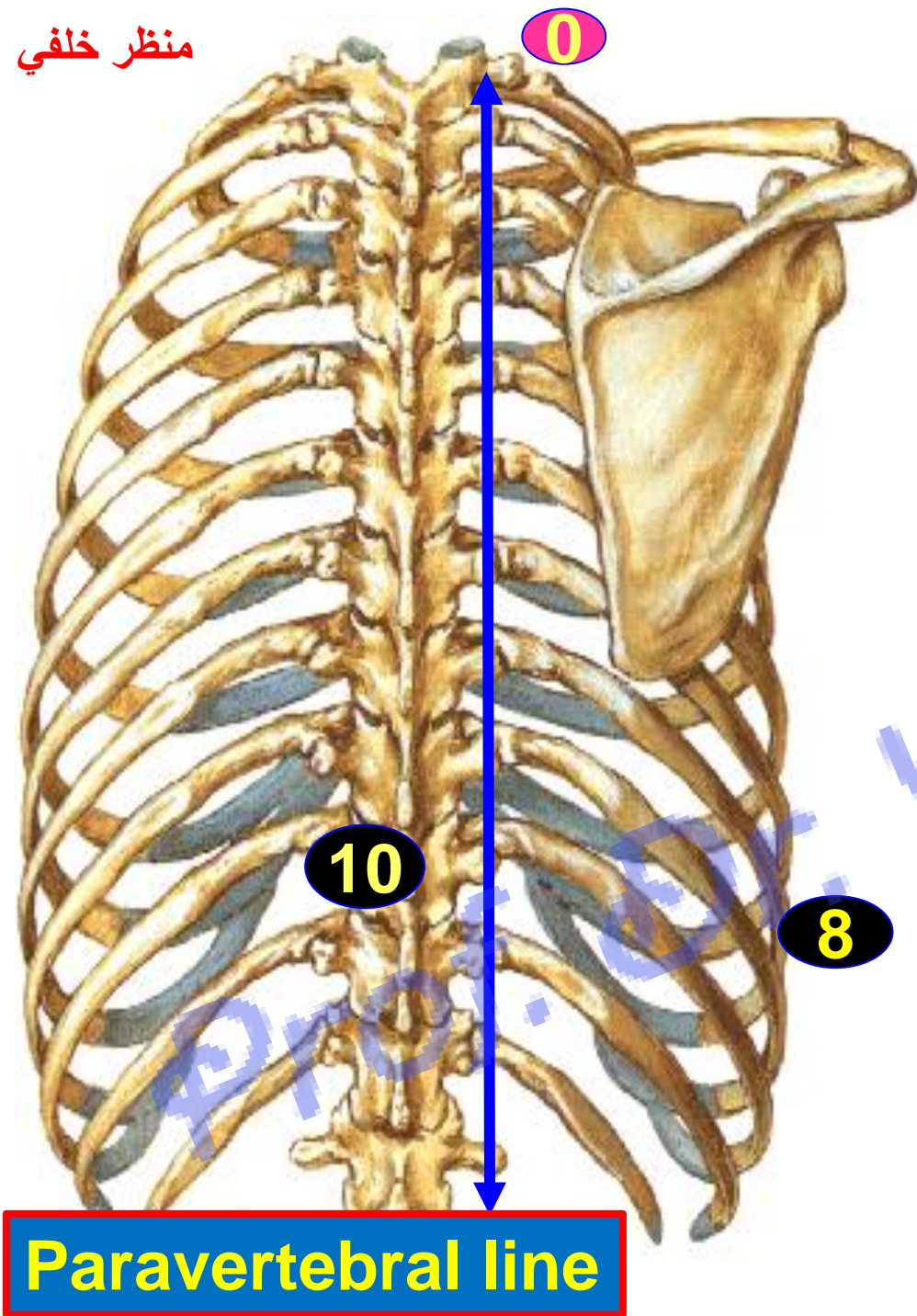
Pleura

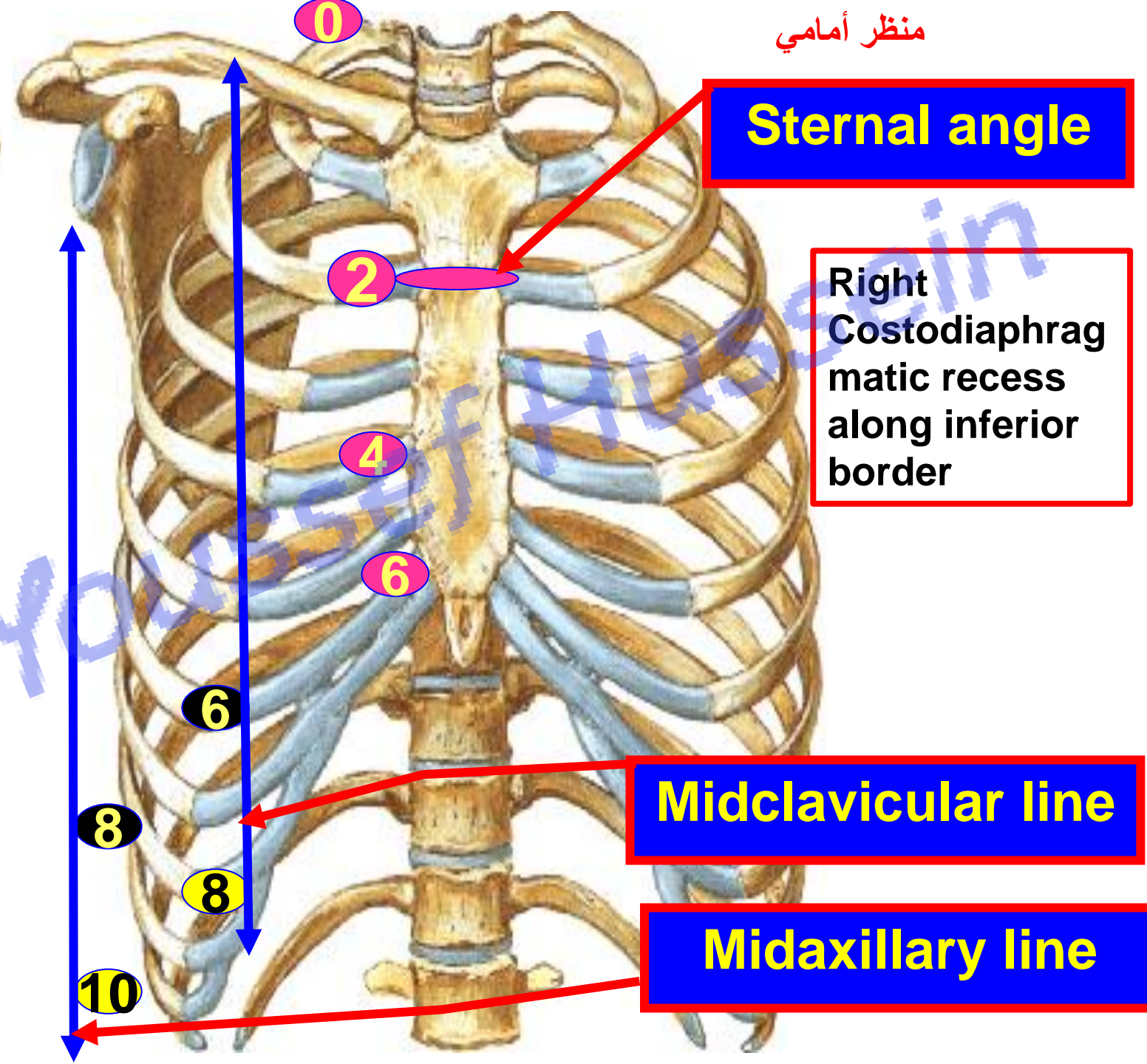
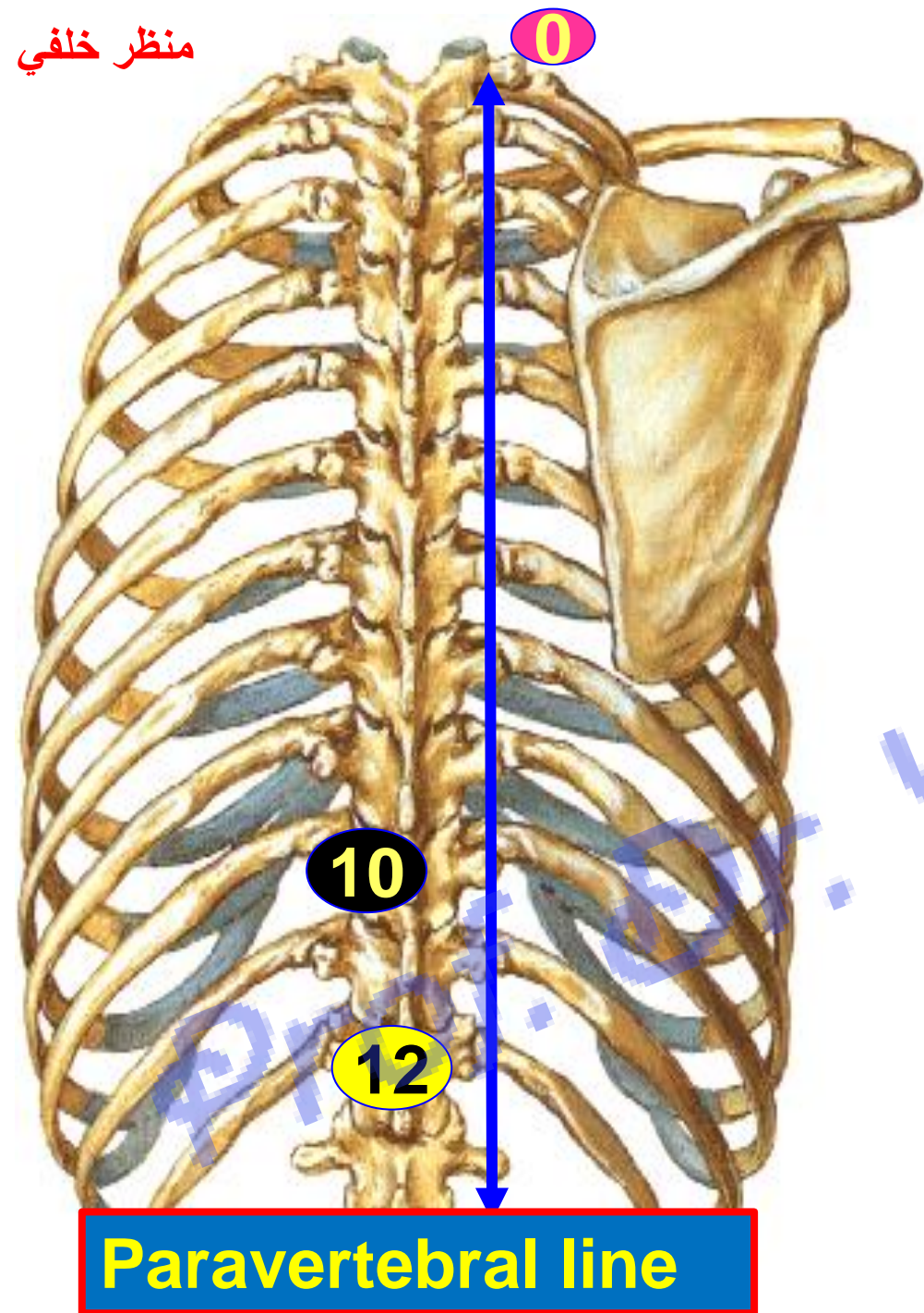
Lungs

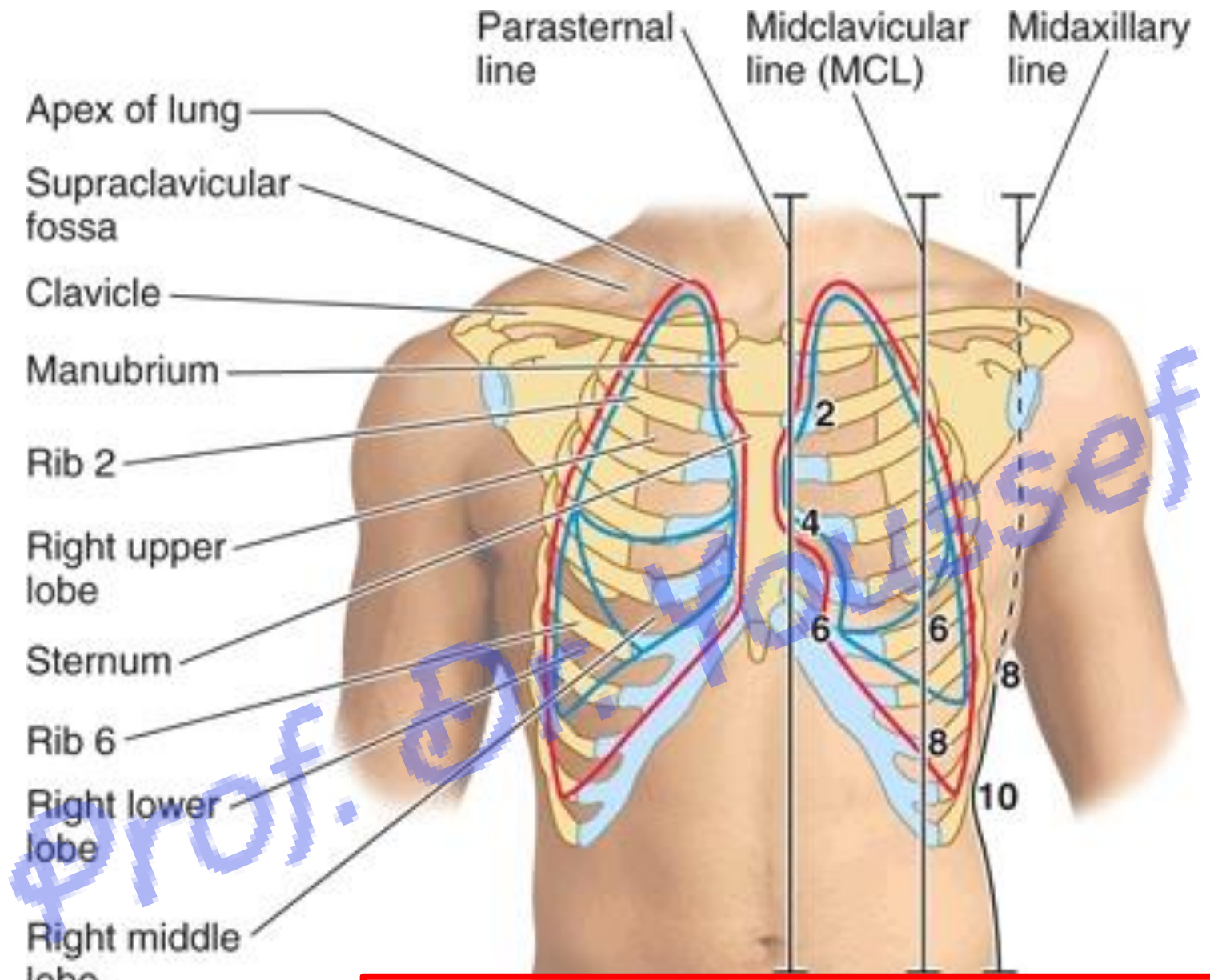
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**Surface anatomy
left & pleura lung**

Left Pleura= 0, 2, 4, 6, 8, 10, 12
Left Lung = 0, 2, 4, 6, 6, 8, 10

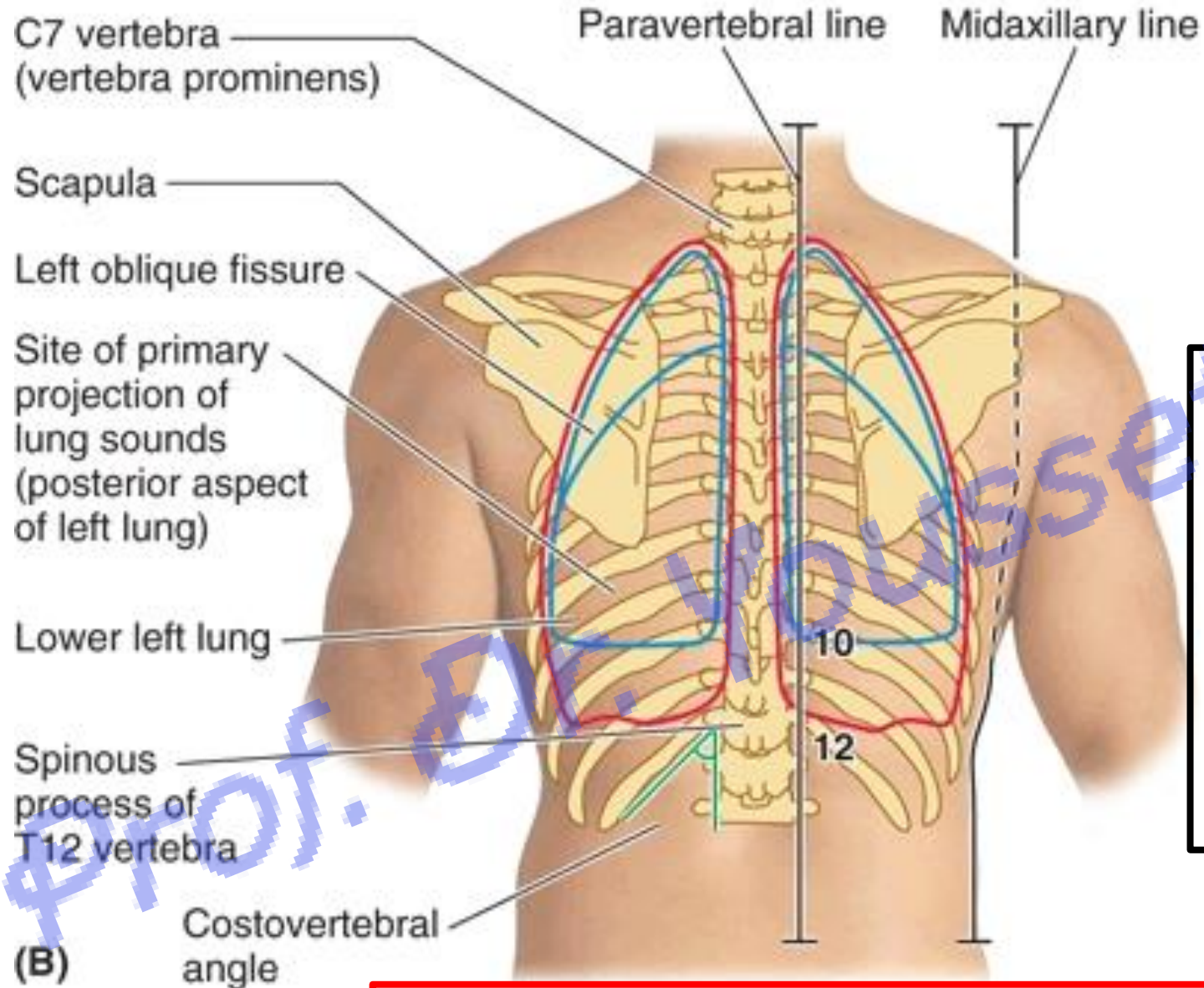
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(A)

Surface anatomy left & pleura lung

Left Pleura= 0, 2, 4, 6, 8, 10, 12
Left Lung = 0, 2, 4, 6, 8, 10

The cervical dome of the pleura and the apex of the lungs extend up into the neck. Consequently, they are vulnerable to stab wounds in the root of the neck or to damage by an anesthetist's needle when a nerve block of the lower trunk of the brachial plexus is being performed.



• Surface anatomy of the Pleura

1- Apex:- one inch above the middle of the medial 1/3 of the clavicle

2- The anterior border:-

- From the apex draws a line downward and medially passing behind sternoclavicular joint to the sternal angle at the level of the **2nd costal cartilage (median plane)**. The 2 borders meet each other.

- **On the right side,**

- It descends vertically downward in the median plane to the level of **6th costal cartilage**.

- **On the left side,**

- It descends vertically to the level of the (**4th costal cartilage**, in the median plane)

- Then, the anterior border deviates laterally to the left side of the sternum to reach the left **6th costal cartilage at the side of the sternum**.

3- The inferior border (on both sides):-

- From the last point, draw a line reaching;

* The **8th rib** in the mid-clavicular line.

* The **10th rib** in the mid- axillary line.

* The **12th thoracic spine** one inch lateral to the median plane, paravertebral line.

Pleura = 0, 2, 4, 6, 8, 10, 12

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4- The posterior border (on both sides):- a line upward from last point to apex.

• Surface anatomy of the Lung

1- Apex:- one inch above the middle of the medial 1/3 of the clavicle

2- The anterior border:-

- From the apex draws a line downward and medially passing behind sternoclavicular joint to the sternal angle at the level of the **2nd costal cartilage** in the median plane. The 2 borders meet each other.

- **On the right side,**

- It descends vertically downward to the level of **6th costal cartilage**, in the median plane

- **On the left side,**

- It descends vertically to the level of the **4th costal cartilage**.

- Then, the anterior border deviates laterally to the left side of the sternum to reach the left **6th costal cartilage at the side of the sternum**.

3- The inferior border (on both sides):-

- From the last point, draw a line reaching;

* The **6th rib** in the mid-clavicular line.

* The **8th rib** in the mid- axillary line.

* The **10th thoracic spine** one inch lateral to the median plane , paravertebral line.

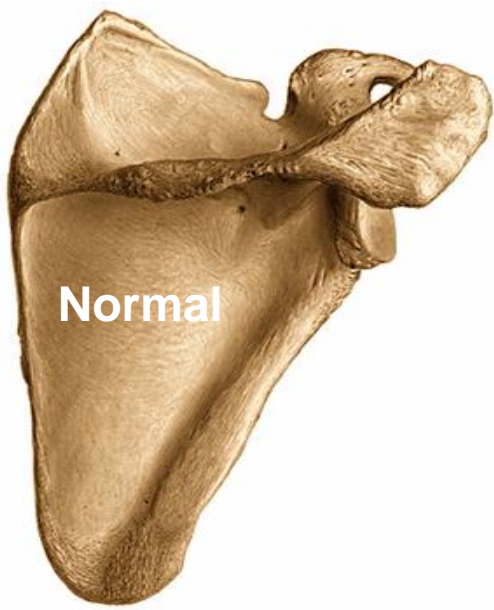
Lung = 0, 2, 4, 6, 6, 8, 10

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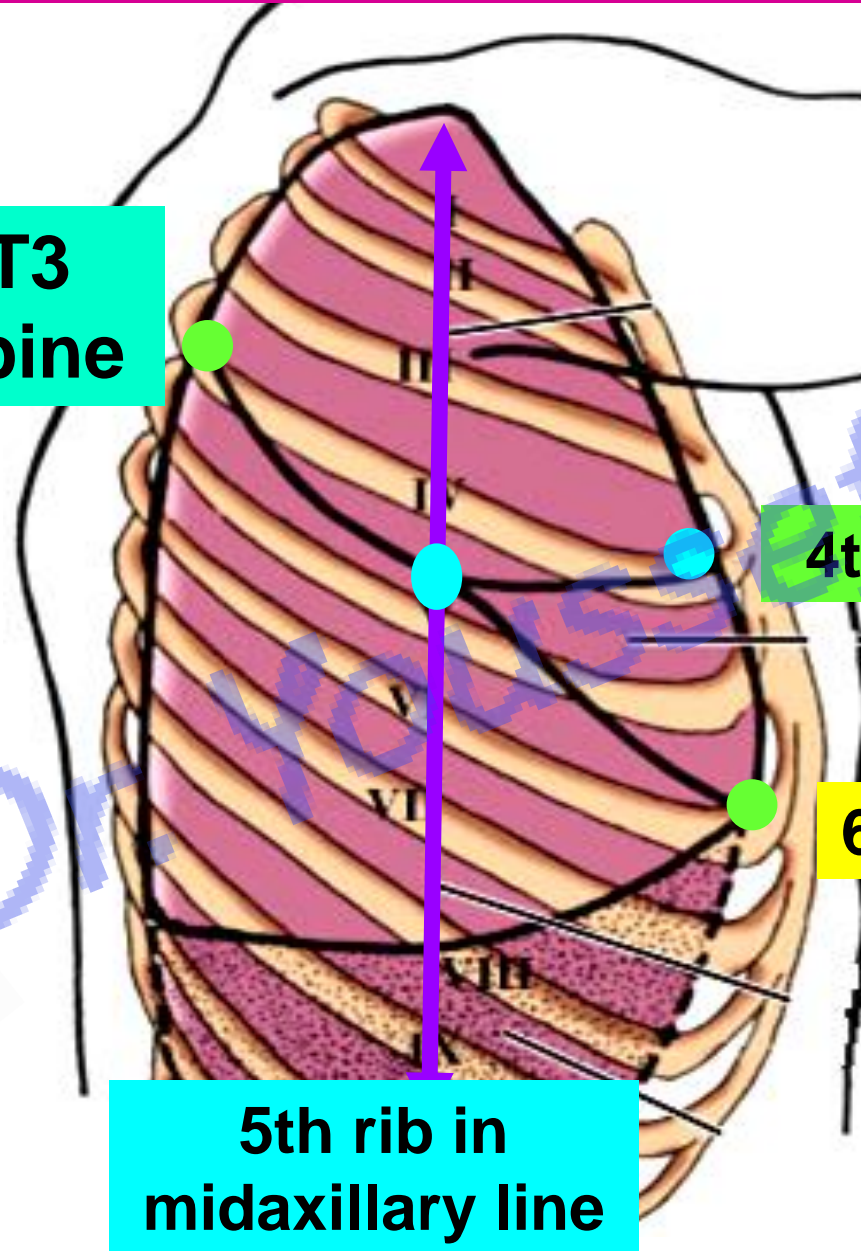
4- The posterior border (on both sides):- a line upward from last point to apex.

Surface anatomy of the fissures of lung

T3

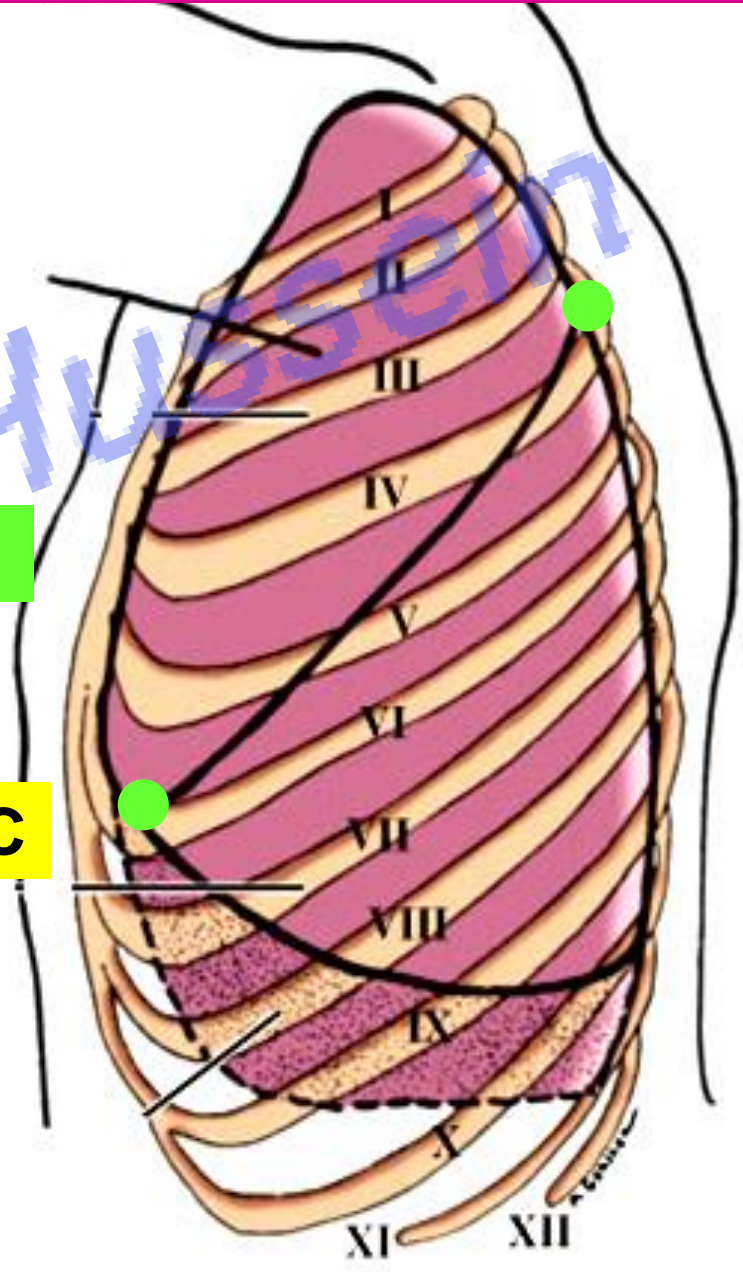


T3 spine



4th C.C

6th C.C



**** B- Surface anatomy of the fissures of the lungs**

1- The oblique fissure: (in both right and left lungs)

- Draw a line extends from the posterior border at A point at the level of the **3rd thoracic spine** (Opposite the root of the spine of the scapula).
- The line directed downward and forward to inferior border at **6th costochondral junction**.
- **Roughly**, the oblique fissure corresponds to the medial border of the scapula by placing the hand on the back of the head (Abduction).

2- The horizontal fissure (only in the right lung)

- From a point at the anterior border opposite the **4th costal cartilage** draws a line horizontally backward to meet the oblique fissure at the **right 5th rib** in the **mid-axillary line**.

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- **Upper lobe** is the apex, upper part of **anterior**, greater of mediastinal surface and part of the costal surface
- **Lower lobe** is greater part of the **posterior** and most of costal surface
- **Middle lobe** is lower part of **anterior** surface of the right lung

Pleural recesses



The diagram illustrates the lungs within the thoracic cavity, showing the pleural cavities. Two specific recesses are highlighted: the costomediastinal recess, located superiorly and medially, and the costodiaphragmatic recess, located inferiorly and laterally. Arrows point from text boxes to these recesses.

Costomediastinal recess

Costodiaphragmatic recess

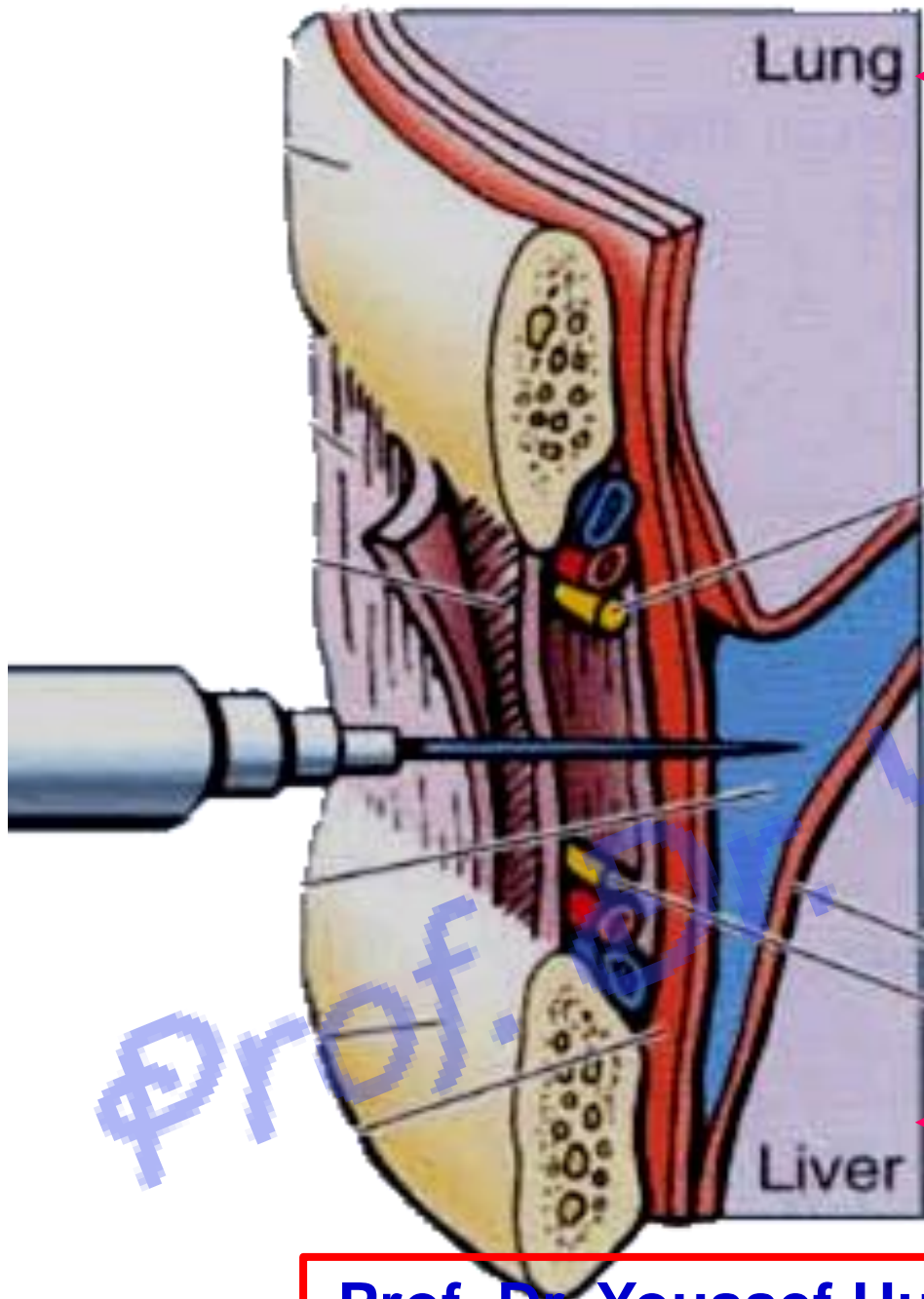
• Pleural Recesses

- These are narrow space inside the pleural cavity contain serous fluid **to lubrication**
- **Importance**: They allow distension of the lungs during full inspiration

1- **Costodiaphragmatic recess**: between thoracic wall and diaphragm along the **inferior** border of the lung (larger and important).

2- **Costomediastinal recess**: between the thoracic wall and mediastinum along the **anterior** border of the lung.

- **An accumulation of serous fluid in the pleural cavity → Hydrothorax (pleural effusion)**
- **An accumulation of lymph in the pleural cavity → Chylothorax**
- **An accumulation of blood in the pleural cavity → Hemothorax**
- **An accumulation of pus in the pleural cavity → Pyothorax (Empyema)**
- **An accumulation of air in the pleural cavity by Stab wounds of the thoracic wall → Pneumothorax**
- Air in the pleural cavity associated with serous fluid is known as **Hydropneumothorax**, associated with pus as **Pyopneumothorax**, and associated with blood as **Hemopneumothorax**.



To avoid possible accidental puncture of the lung

Pleural aspiration

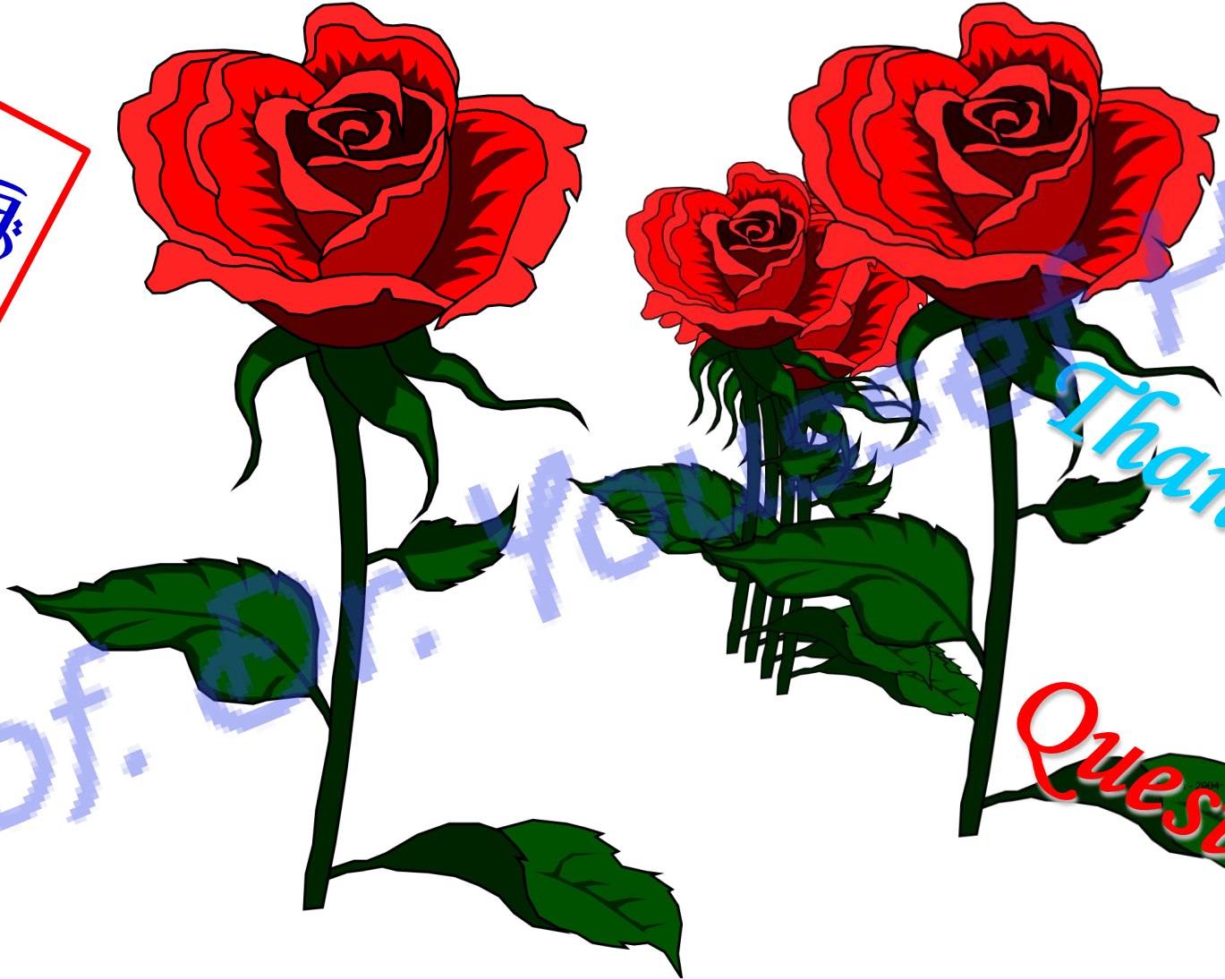
Pleural aspiration done by needle in the 9th intercostal space at the midaxillary line (upper border of the 10th rib).

To avoid possible accidental puncture of the liver, spleen.

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