

Anatomy

Faculty of Medicine - JU2017

☒ Sheet

☐ Slides

Number

3

Done by:

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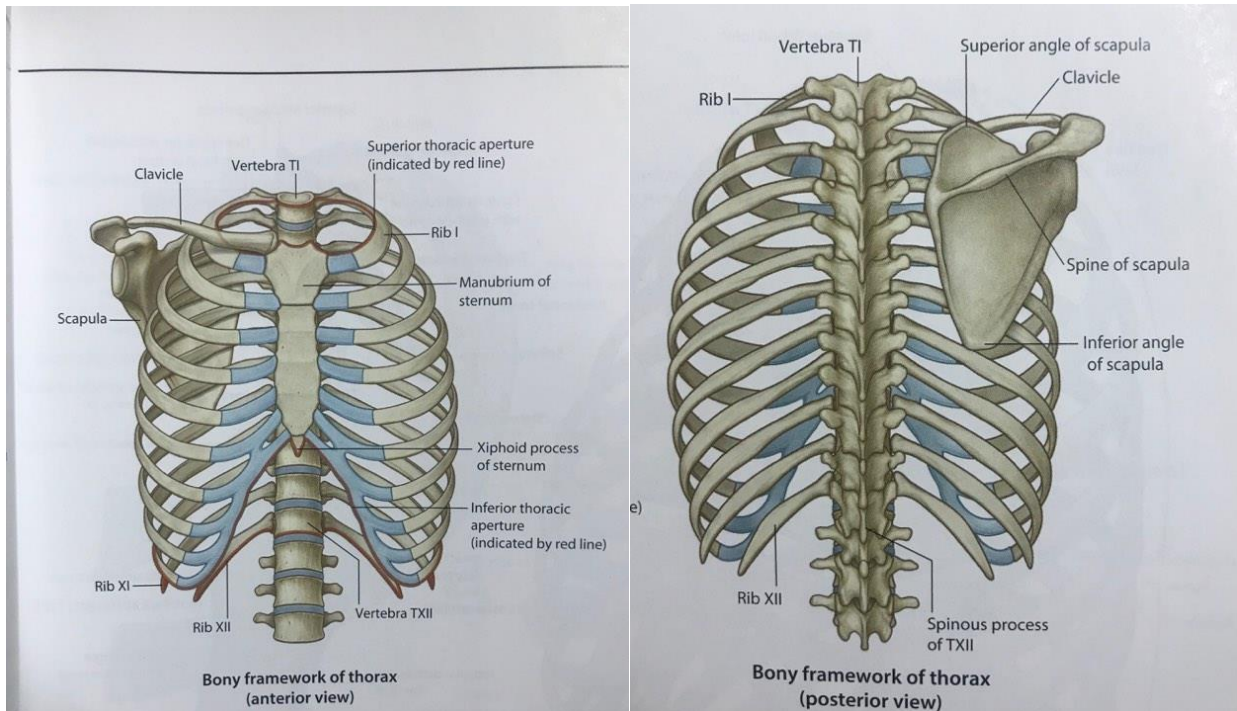
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THORACIC CAVITY



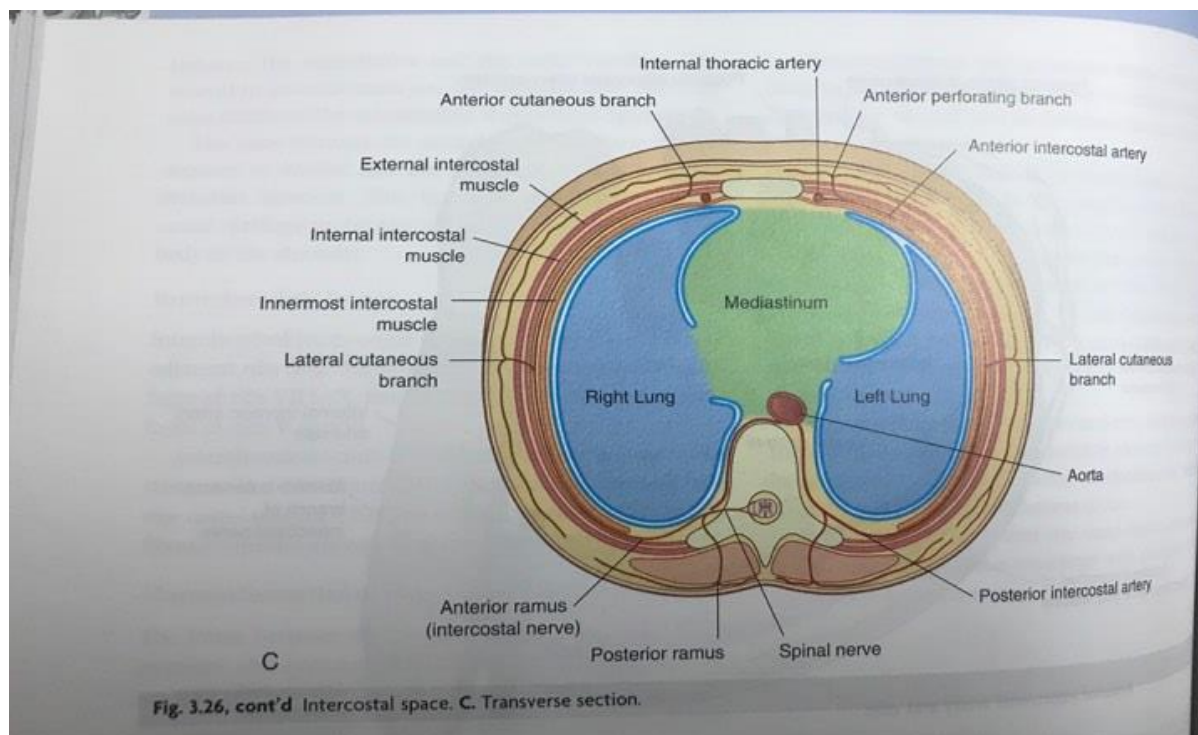
- It is kidney-shaped in cross section.
- It is enclosed by thoracic wall. It extends between the thoracic inlet (root of the neck) to the thoracic outlet (closed by the diaphragm). It has borders:
- Anterior: sternum.
- Posterior: 12 vertebrae.
- Lateral: curving ribs, with costal cartilages at their anterior distal end
- Their covering and linings.

*Note: the thoracic inlet is small and open for communication with the neck, but the thoracic outlet is larger and closed by the diaphragm

*The thoracic cavity has 3 compartments:

1. 2 lateral/ peripheral pleural sacs (left and right), and each covers a particular lung.
2. One central mediastinum (in the middle/equatorial)(منصف للصدر), contains the heart.

- At the sternal angle, the trachea divides to right and left 1ry Bronchi each one divides to a lobar bronchi that goes to a certain lobule in each lung
- The sternal angle also marks the beginning and end of Aortic arch.

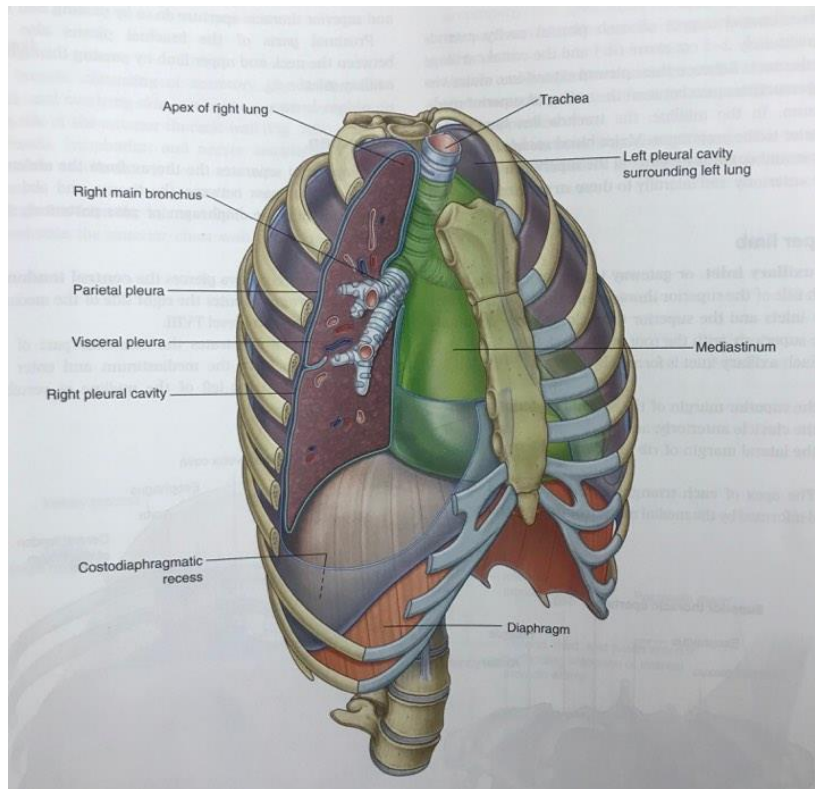


PLEURA:

- It is a thin continuous (mesothelial) membrane that covers the lungs and lines the thoracic wall, it is a serous membrane not mucus as well as the pericardium, and the peritoneum.

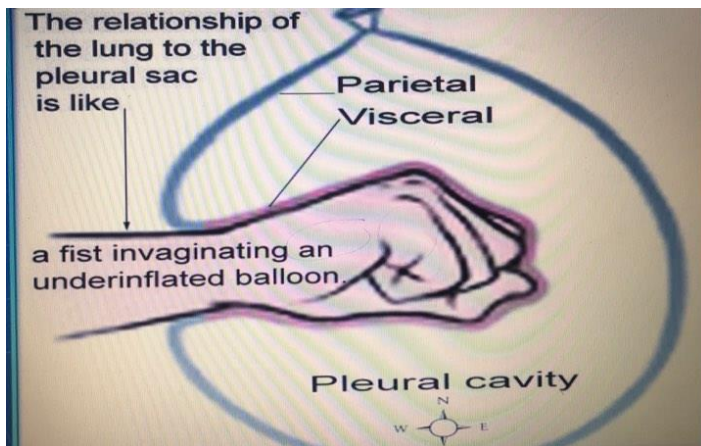
Pleura has 2 parts:

- Parietal: line the wall of thoracic cavity.
 - it has 4 parts according to the region it covers:
 1. Cervical pleura (at the root of the neck).
 2. Costal pleura (lines the inner surface of the ribs, lateral, widest, large)
 3. Diaphragmatic pleura (over diaphragm).
 4. Mediastinal pleura (next to the heart).
- Parietal pleura is highly sensitive to pain because it is supplied by intercostal nerves. Visceral (cover lungs –directly-). Close to lung surface, and takes its shape. It is insensitive to pain and is supplied by autonomic nervous system



- The pleural cavity: it is a Potential space between parietal and visceral pleura that contains pleural fluid for soundless and frictionless movement of the lungs.
- Potential space means that there is no air, no pressure inside so the lungs can move freely.
- The space becomes true in diseases.
- There shouldn't be any fluid in the lungs because lungs should be able to expand to the maximum; anything (fluid or air) in this cavity would hinder their movement.
 - Pneumonia: inflammation of the surface of the lung that will result in forming pimples that leak serous fluid that will collect at the bottom. Can be detected by X-ray. Patient fights for air.
 - This fluid should be drained (Chest drains also known as **under water sealed** drains).
 - Empyema collection of pus in pleural cavity.
 - Pneumothorax occurs when air leaks into pleural cavity.
(This air pushes on the outside of your lung and makes it collapse)-Wikipedia-.
 - Hemothorax: blood in the cavity.

The formation of the lungs:-

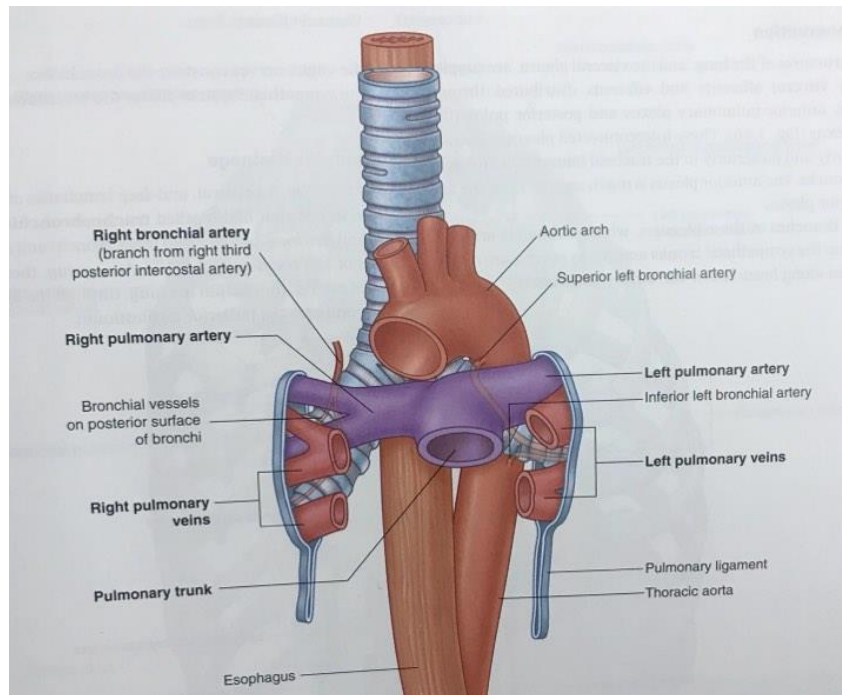


In the embryo, pleura is formed first (the balloon) then trachea forms from superior then the trachea is divided into 2 branches each branch has a bud (lung bud) this bud starts to evaginate itself through the pleural sac (the balloon).

The relationship of the lung to pleural sac is like a fist invaginated into a deflated balloon.

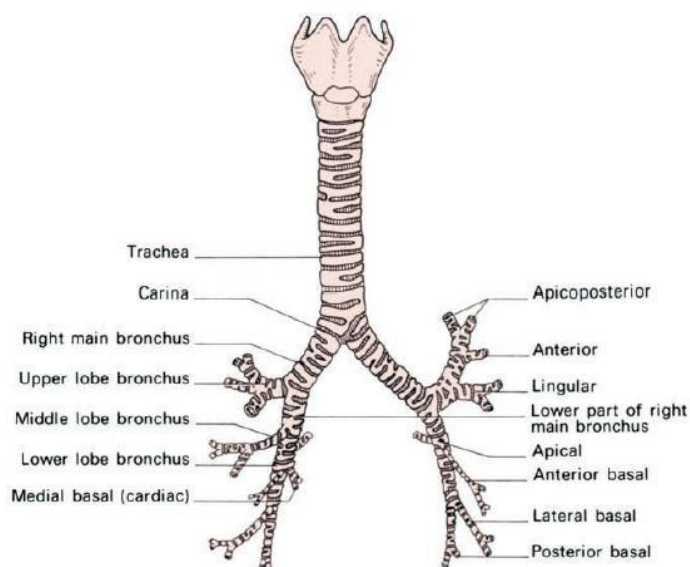
TRACHEA

- The trachea is 11.25 cm long.
 - It extends from lower end of larynx (same level as C6) to sternal angle (opposite the intervertebral disc between T4/T5) where it divides into right and left primary bronchi.
 - It passes within 2 regions, the neck and thorax (meaning it has a cervical part and thoracic part), (part of it is covered by manubrium).
 - It is a continuation of nose, pharynx, and larynx.
 - It is composed of around 20 C-shaped hyaline cartilaginous rings and are posteriorly replaced by smooth muscle, called trachealis that is supplied by autonomic; this is the muscle that contracts in asthma patients, so they take inhalers or pills.
- *Note :(sympathetic system is responsible for trachealis dilation and parasympathetic is responsible for its constriction).
- Tracheoscopy is used to open the airways in trauma patients, it is a lifesaver.
 - (I believe the doctor meant Tracheotomy which is an incision in the windpipe made to relieve an obstruction to breathing).



RIGHT PRIMARY BRONCHUS

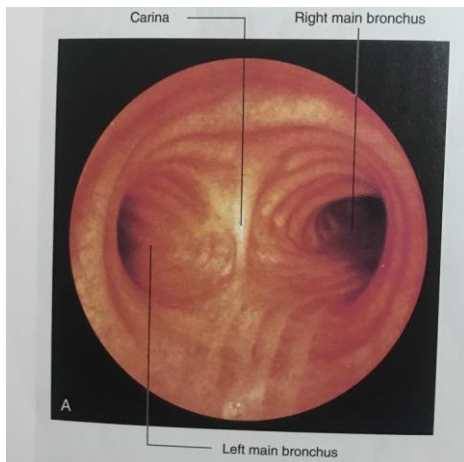
- It is shorter, wider, and more vertical than the left bronchus.
- It is about 1 inch long.
- Inhaled foreign bodies that enter trachea are commonly trapped in it.
- The inner angle between the main bronchi is called carina (front ship) it is the most sensitive part of the respiratory system.
- If an object is trapped in the airway on the carina the object MUST be coughed out or it goes in the right 1ry bronchus.



LEFT PRIMARY BRONCHUS

- It is narrower, longer, and more horizontal than the right 1ry bronchus.
- It is about 2 inches in long.

The picture below shows the difference between right and left 1ry bronchus:



In order to remember the bronchus, form and L using you LEFT HAND and make the dorsal part of the hand to face you. Your forefinger is the left 1ry bronchus, and your thumb is the right 1ry bronchus.

