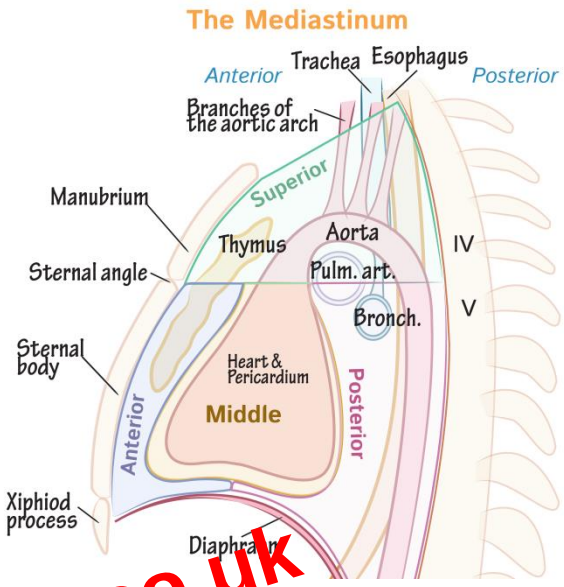
THORAX – FROM 128PG MOORES

OVERVIEW OF MEDIASTINUM

Meaning of mediastinum: it is the division of the thoracic cavity

Positions:

1. Superior to inferior : superior thoracic aperture to diaphragm
2. Anterior to posterior : sternum and costal cartilages to bodies of the thoracic vertebrae
   - Also called the middle septum
   - It is the central compartment of the thoracic cavity
   - It is covered by the mediastinal pleura on each side
   - It consists of thoracic viscera (thyroid gland, trachea, and esophagus) and heart, except lungs which are hollow and air or liquid filled structures. These all structures are united by loose connective tissue
   - It is highly mobile region in the living but rigid in a cadaver
   - It is also surrounded by blood and lymphatic vessels, lymph nodes, nerves and fat



How does the loose connective tissue help here?

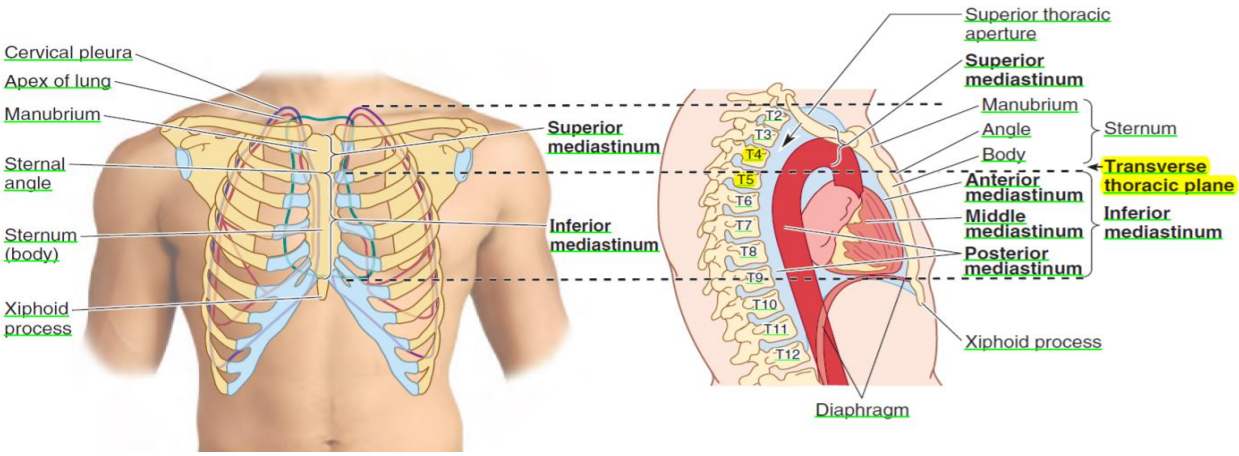
⇒ the elasticity of the lungs and parietal pleura helps the mediastinum to accommodate movement as well as volume and pressure changes in the thoracic cavity

⇒ helps in respiration, contraction of the heart and pulsation of the great arteries

This tissue becomes fibrous and rigid with age and less mobile

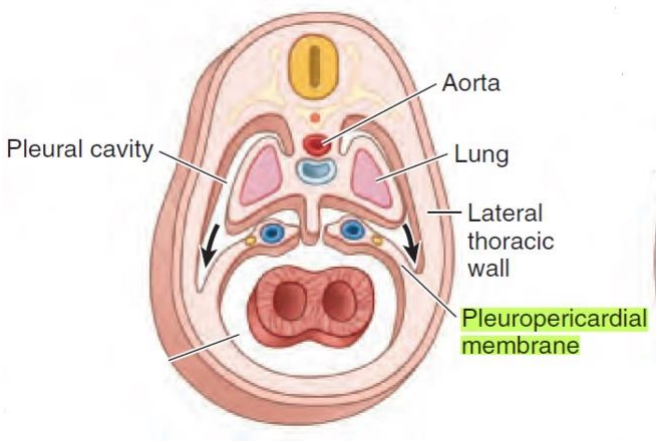
The division of the mediastinum into superior and inferior parts:

- superior mediastinum:
  - ✦ extends from superior thoracic aperture to the horizontal plane (it goes from the sternal angle anteriorly and passes junction of T4 and T5 vertebrae posteriorly) called the transverse thoracic plane
- middle mediastinum:
  - ✦ present in the middle of the above and below
  - ✦ it consists of pericardium and its contents like the heart and great vessels
  - ✦ great vessels include: ascending aorta, pulmonary trunk and SVC passing to and from the heart
- inferior mediastinum:
  - ✦ Is located between the transverse thoracic plane and the diaphragm
  - ✦ It divides the pericardium into anterior, middle and posterior parts



→Pain sensations conveyed by these nerves are commonly referred to the skin of the ipsilateral supraclavicular region (same side)

b) Vagus nerves
c) Sympathetic trunks → vasomotor (alters the diameter of blood vessels)



Pleuropericardial membrane

- ❖ It includes the phrenic nerve and is split or separated from the developing bidy wall by the developing pleural cavities

The lungs develop within the perocardioperitoneal canals

Superior mediastinum and great vessels:

It is superior to the transverse thoracic plane, passing through the sternal angle and the junction (intervertebral disc) of vertebrae T4 and T5

From anterior to posterior the contents are:

1. Thymus
2. Great vessels with the veins:
   - Brachipcephalic veins and SVC
   - Arteries: arch of aorta and roots of its major branches → brachiocephalic trunk, left common carotid artery and left subclavian artery
   - Nerves: vagus and phrenic nerves and cardiac plexus of the nerves
3. Inferior continuation of cervical viscera :
   - Trachea anteriorly and esophagus posteriorly
   - Nerves: left recurrent laryngeal nerve
4. Thoracic duct and lymphatic trunks

Hence the correct order:

Thymus → veins → arteries → airways → alimentary tract → lymphatic trunks

Thymus:

⇒ It is a primary lymphoid organ
⇒ Located in inferior part of the neck and the anterior part of the superior mediastnium
⇒ It is a flat gland with flask-shaped lobes that lies posterior to the manubrium and extends inot the anterior mediastnium → anterior to the fibrous pericardium
⇒ It is replaced by fat after puberty with changes
⇒ ***Rich arterial supply if the thymus***: derives from anterior intercostal and anterior mediastinal branches of the internal thoracic arteries
⇒ Veins of the thymus: they end in the left brachiocephalic, internal thoracic and inferior thyroid veins
⇒ Lymphatic vessels of the thymus: end in the parasternal, brachiocephalic and tracheobronchial lymph nodes

Great vessels:

Right and left brachiocephalic veins:

- These are formed posterior to the sternoclavicular joints by the union of the internal jugular and subclavian veins