

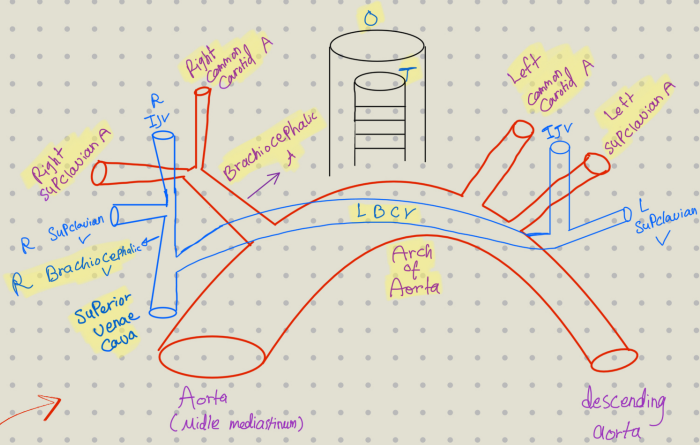
Anatomy Lec 2

we finished the previous lecture by discussing the contents of Superior mediastinum, which is what we will discuss in this lecture.

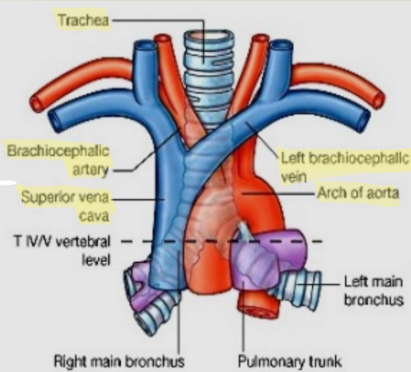
Contents of superior Mediastinum

- 1- Arch of Aorta and its branches
- 2- Brachiocephalic veins and superior vena cava
- 3- Thoracic duct
- 4- Thymus
- 5- Phrenic and vagus nerves
- 6- Trachea
- 7- Oesophagus

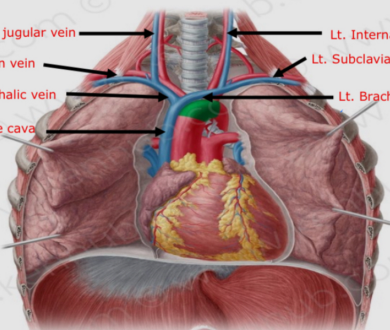
لا تنزعوا حنظل سهل بس بتجوعوا لبرصة



الاشياء التي على هذه الحالات لا يوجد بها



- Rt. Internal jugular vein
- Rt. Subclavian vein
- Rt. Brachiocephalic vein
- Superior vena cava
- Lt. Internal jugular vein
- Lt. Subclavian vein
- Lt. Brachiocephalic vein



تجوعوا مع البرصة السابقة :-

Brachiocephalic vein (Right and left)

Formation : By union internal jugular and subclavian veins

Beginning : Posterior to the sternoclavicular joint

Termination : 1st right costal cartilage

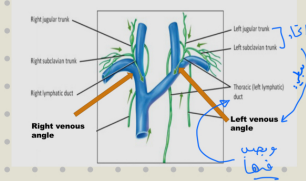
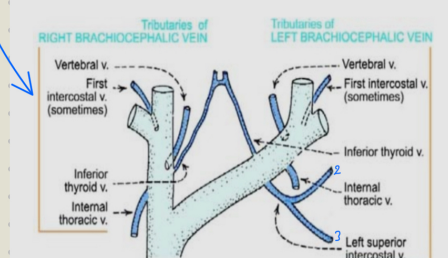
Both right and left Brachiocephalic veins joined together to form superior vena cava

N.B : The left Brachiocephalic vein is longer than the right

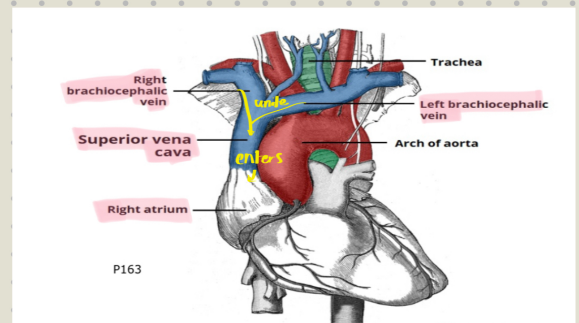
Brachiocephalic vein **WHY ??** لأنه يمشي من اليمين إلى اليسار
It passes from the left to the right side, anterior to the roots of the three major branches of the arch of the aorta

Tributaries of Brachiocephalic vein

Rt. Brachiocephalic vein	Lt. Brachiocephalic vein
Inferior thyroid vein	Inferior thyroid vein
Right vertebral vein	Left vertebral vein
Right Internal thoracic vein	Left Internal thoracic vein
Right first posterior intercostal	Left first posterior intercostal vein
	Left superior intercostal vein



Superior vena cava



Superior vena cava

Formation : By union the right and left Brachiocephalic veins

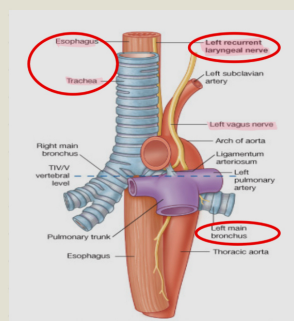
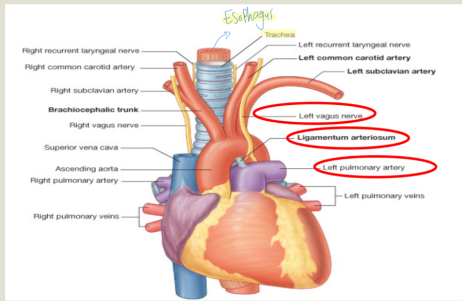
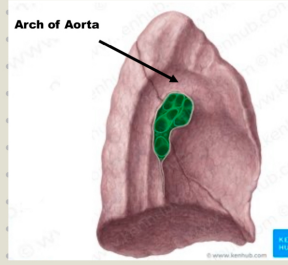
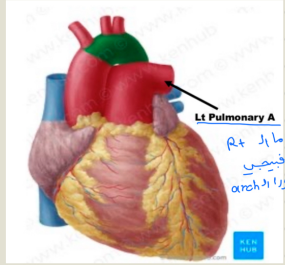
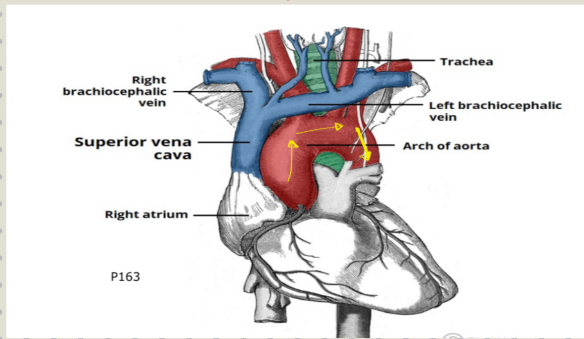
Beginning : 1st right costal cartilage

Termination : 3rd right costal cartilage

as it enters the right atrium of the heart

It receives the venous return from the upper half of the body, above the diaphragm

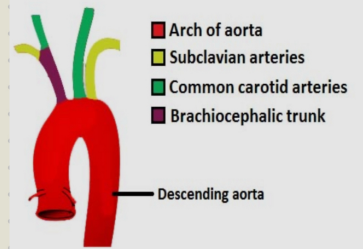
Arch of Aorta



Aortic arch branches

Three branches

1. Brachiocephalic trunk
2. Left common carotid artery
3. Left subclavian artery



Arteries of the superior mediastinum

I-Arch of the aorta

Beginning : Right border of sternum at **2nd right costal cartilage**

Termination: Lower border **4th thoracic vertebra**

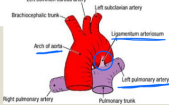
by becoming the **thoracic (descending) aorta**

Course:

- It arches superiorly, posteriorly and to the left, and then inferiorly.
- The arch ascends anterior to the right pulmonary artery and the bifurcation of the trachea.
- It passes over the root of the left lung to become at the **left** side of the trachea and esophagus

N.B The ligamentum arteriosum :

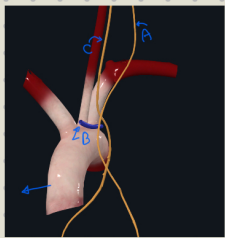
- it is the remnant of the fetal ductus arteriosus.
- It passes from the root of the left pulmonary artery to the inferior surface of the arch of the aorta



Arch of Aorta Relations :-

Anteriorly and to the left:

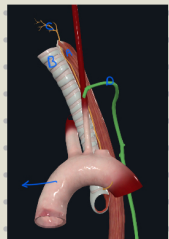
- ① left phrenic, left vagus ② and left superior intercostal vein



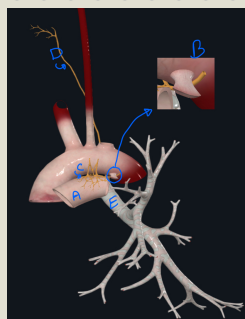
Anterior view

Posteriorly and to the right:

- ③ Esophagus, trachea, left recurrent laryngeal nerve and thoracic duct



Side view



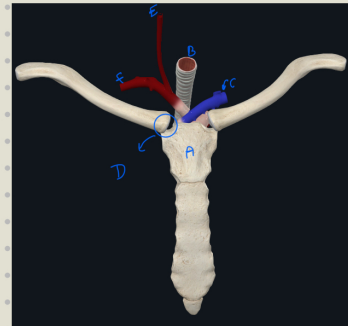
Side view

Inferiorly :

- A ✓ Bifurcation of pulmonary trunk
- B ✓ Ligamentum arteriosum.
- C ✓ Superficial cardiac plexus
- D ✓ left recurrent laryngeal nerve.
- E ✓ Left main bronchus

① Brachiocephalic trunk :-

- It arises posterior to the manubrium, where it is anterior to the trachea and posterior to the left brachiocephalic vein
- At the **right sternoclavicular (SC) joint**, it divides into the right common carotid and right subclavian arteries.



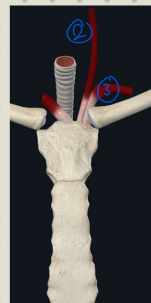
Antero-superior view

② Left Common Carotid artery :-

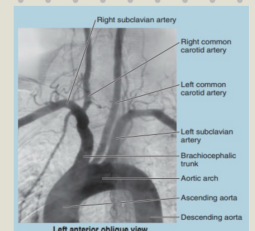
- It arises posterior to the manubrium
- It enters the neck by passing posterior to the **left SC joint**.

③ Left Subclavian artery :-

- It arises from the posterior part of the arch behind left common carotid artery
- It leaves the thorax and enters the root of the neck by passing posterior to the **left SC joint**.



Anterior view



SC Joint Recap:-

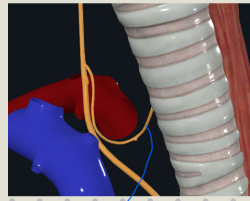
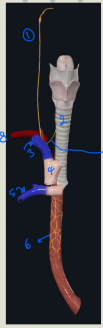
- اندر 4 جات بهای العاصره
- 3 → Arch of Aorta branches.
- 1 → Brachiocephalic v beginning

Nerves of the superior mediastinum

I-Vagus Nerve

Right vagus nerve

- It passes on the right side of the trachea, then posterior to the right brachiocephalic vein, SVC
- It contributes to Rt. pulmonary, esophageal and cardiac plexuses
- It gives right recurrent laryngeal nerve, which hooks around the right subclavian artery and ascends between the trachea and esophagus to supply the larynx



Right Recurrent laryngeal N

The left vagus nerve

- It enters the mediastinum between the left common carotid artery and left subclavian artery.
- It gives left recurrent laryngeal nerve which hooks around the arch of the aorta, lateral to the ligamentum arteriosum, and ascends in the groove between the trachea and the esophagus to supply the larynx

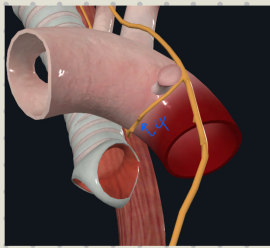
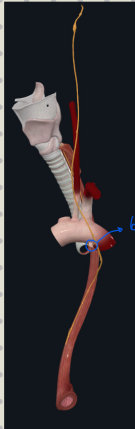
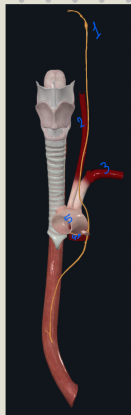
Both vagi are passing behind the root of the lung



Left Lung



Right Lung

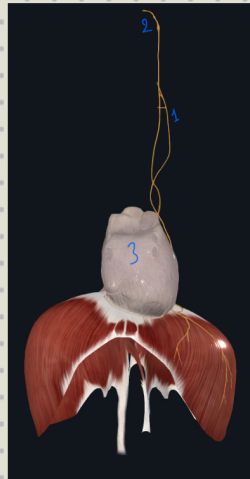


The left phrenic nerve

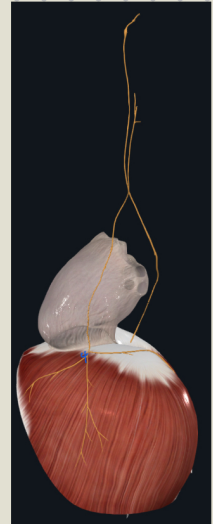
It crosses the left vagus, then, it runs along the fibrous pericardium, the left atrium and ventricle of the heart.

It pierces the diaphragm to the left of the pericardium

Both phrenic nerves are passing anterior to the root of the lungs

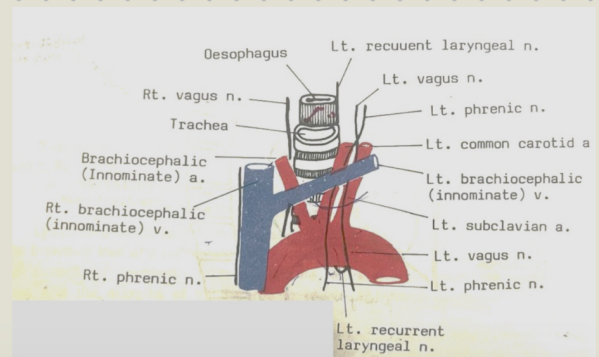


Anterior view



Side view

استبقوا هون
انتهى
Post
Phrenic
فبكل
medium

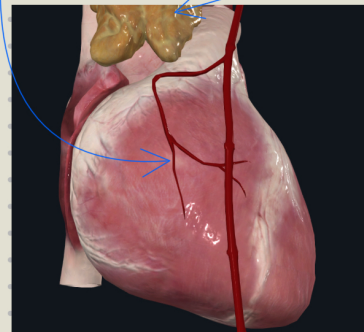


Anterior Mediastinum

It lies between pericardium and sternum

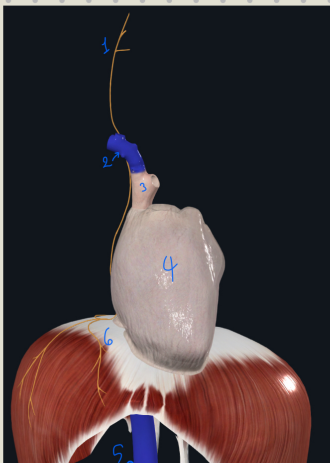
Contents :

- 1-Superior and inferior sterno-pericardial ligaments
- 2-Mediastinal branches of internal thoracic artery.
- 3-Remains of thymus gland.
- 4-Lymph nodes.



The phrenic nerves : is motor and sensory nerve supply for the diaphragm and sensory to the pericardium and mediastinal pleura.

- The right phrenic nerve :** passes along the right side of the right brachiocephalic vein, SVC, and the pericardium over the right atrium and descends on the right side of the IVC to pass through caval opening of the diaphragm.



A 62 years old male patient has diagnosed as lung cancer .
He is a heavy smoker, diabetic, and hypertensive. During a chemotherapy session for lung cancer, he complained of dyspnea for a week, and the doctor noticed edema in the face and arms .
The doctor asked him to raise his hands above the head, and he noticed increased the edema.

What is your provisional diagnosis ??

