LARGE VEINS OF THE THORACIC

Brachiocephalic Veins

*The **right brachiocephalic vein** is formed at the root of the neck by the union of the right subclavian and the right internal jugular veins .*

*The l**eft brchiocephalic vein** has a similar origin . it passes obliquely downward and to the right behind the manubarium sterni and in front the large branches of the aortaic arch . it join the right brachiocephalic vein to form the **superior vena cava**.*
***superior vena cava,** contains all the venous blood from the head and neck and both upper limbs , it passes downward to end in the right atrium of the heart . The vena azygos joins the posterior aspect of the superior vena cava just before it enters the pericardium.*

***inferior vena cava** ,pierces the central tendon of the diaphragm opposite the eight thoracic vertebra and almost immediately enters the lowest part of the right atrium .*

***pulmonary veins ,**two pulmonary veins leave each lung carrying oxygenated blood to the left atrium of the heart*

LARGE ARTERIES OF THE THORACIC

AORTA

***The** aorta in the thoracic may be divided into three parts ; the ascending aorta , the arch of the aorta , and the descending aorta.*

ASCENDING AORTA

*the ascending aorta commences at the base of the left ventricle and runs upward and forward to come to lie behind the right half of the sterna angle , where it becomes continuous with the arch of the aorta . together with the pulmonary trunk , it is enclosed in a sheath of serous pericardium. branches : the **right coronary artery** arises from the anterior aortic sinus , and the **left coronary artery** arises from left*

posterior aortic sinus .

ARCH OF THE AORTA

***T**he arch of the aorta is continuation of the ascending aorta . it lies behind the manubaruim sterni and runs upward ,backward, to the left in of the trachea. and at the level of the sternal angle becomes continuous with the descending aorta. **Branche**s ;the **brachiocephalic artery** arises from the convex surface of the aortic arch it passes upward and the right of the trachea and divides into the right subclavian and common carotid artery behind the right sternoclavicular joint. **left common carotid artery** arises from the aortic arch on the left side of the brachiocephalic artery . it runs upward and to the left of the trachea and enter the neck and the left sternoclavicular joint . **left subclavian artery** arises from the aortic arch behind the left common carotid artery , it runs upward along the left side of the trachea and the esophagus to enter the root of the neck*

DESCENDING AORTA

*begins as continuation of the arch of the aorta on the left side of the lower border of the body of the fourth thoracic vertebra . extends downward in the posterior mediastinum to the level of the twelfth thoracic vertebra, where it passes through the aortic opening of the diaphragm in the midline and becomes continuous with the abdominal aorta. **Branches** ; **posterior intercostals arteries** are given off to the lower nine intercostals space on each side . **subcostal arteries** are given off on each side and run along the lower border of the twelfth rib.*

***pericardial ,esophageal, bronchial arteries** are small branches that are distributed to these organ.*

PULMONARY TRUNK

The pulmonary trunk conveys deoxygenated blood from the right ventricle of the heart to the lungs . it leaves the upper part of the right ventricle and runs upward ,backward , and to the left it is about 2 inch

long and terminates in the concavity of the aortic arch by dividing into right and left pulmonary arteries , Together with the ascending aorta , its enclosed in a sheath of the serous pericardium.

***BRANCHES** ;The **right pulmonary artery** runs to the right behind the ascending aorta and superior venacava to enter the root of the lung.*

*The **left pulmonary artery** run to the left in front the descending aorta to enter the root of the lung*

*The **ligamentum arteriosum** is fiberous band that connect the bifurcation of the pulmonary trunk to the lower concave surface of the aortic arch*

PERICARDIUM

The pericardium is a fiberoserous sac that encloses the heart and the roots of the great vessels .it lies within the middle mediastinum . it is located posterior to the body of the sternum and the second to the sixth costal cartilage .

fiberous pericardium

*is the fiberous part of the sac it is strong and limits unnecessary movement of the heart . it is firmly attached below to the central tendon of the diaphragm ,it fused with outer coats of the great blood vessels passing through it ,namely, the aorta , the pulmonary trunk ,the superior & inferior vena cava & pulmonary vein ,it attach in the front to the sternum by the **sternopericardial ligaments** .*

serous pericardium

*has **parietal and visceral layer** ;The **parietal layer** line the fibrous pericardium & is reflect around the roots of the greatvessels to become continuous with visceral layer of serous pericardium that closely cover the heart*

*The **visceral layer** is closely applied to the heart & is often called the **epicardium** , the slitlike space between the parietal and visceral layer is referred to as the pericardial cavity ,contains small amount of the **pericardial fluid which** act as lubricant to facilitate movement of the heart .*

HEART