

(2019)

# PERICARDIUM

→ It is a fibrous sac that encloses heart & roots of great blood vessels.

**Location:** It lies within middle mediastinum, posterior to body of sternum and 2-6<sup>th</sup> costal cartilage & anterior to T<sub>5</sub> - T<sub>8</sub> vertebrae.

## Functions:

- restrict excessive movements of heart.
- limit cardiac distension
- serves as lubricated container in which heart can contract and relax smoothly.

## SUBDIVISIONS:

2 components:

- outer single layered fibrous sac → fibrous pericardium.
- inner double layered serous sac → serous pericardium.

**development** → heart & g. BV

lie inside fibrous sac & invaginate serous sac → so

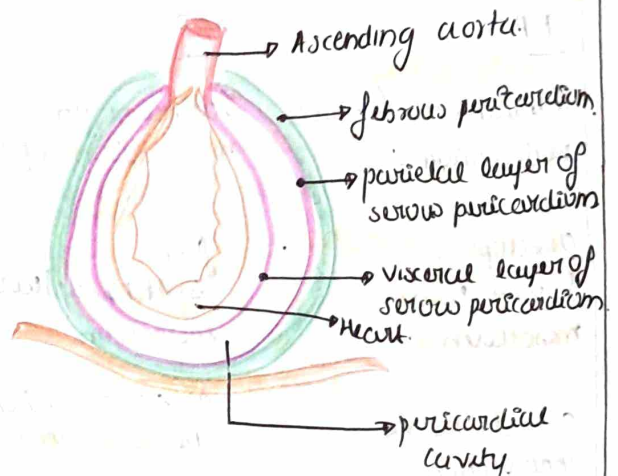
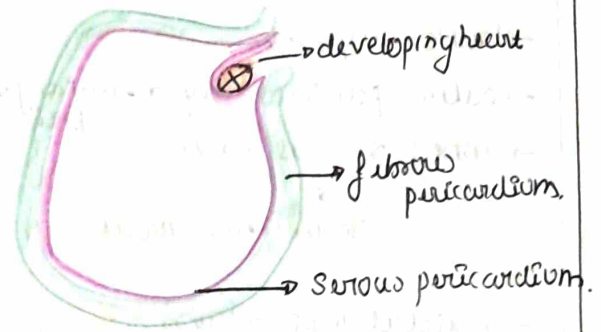
External surface of heart & internal surface of fibrous pericardium are lined by serous pericardium.

∴ pericardium → 3 layers.  
out to in.

→ fibrous pericardium.

→ parietal layer of serous pericardium.

→ visceral layer of serous pericardium



## FIBROUS PERICARDIUM.

- Conical shape.
- apex → fused with outer coats of g. BV.
- base → fused with central tendon of diaphragm.
- anteriorly → to sternum → by superior sternopericardial ligaments.
- posteriorly → principal bronchi, oesophagus, descending thoracic aorta.
- each side → phrenic nerves and pericardiophrenic vessels.

## Serous pericardium

- double layered.
- outer parietal layer → forms fibrous pericardium.
- inner visceral layer.
  - ↓
  - closely lines heart.
- parietal pericardium
- visceral pericardium

pp

adherent to fibrous pericardium.

develops → somatopleuric mesoderm

somatic nerve innervation

sensitive to pain.

vp

adherent to myocardium of heart.

from splanchnopleuric mesoderm.

AN → innervation, autonomic innervation

insensitive to pain

pericardial cavity → space btw p & v layer of serous pericardium → pericardial fluid filled.

### Contents

- ① Heart + vessels.
- ② ascending aorta.
- ③ pulmonary trunk
- ④ SVC
- ⑤ IVC.
- ⑥ pulmonary veins.

## SINUSES OF PERICARDIUM

2 sinuses btw parietal & visceral layer of serous pericardium.

(1) Transverse sinus

(2) Oblique sinus

pericardium → at roots of GB and arranged arterial tube venous tube  
into tubes (as. aorta + pulm trunk) (SVC, IVC + pulm. veins)

### Transverse sinus (4 pulm. veins)

• It is a transverse recess behind ascending aorta & pulmonary trunk & in front of SVC & pulmonary veins.

• develops due to degeneration of dorsal mesocardium.

• It is a horizontal passage between two pericardial tubes.

• on each side, it communicates with the general pericardial cavity.

### Oblique pericardial sinus

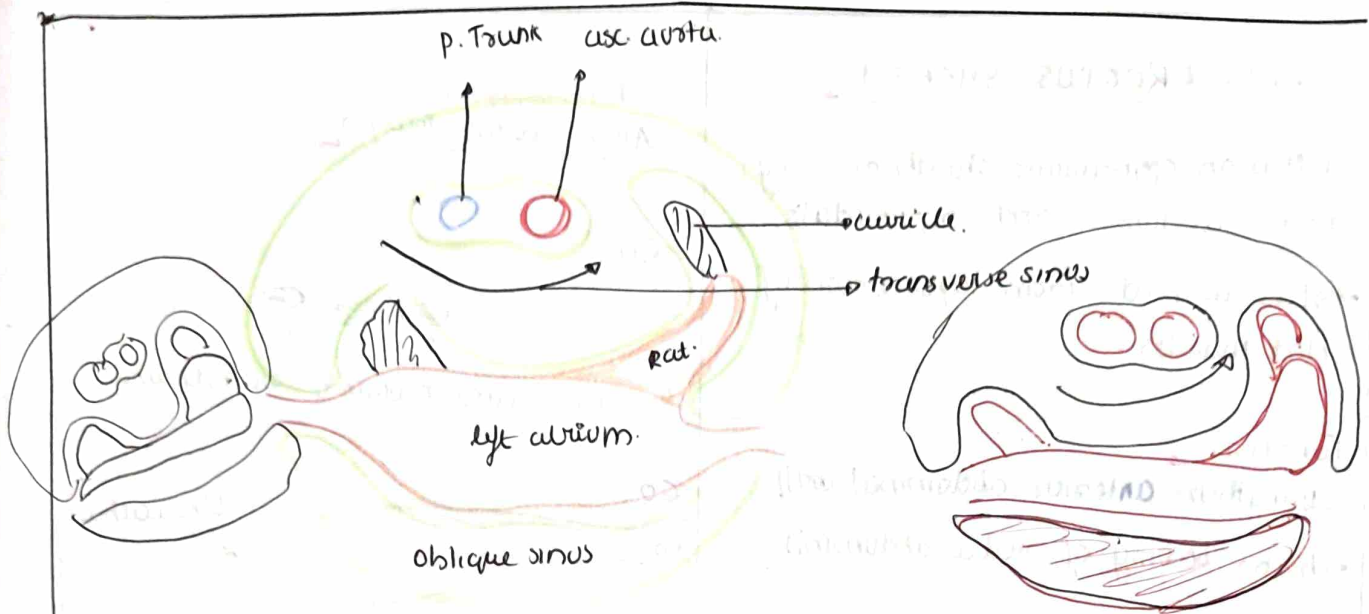
situated behind left atrium.

• enclosed by J-shaped sheath of visceral layer of S.P.

→ encloses 6 veins.  
IVC, SVC, 4 pulm. veins

→ develops due to absorption of 4 pv into left atrium.

→ allows distension of left atrium.



### BOUNDARY.

- Anteriorly: left atrium
- posteriorly: by parietal pericardium.
- right side: by reflection of visceral pericardium along SVC, IVC, right pul. veins.
- left side: reflection of visceral pericardium along left pulmonary veins
- superiorly: by reflection of visceral pericardium along right & left superior pulmonary veins.
- Inferiorly: open.

### ARTERIAL SUPPLY.

- Fibrous & parietal pericardium → Internal thoracic musculophrenic descending thoracic aorta.
- visceral layer of serous pericardium → coronary artery.

### NS

- visceral → sympathetic trunk & vagus (AN)
- ∴ pain insensitive.

- parietal & fibrous → phrenic nerve (somatic)
- ∴ pain sensitive.

∴ pairs of pericarditis originates from parietal pericardium.

### CLINICAL.

- during cardiac surgery, ligature is passed through T5 around aorta & PT. → Amp of Transverse sinus.
- pericarditis: inflammation of serous pericardium.
- pericardial: serous cavity → fluid effusion
- fluid excess → diminished CO "cardiac tamponade"
- pericardial friction rub → heard through steth.