THORAX SPOTTERS

PART - 1

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FIRST YEAR MBBS

SPOTTER – 01

A) Identify the colored structure ?

B) What is its significance ?

ANSWERS – 01

A) Sternal angle (angle of Louis)

B) *At this level, 2nd costal cartilage articulates with the sternum, hence it is an important landmark for counting the ribs.

*Ascending aorta ends, arch of aorta starts and ends, descending aorta begins at this level.

*Trachea bifurcates into right and left principal bronchi.

*Azygos vein arches over the root of right lung to end in SVC.

*Marks the plane of separation of superior and inferior mediastinum.

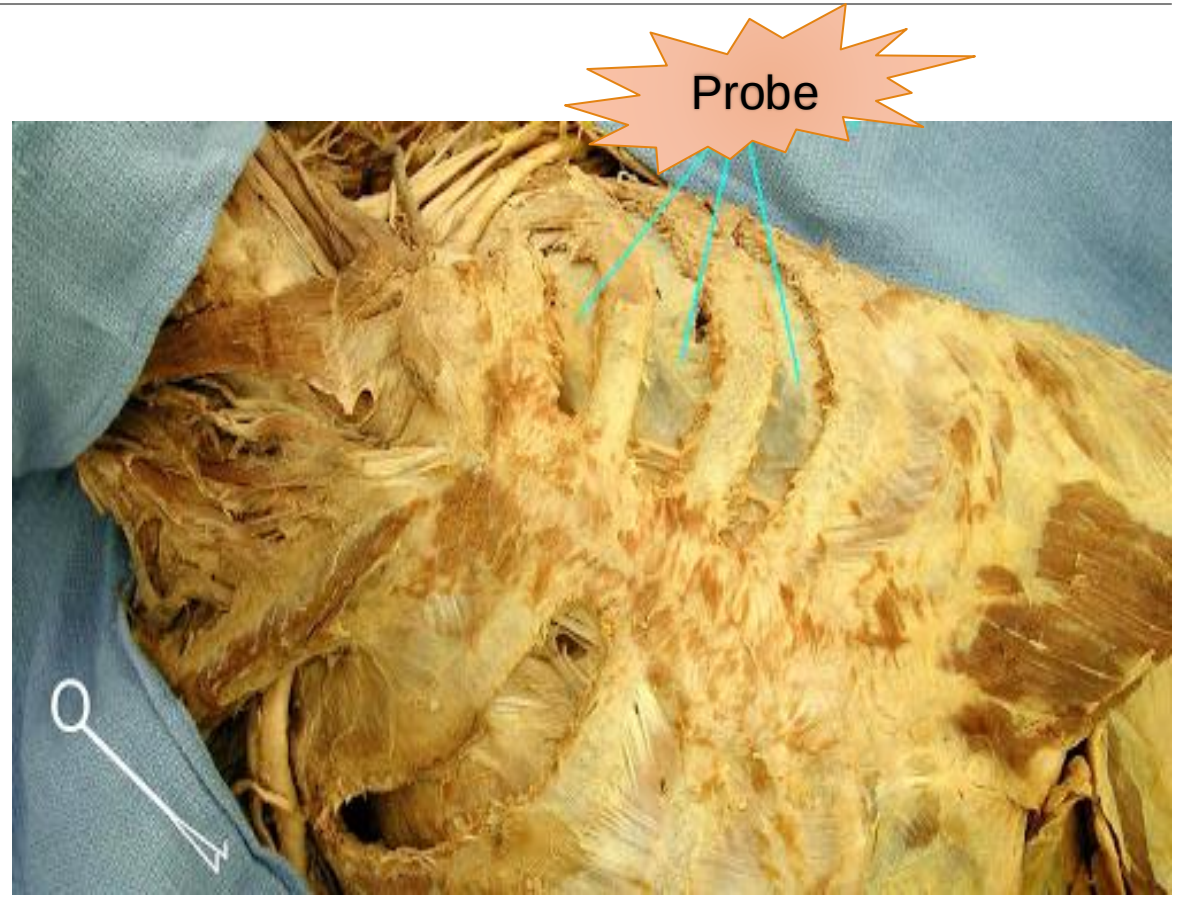
*Pulmonary trunk divides into right and left pulmonary arteries at this level.

SPOTTER – 02

A) Identify the probed space ?

B) Give its boundaries ?

C) Mention its contents ?



ANSWERS – 02

A) Intercostal space

B) Above : Sharp lower margin of the upper rib and its cartilage.

Below : Blunt upper margin of the lower rib and its cartilage.

Infront : Lateral border of the sternum between the costal notches.

Behind : Body of the corresponding thoracic vertebrae.

C) * 3 intercostal muscles : External intercostal, internal intercostal, intercostalis intimus.

* Intercostal vessels and nerves.

* Intercostal lymph vessels and lymph nodes.

SPOTTER – 03

A) Identify the pinned structures ?

B) Give its attachments ?

C) Mention its nerve supply ?

D) Give its actions ?

ANSWERS – 03

A) Yellow = External intercostal muscle ; White = Internal intercostal muscle.

B) * External intercostal muscle :

Origin – Lower border of rib above.

Insertion – Upper border (outer lip) of rib below.

* Internal intercostal muscle :

Origin – Floor of the costal groove of rib above.

Insertion – Upper border (inner lip) of rib below.

C) Both are supplied by intercostal nerve of the same space.

D) * External intercostal muscles elevates the rib during inspiration.

* Internal intercostal muscles elevates the rib during expiration.

SPOTTER – 04

A) Identify the structure ?

B) Give its attachments ?

C) Mention its nerve supply ?

D) Give its actions ?

ANSWERS – 04

A) Innermost intercostal muscle (Intercostalis intimus).

B) * Origin – inner surface of rib above.

* Insertion – inner surface of rib below.

C) Intercostal nerve of the same space.

D) Elevates the rib during expiration.

SPOTTER – 05

A) Identify the structure ?

B) What it is a branch of ?

C) Give its terminal branches ?

D) Give its level of termination ?

E) Mention its applied aspect ?

ANSWERS – 05

A) Internal thoracic artery (Internal mammary artery).

B) 1st part of subclavian artery.

C) Musculophrenic artery and superior epigastric artery.

D) 6th intercostal space.

E) Used for coronary artery bypass grafting.

SPOTTER – 06

A) Identify the structure ?

B) Mention its formation ?

C) Give its termination ?

ANSWERS – 06

A) Internal thoracic vein.

B) Formation – From superior epigastric vein.

C) Termination – Into brachiocephalic vein.

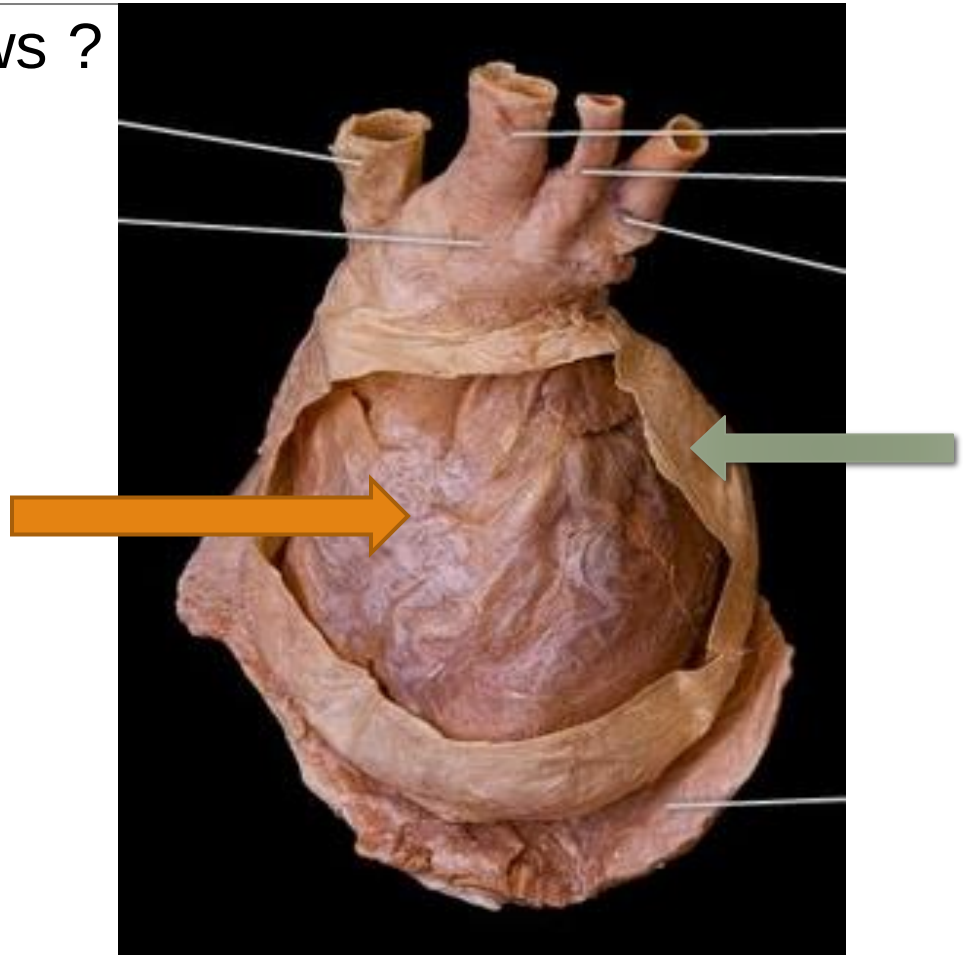
SPOTTER – 07

A) Identify the structures marked by the arrows ?

B) Give their development ?

C) Give their blood supply ?

D) Mention their nerve supply ?



ANSWERS – 07

A) Grey = Fibrous pericardium ; Orange = Visceral layer of serous pericardium.

B) Development : Fibrous pericardium – Derived from septum transversum.

Visceral pericardium – Derived from splanchnopleuric layer of lateral plate mesoderm.

C) Blood supply : Fibrous pericardium – Internal thoracic arteries, musculophrenic arteries, descending thoracic aorta and their corresponding veins.

Visceral pericardium – Coronary arteries.

D) Nerve supply : Fibrous pericardium – Phrenic nerves (somatic nerve fibres).

Visceral pericardium – Branches of sympathetic trunks and vagus nerves (autonomic nerve fibres).

SPOTTER – 08

A) Identify the probed space ?

B) Give its boundaries ?

C) Give its clinical importance ?

ANSWERS – 08

A) Transverse sinus

B) Anterior : Aorta, pulmonary trunk.

Posterior : Superior vena cava , left atrium.

Above : Bifurcation of pulmonary trunk.

Below : Upper surface of left atrium.

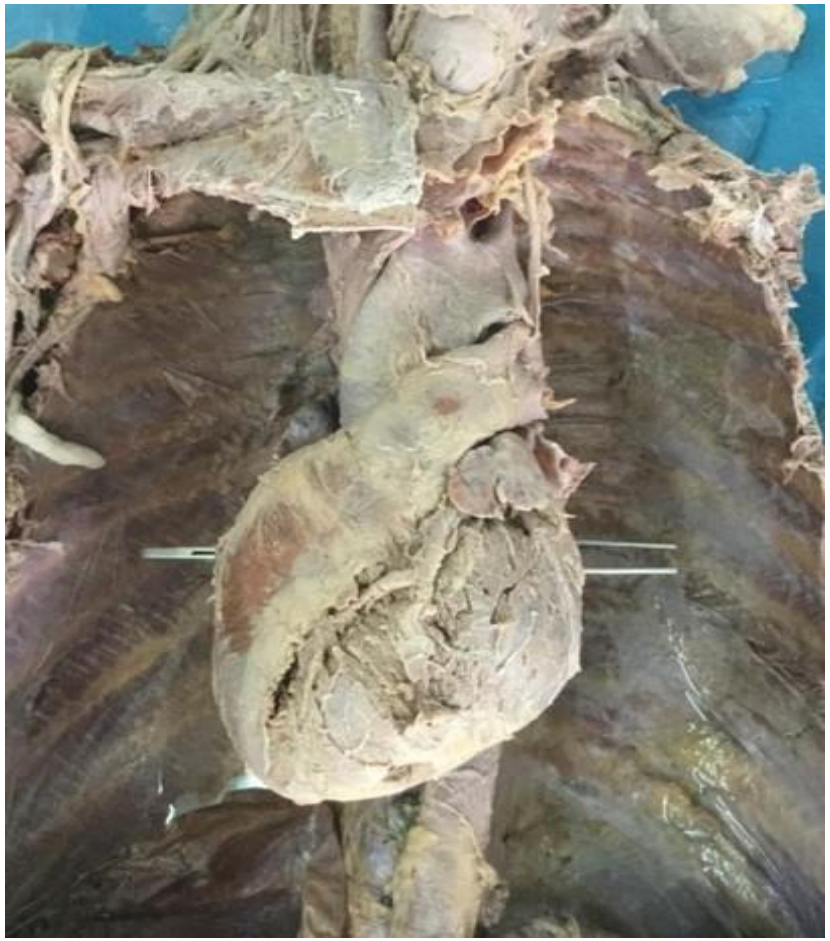
C) To ligate the great vessels during surgery.

SPOTTER – 09

A) Identify the probed space ?

B) Give its boundaries ?

C) Give its function ?



ANSWERS – 09

A) Oblique sinus

B) Anterior : Left atrium.

Posterior : Parietal pericardium covering posterior part of fibrous pericardium.

Right side : Right pair of pulmonary veins and IVC.

Left side : Left pair of pulmonary veins.

Above : Upper margin of left atrium.

C) Permits distension of left atrium during return of oxygenated blood in it from lungs.

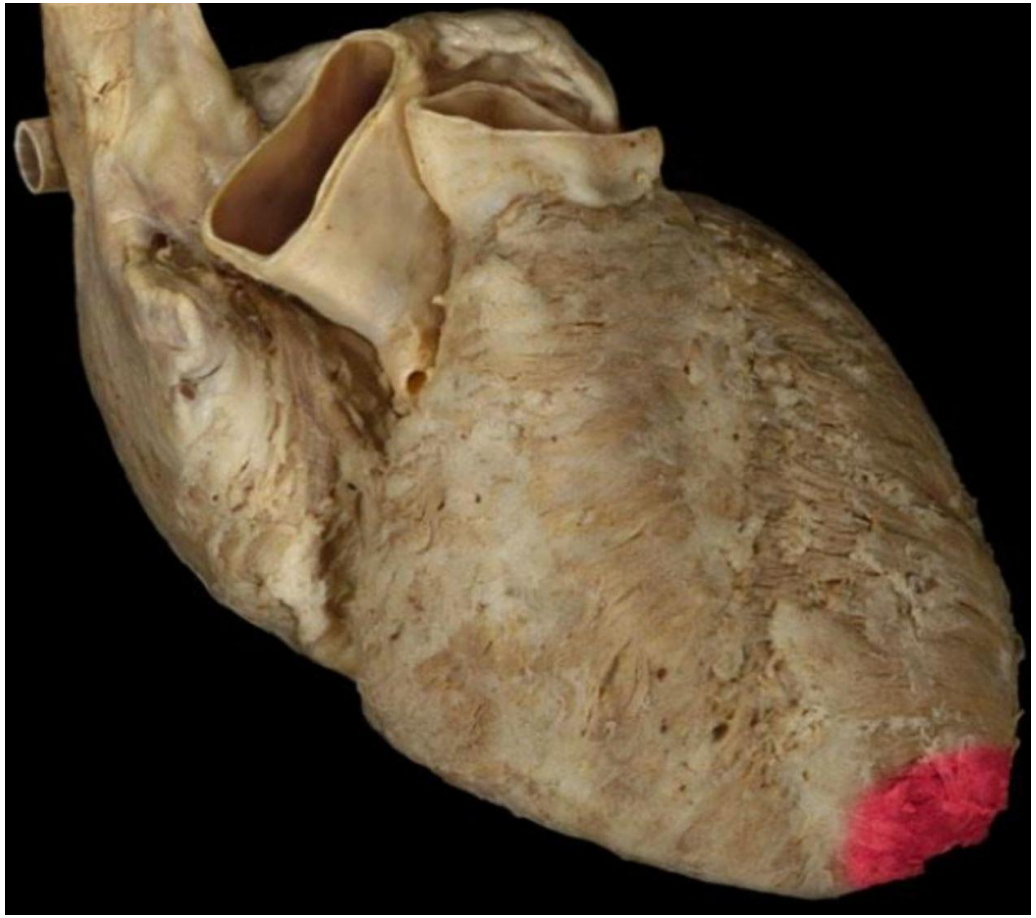
SPOTTER – 10

A) Identify the colored structure ?

B) Give its surface marking ?

C) Which part of the heart forms this ?

D) Give its clinical significance ?



ANSWERS – 10

A) Apex of the heart (apex cordis).

B) Lies at the level of 5th left intercostal space, 9 cm lateral to the midsternal line, just medial to the midclavicular line.

C) Formed by the left ventricle.

D) Cardiac apex or apex beat is normally on the left side but in dextrocardia, the apex is on the right side.

SPOTTER – 11

A) Identify the pinned structure ?

B) What are the structures opening into it ?

C) Give its development ?

ANSWERS – 11

A) Right atrium

B) SVC, IVC, Coronary sinus, Venae cordis minimae, Anterior cardiac veins.

C) Development : *Rough anterior part : Derived from right half of primitive atrium.

*Smooth posterior part : Derived from right horn of sinus venosus.

SPOTTER – 12

A) Identify the pinned structure ?

B) Name the structures present in it ?

ANSWERS – 12

A) Anterior interventricular groove.

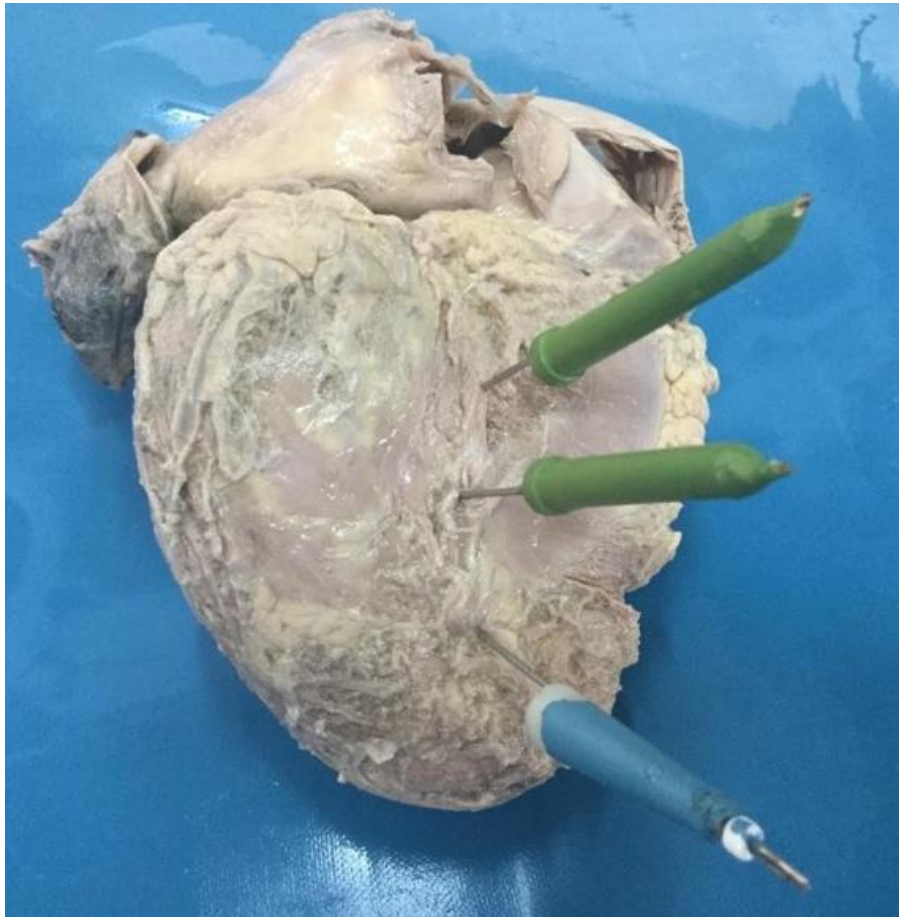
B) *Anterior interventricular branch of left coronary artery (left anterior descending artery).

*Great cardiac vein.

SPOTTER – 13

A) Identify the pinned structure ?

B) Name the structures present in it ?



ANSWERS – 13

A) Posterior interventricular groove.

B) *Posterior interventricular branch of right coronary artery (posterior descending artery).

*Middle cardiac vein.

*Anastomosis between interventricular branches of both coronary arteries.

SPOTTER – 14

A) Identify the pinned structure ?

B) Name the structures present in it ?

ANSWERS – 14

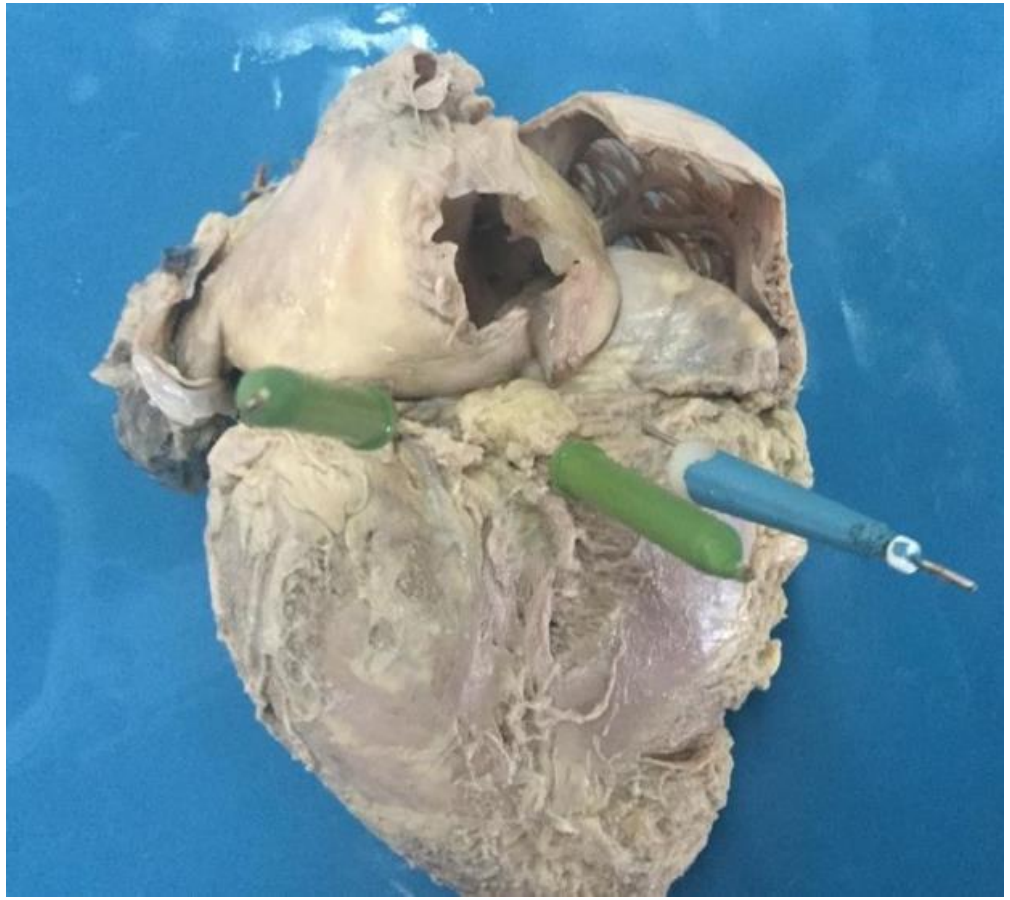
A) Right anterior coronary sulcus (Right anterior atrioventricular groove).

B) *Trunk of right coronary artery.

SPOTTER – 15

A) Identify the pinned structure ?

B) Name the structures present in it ?



ANSWERS – 15

A) Posterior coronary sulcus (Posterior atrioventricular groove).

B) *Coronary sinus.

*Anastomosis of right and left coronary arteries.

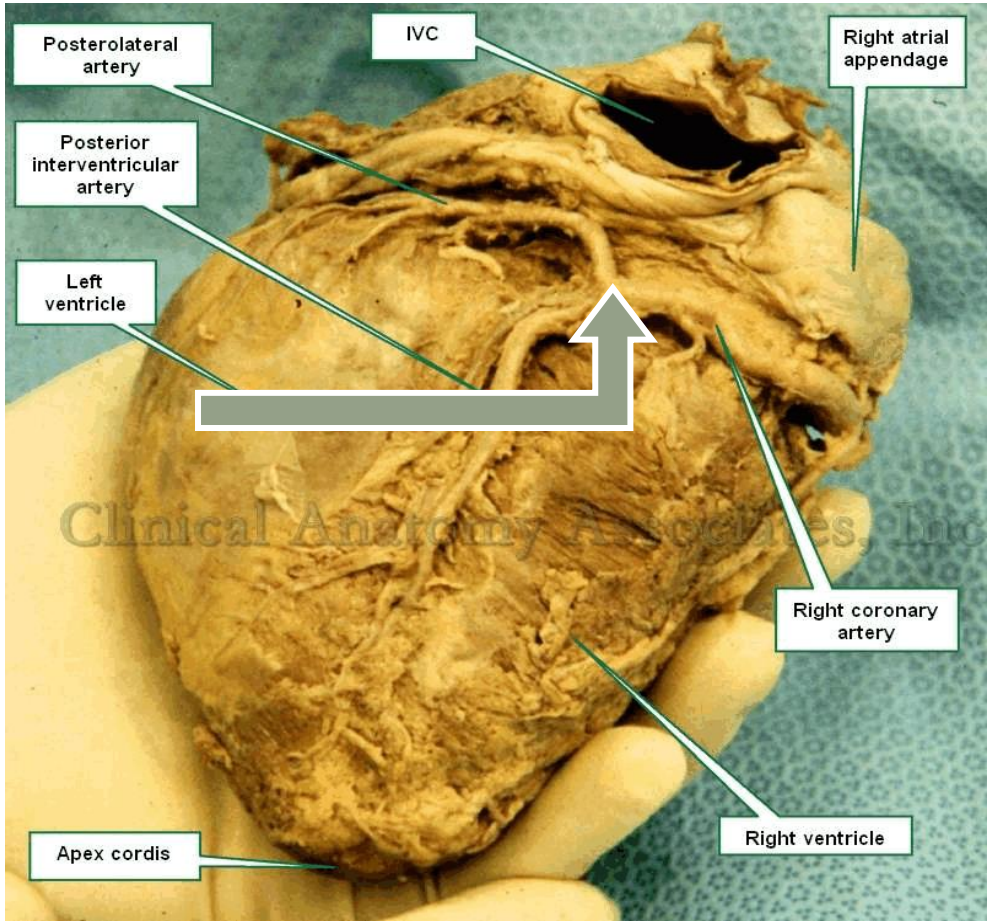
SPOTTER – 16

A) Identify the pointed area of the organ ?

B) Describe about that area ?

C) Give its contents ?

D) Mention its clinical significance ?



ANSWERS – 16

A) Crux of the heart (crux cordis).

B) It is the meeting point of interatrial groove, posterior interventricular groove and posterior part of atrioventricular groove.

C) Anastomotic point of right and left coronary artery.

D) *Anatomical landmark used in angiography.

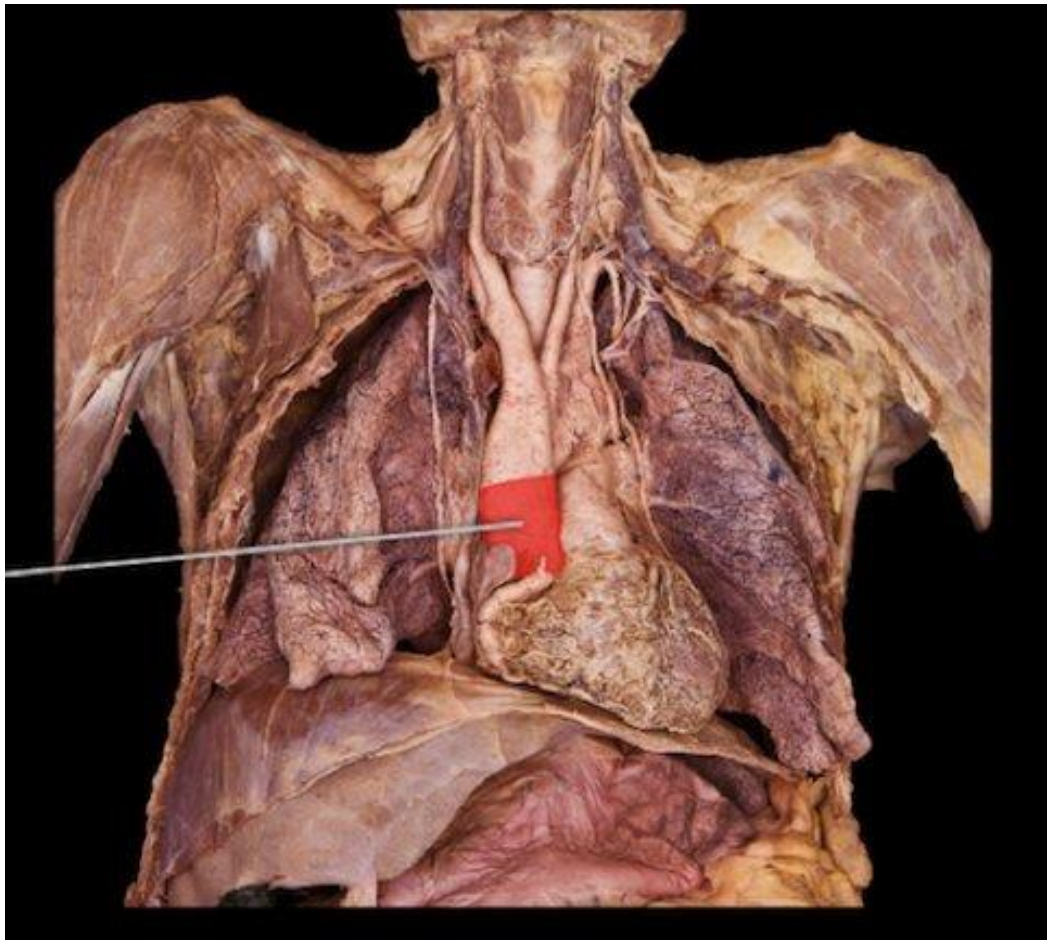
*Surgically important because AV nodal artery arises from the right coronary artery at the level of crux cordis.

SPOTTER – 17

A) Identify the red colored structure ?

B) Give its branches ?

C) Give its development ?



ANSWERS – 17

A) Ascending Aorta

B) Branches : Left and right coronary arteries.

C) Development : Left limb of aortic sac (part of truncus arteriosus).

SPOTTER – 18

A) Identify the pinned structure ?

B) Give its branches ?

C) Give its development ?

ANSWERS – 18

A) Arch of aorta.

B) Branches : *Brachiocephalic trunk.

*Left common carotid artery.

*Left subclavian artery.

C) Development : *Left horn of aortic sac.

*Left 4th aortic arch.

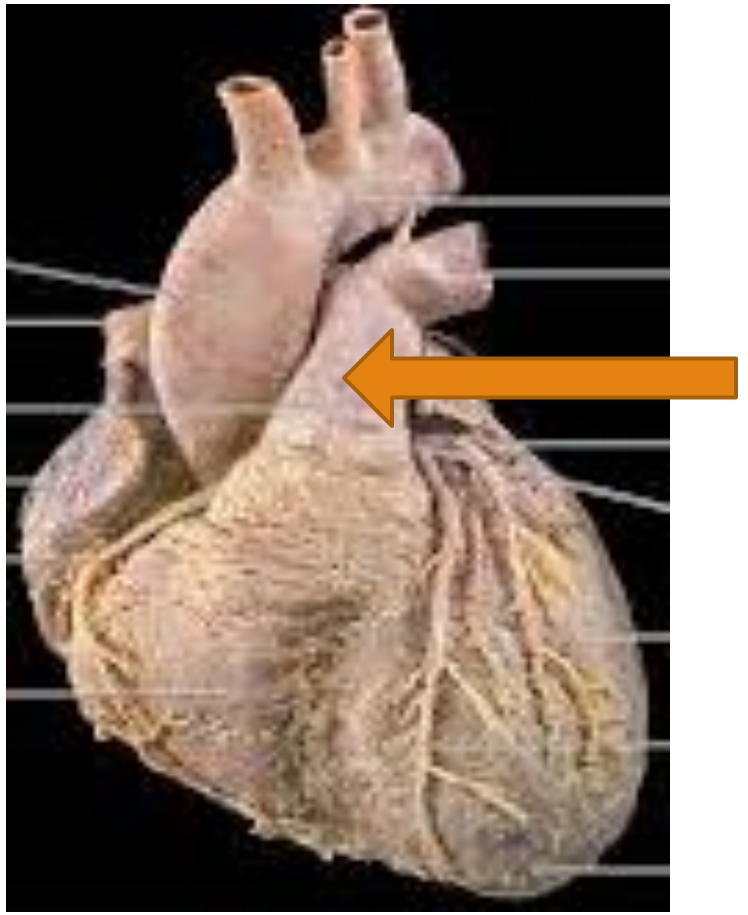
*Left dorsal aorta.

SPOTTER – 19

A) Identify the structure marked by the arrow?

B) What are the divisions of the structure ?

C) Give its development ?



ANSWERS – 19

A) Pulmonary trunk.

B) Divisions : Left and right pulmonary arteries.

C) Development : Right limb of the truncus arteriosus divided from aorta by spiral septum.

Left pulmonary artery : Ventral part of left 6^{th} aortic arch.

Right pulmonary artery : Ventral part of right 6^{th} aortic arch.

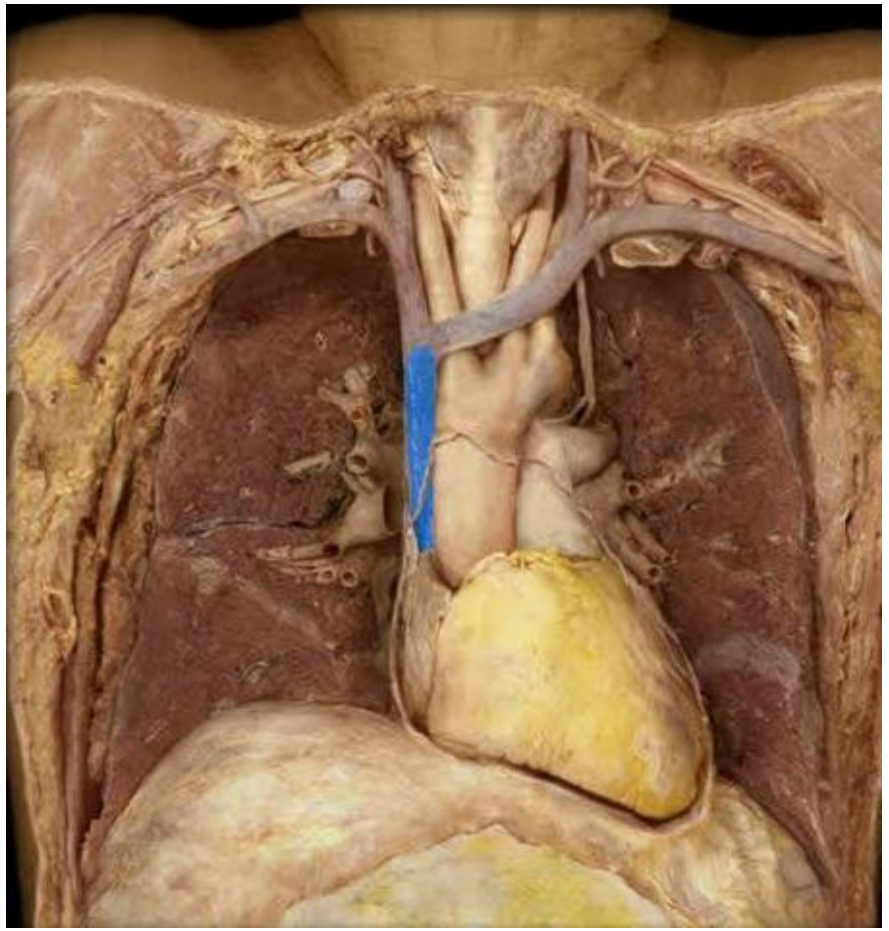
SPOTTER – 20

A) Identify the blue colored structure ?

B) Give its formation ?

C) Give its termination ?

D) Give its tributaries ?



ANSWERS – 20

A) Superior vena cava.

B) Formation : By the union of right and left brachiocephalic veins.

C) Termination : Posterior part of right atrium.

D) Tributaries : *Right and left brachiocephalic veins.

*Azygos vein.

*Pericardial veins.

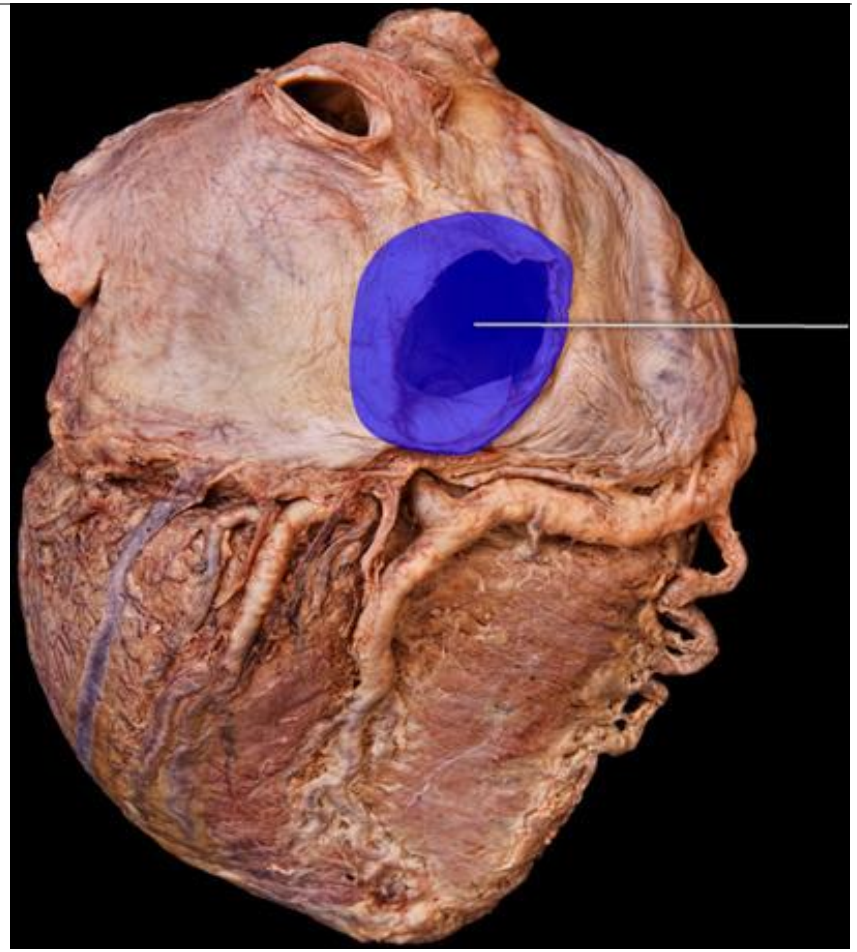
*Mediastinal veins.

SPOTTER – 21

A) Identify the blue colored structure ?

B) Give its termination ?

C) Which structure provides passage for it to enter into the abdomen ?



ANSWERS – 21

A) Inferior vena cava.

B) Terminates into the right atrium.

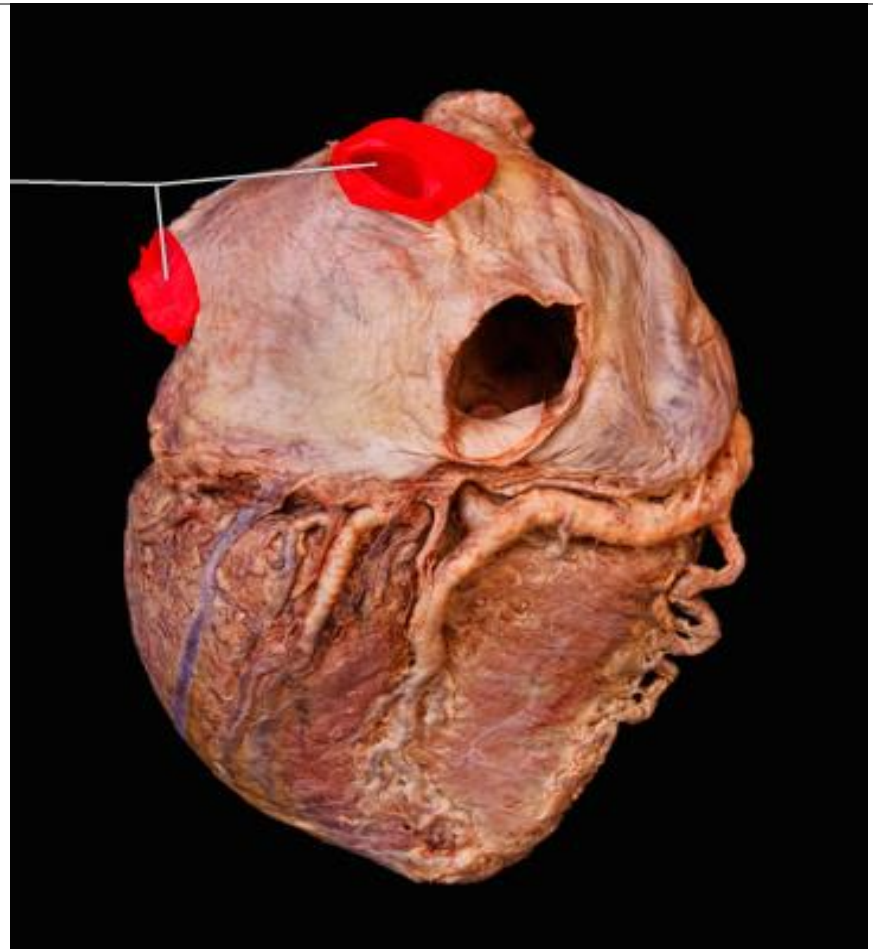
C) Diaphragm through vena caval foramen.

SPOTTER – 22

A) Identify the red colored structures ?

B) Give its formation ?

C) Give its termination ?



ANSWERS – 22

A) Pulmonary veins : *Right superior and inferior pulmonary veins.

*Left superior and inferior pulmonary veins.

B) Emerges from hilum of the lungs (2 from each lung).

C) Terminates into left atrium.

SPOTTER – 23

A) Identify the tied structure ?

B) Give its embryological significance ?

C) Which nerve hooks around it ?

D) Give its applied aspect ?

ANSWERS – 23

A) Ligamentum arteriosum.

B) Embryological significance : Remnant of ductus arteriosus, which acts as a channel connecting pulmonary trunk with arch of aorta in foetal life.

C) Left recurrent laryngeal nerve.

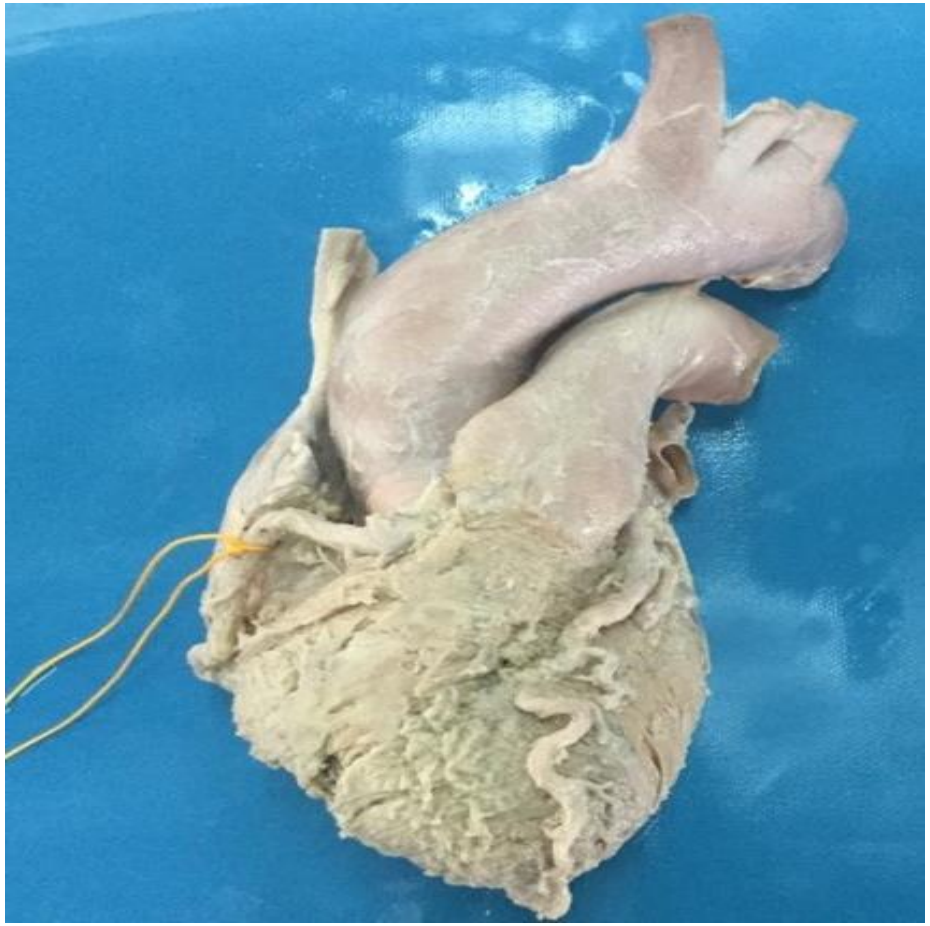
D) Applied aspect : Patent ductus arteriosus.

SPOTTER – 24

A) Identify the tied structure ?

B) What is it a branch of ?

C) Give its branches ?



ANSWERS – 24

A) Right coronary artery.

B) Branch from anterior aortic sinus of ascending aorta.

C) Branches : *Ventricular rami – Right conus artery, right marginal artery.

*Atrial rami – SA nodal artery.

*Posterior interventricular artery.

SPOTTER – 25

A) Identify the tied structure ?

B) What is it a branch of ?

C) Give its terminal branches ?

ANSWERS – 25

A) Left coronary artery.

B) Branch from left posterior aortic sinus of ascending aorta.

C) Terminal branches : *Circumflex artery.

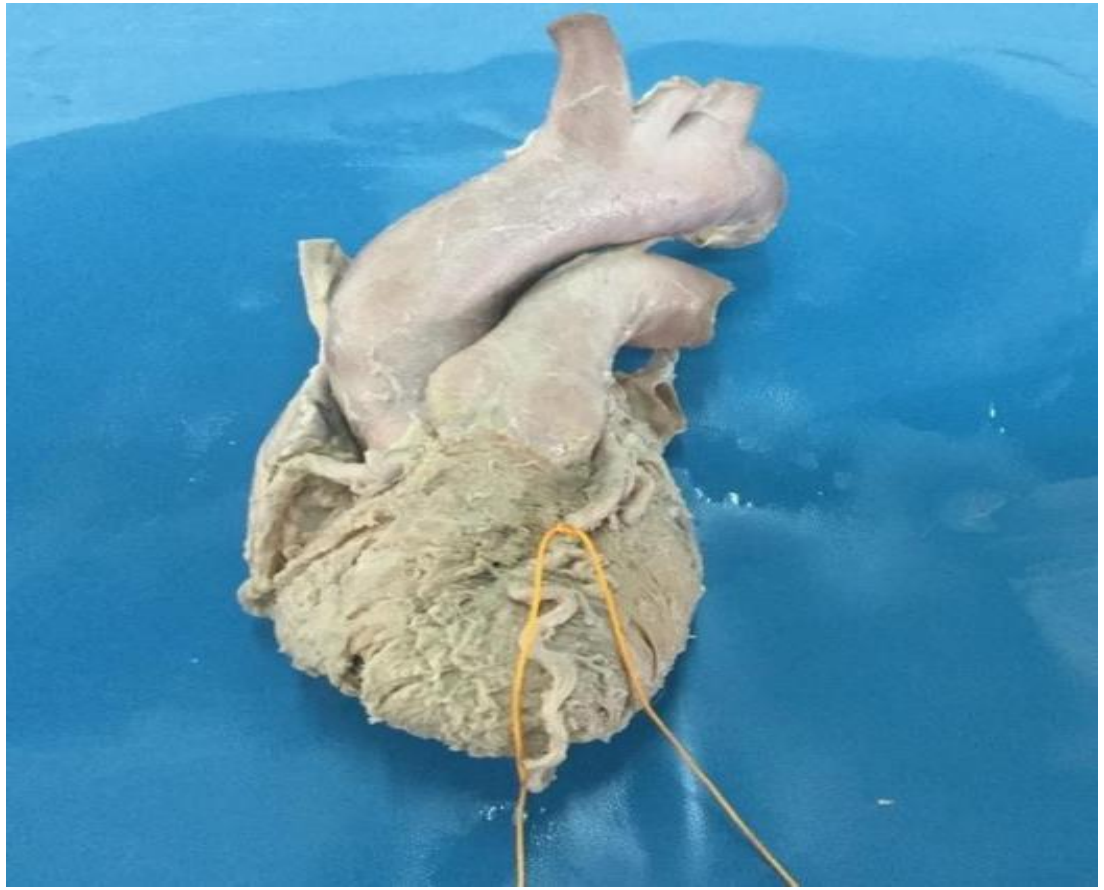
*Anterior interventricular artery (left anterior descending artery).

SPOTTER – 26

A) Identify the tied structure ?

B) What is it a branch of ?

C) Give its branches ?



ANSWERS – 26

A) Anterior interventricular artery (left anterior descending artery).

B) Branch from left coronary artery.

C) Branches : *Anterior ventricular rami – Diagonal artery.

*Septal rami.

SPOTTER – 27

A) Identify the tied structure ?

B) What is it a branch of ?

C) Give its branches ?

ANSWERS – 27

A) Posterior interventricular artery.

B) Branch from right coronary artery.

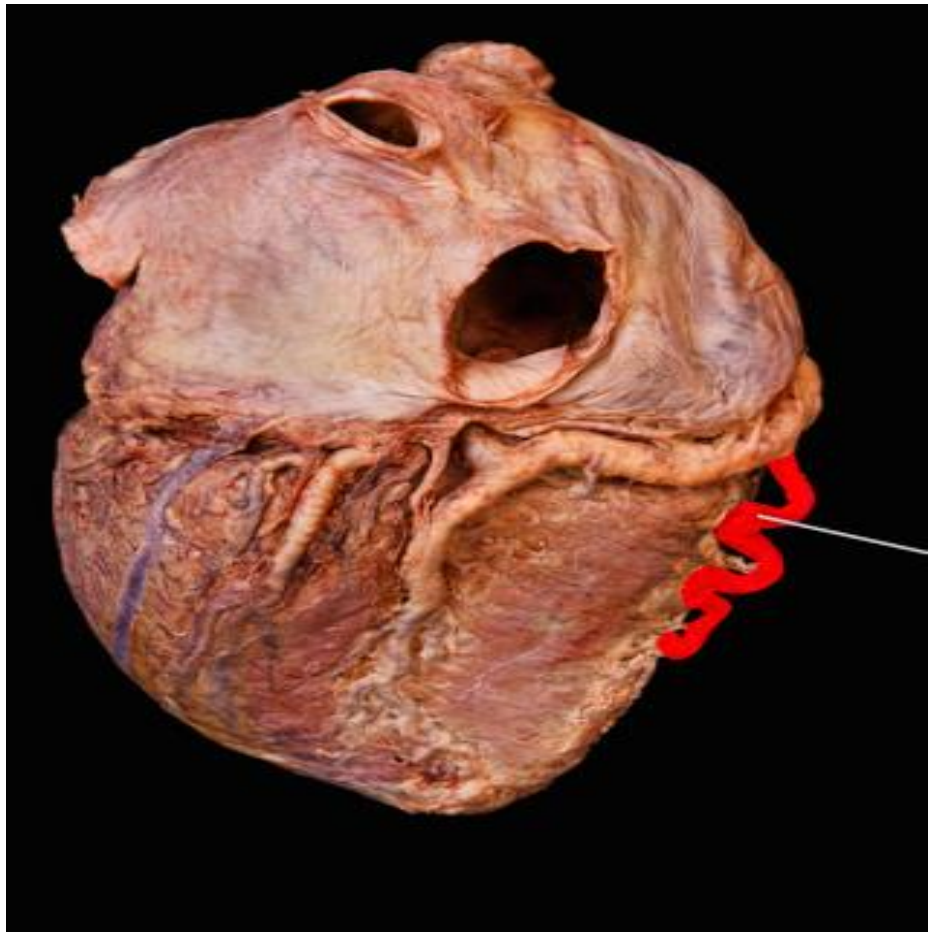
C) Branches : *Ventricular branch.

*Septal branch.

SPOTTER – 28

A) Identify the red colored structure ?

B) What is it a branch of ?



ANSWERS – 28

A) Right marginal artery.

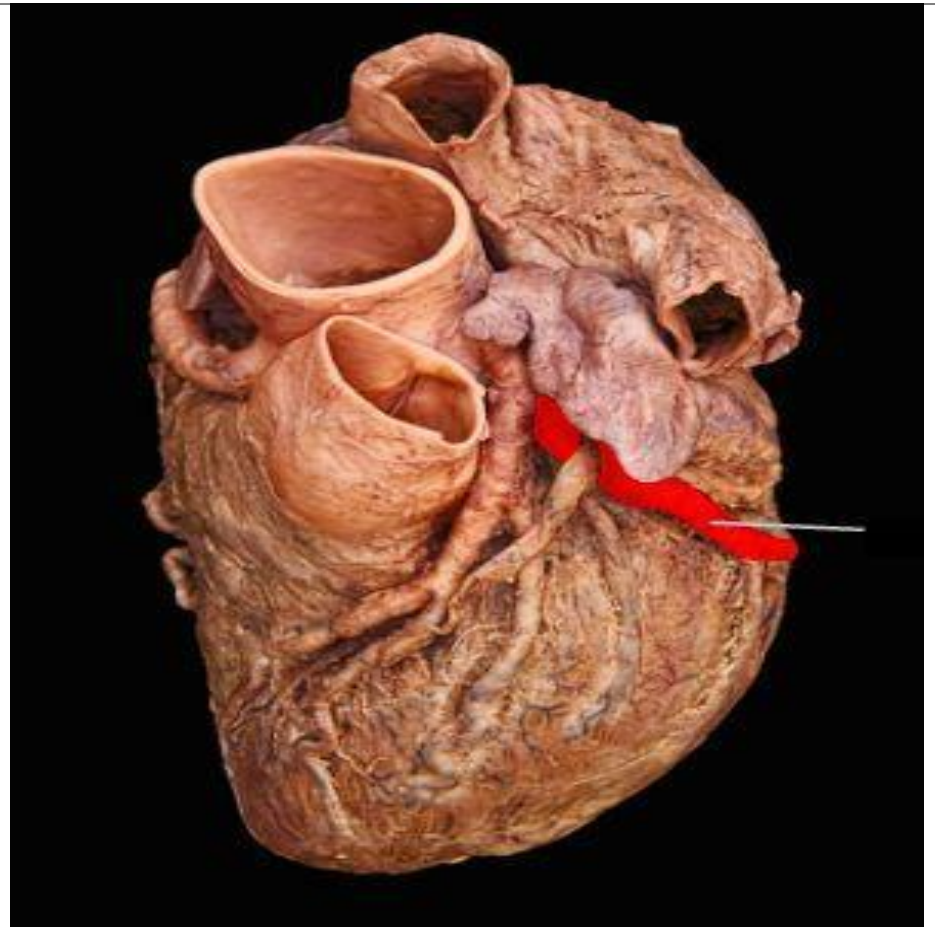
B) Branch from right coronary artery.

SPOTTER – 29

A) Identify the red colored structure ?

B) What is it a branch of ?

C) Give its branches ?



ANSWERS – 29

A) Circumflex artery.

B) Branch from left coronary artery.

C) Branches : *Left marginal artery.

*Atrial branches.

*Ventricular branches.

*SA nodal branches.

*AV nodal branches.

*Kugel’s artery.

*Posterior interventricular branches.

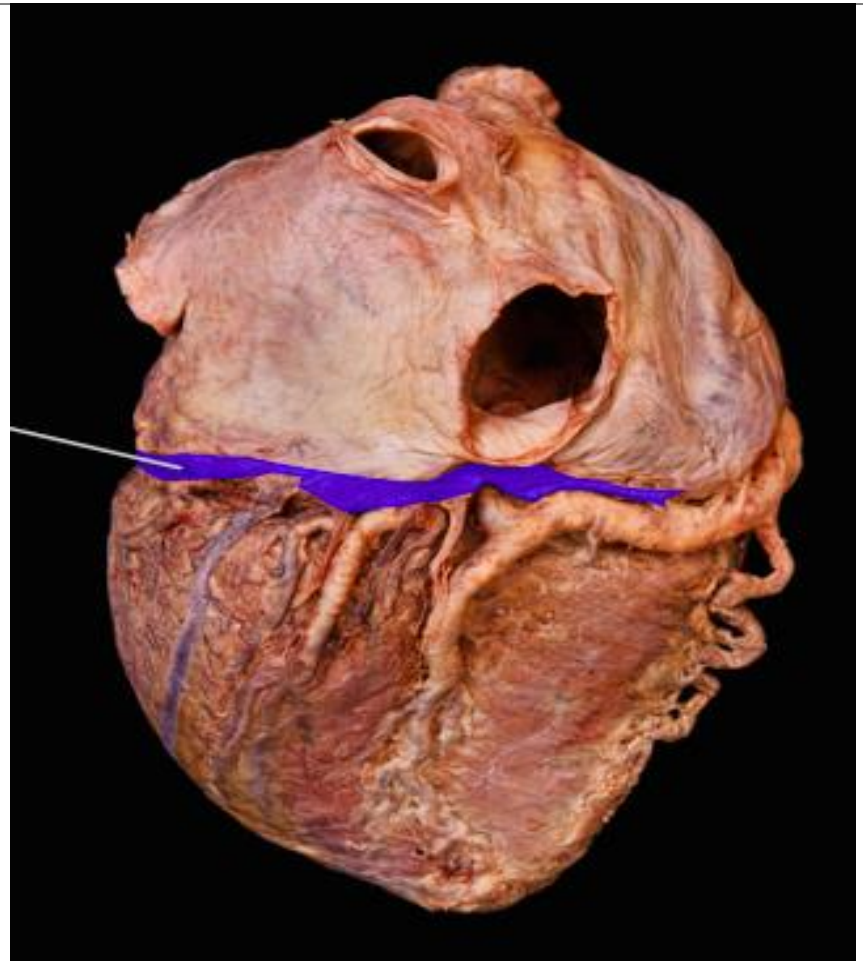
SPOTTER – 30

A) Identify the blue colored structure ?

B) Name its tributaries ?

C) Give its termination ?

D) Give its development ?



ANSWERS – 30

A) Coronary sinus.

B) Tributaries : *Great cardiac vein.

*Middle cardiac vein.

*Small cardiac vein.

*Posterior vein of left ventricle.

*Oblique vein of left atrium (vein of Marshall).

*Right marginal vein.

*Left marginal vein.

C) Terminates into posterior wall of right atrium

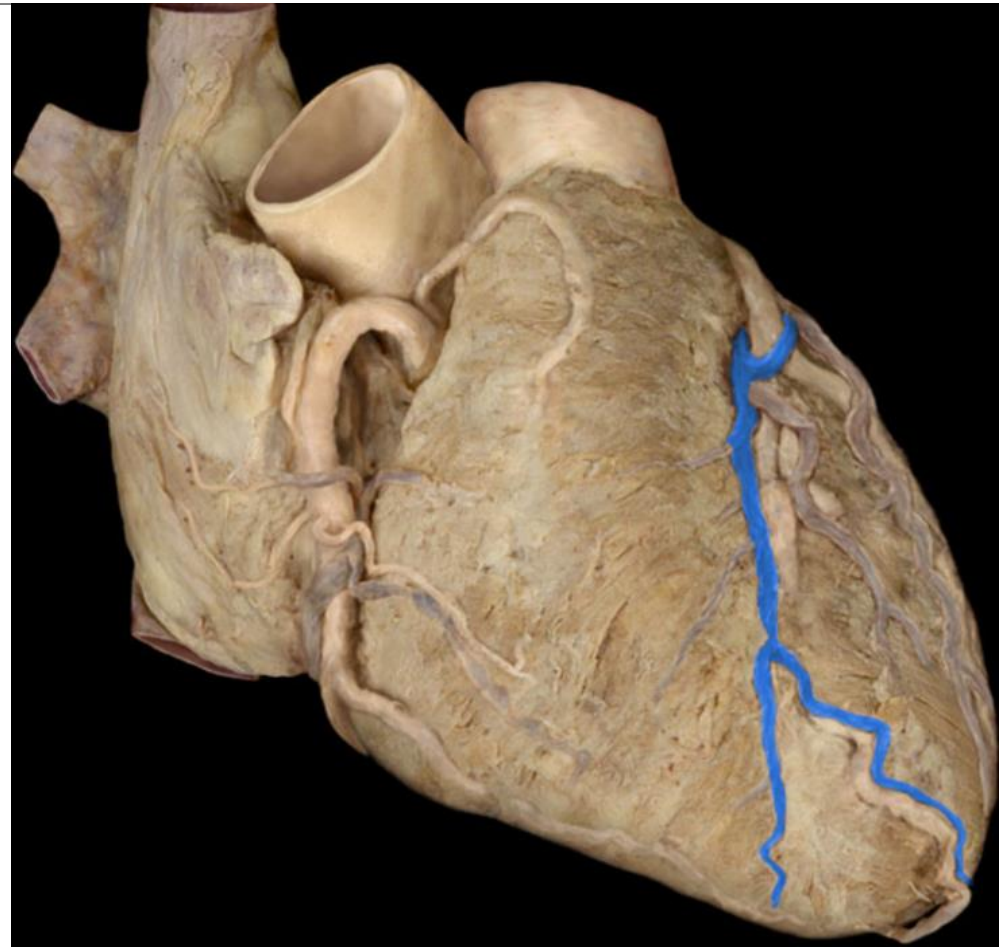
D) Develops from the left horn of sinus venosus and a part of the left common cardinal vein.

SPOTTER – 31

A) Identify the blue colored structure ?

B) Which arteries are accompanied by it ?

C) Give its location ?



ANSWERS – 31

A) Great cardiac vein.

B) Accompanies anterior interventricular artery and circumflex artery.

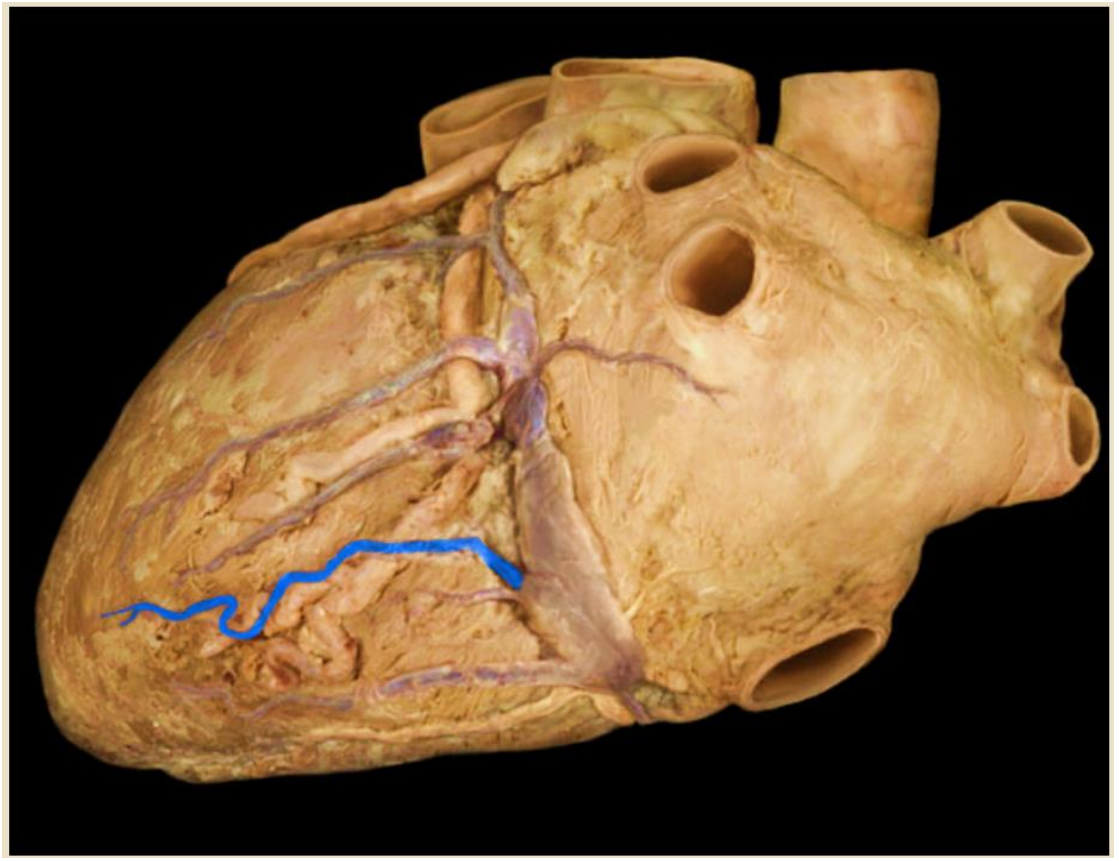
C) Runs along the anterior interventricular groove.

SPOTTER – 32

A) Identify the blue colored structure ?

B) Which artery is accompanied by it ?

C) Give its location ?



ANSWERS – 32

A) Middle cardiac vein.

B) Accompanies posterior interventricular artery.

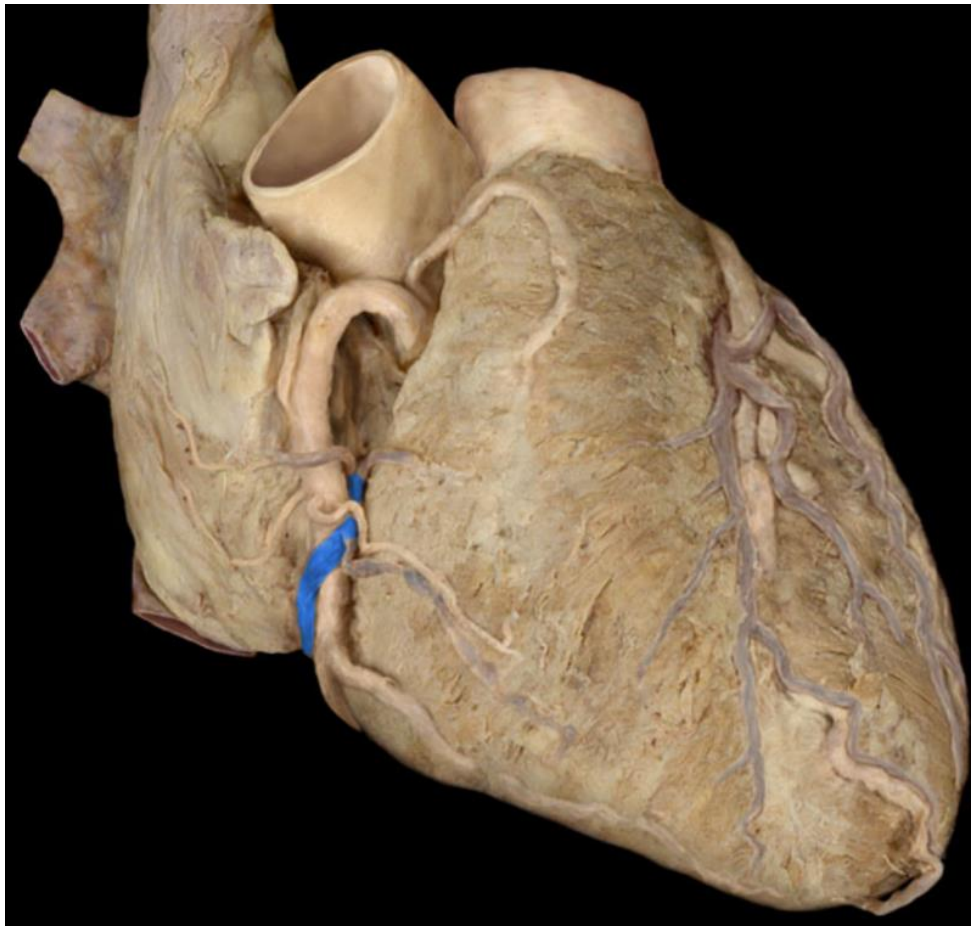
C) Runs along the posterior interventricular groove.

SPOTTER – 33

A) Identify the blue colored structure ?

B) Which artery is accompanied by it ?

C) Give its location ?



ANSWERS – 33

A) Small cardiac vein.

B) Accompanies right ventricular artery.

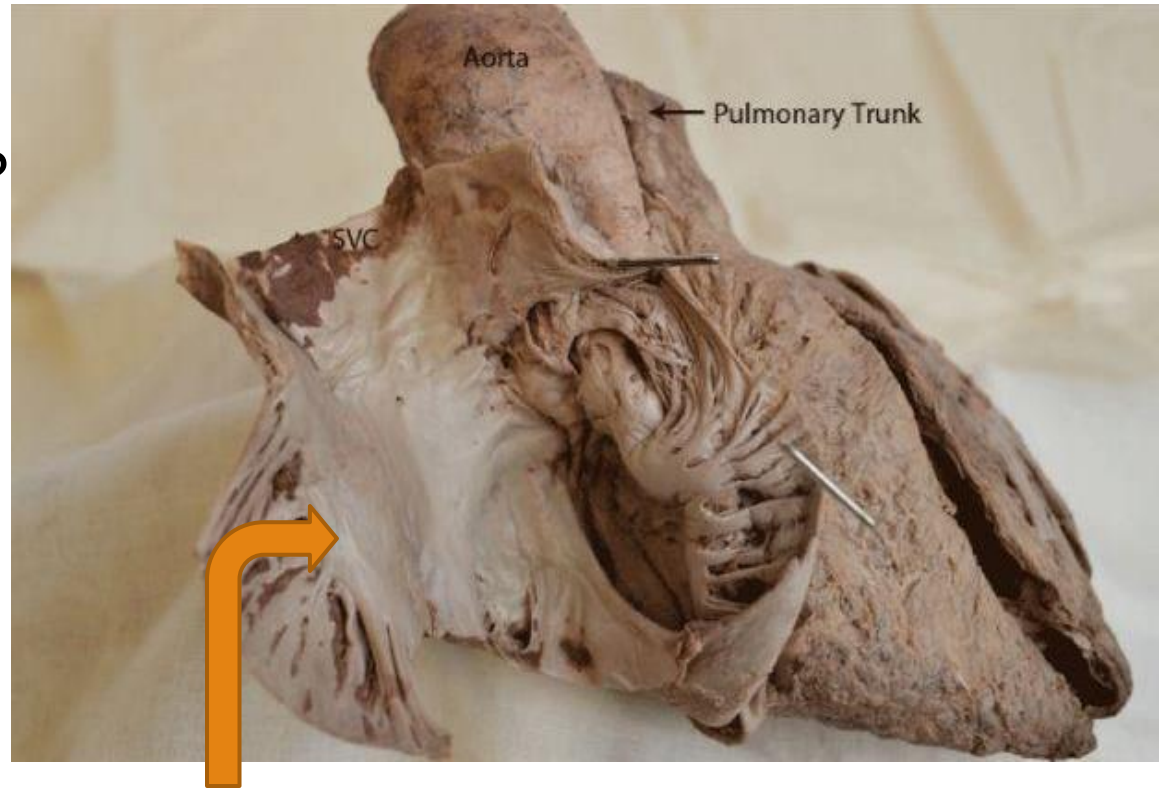
C) Runs along the right posterior coronary sulcus.

SPOTTER – 34

A) Identify the structure marked by the arrow ?

B) What does it represent ?

C) Give its physiological importance ?



ANSWERS – 34

A) Crista terminalis.

B) Represents the interior demarcation of sinus venarum (smooth posterior) and atrium proper (rough anterior) parts of right atrium.

C) SA node (Sinuatrial node) is present within the upper part of crista terminalis.

SPOTTER – 35

A) Identify the pinned structure ?

B) Give its development ?

C) Give its embryological significance ?

ANSWERS – 35

A) Fossa ovalis.

B) Development : Septum primum.

C) Embryological significance : Represents the site of foramen ovale in the foetus.

SPOTTER – 36

A) Identify the pinned structure ?

B) Give its development ?

ANSWERS – 36

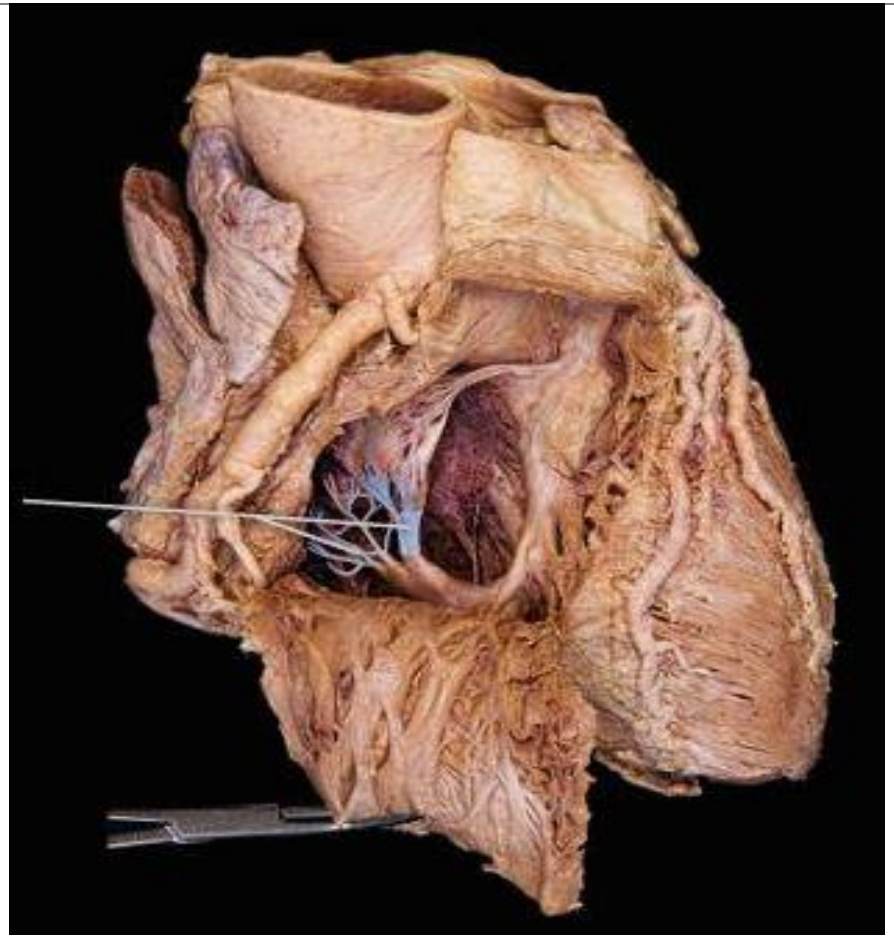
A) Limbus fossa ovalis.

B) Development : Septum secundum.

SPOTTER – 37

A) Identify the colored structure ?

B) Give its significance ?



ANSWERS – 37

A) Chordae tendineae.

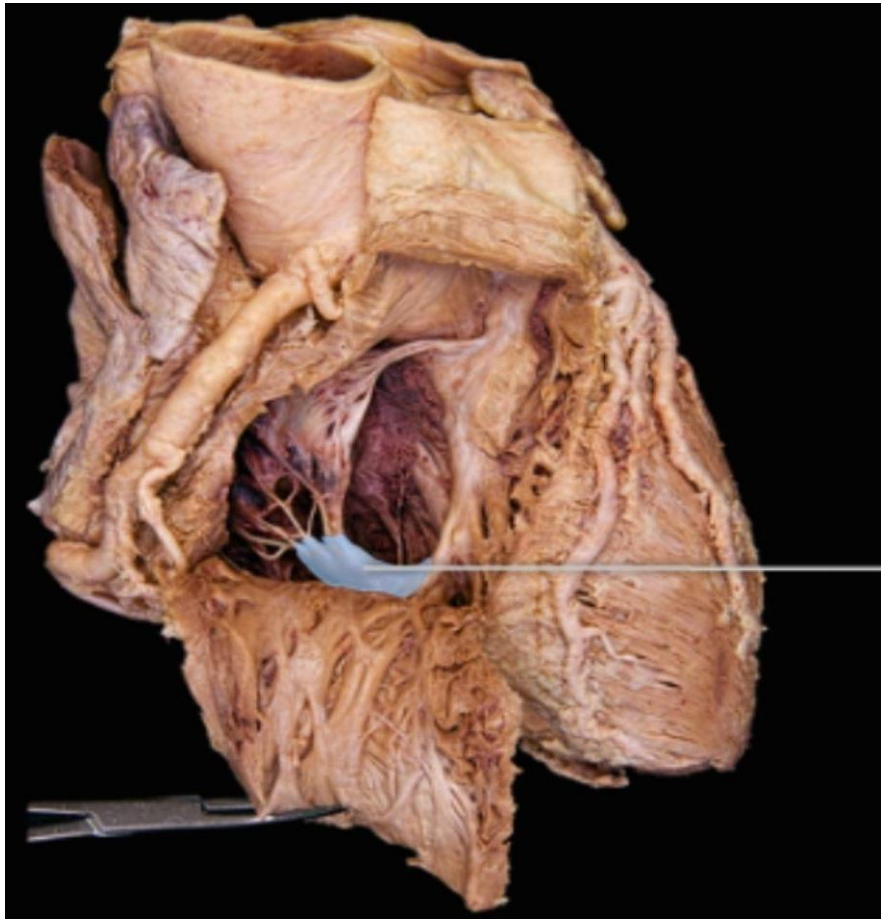
B) Significance : *Connects papillary muscles to the valve leaflets.

*Regulates closure of the mitral (bicuspid) and tricuspid valves.

SPOTTER – 38

A) Identify the colored structure ?

B) Give its significance ?



ANSWERS – 38

A) Papillary muscles.

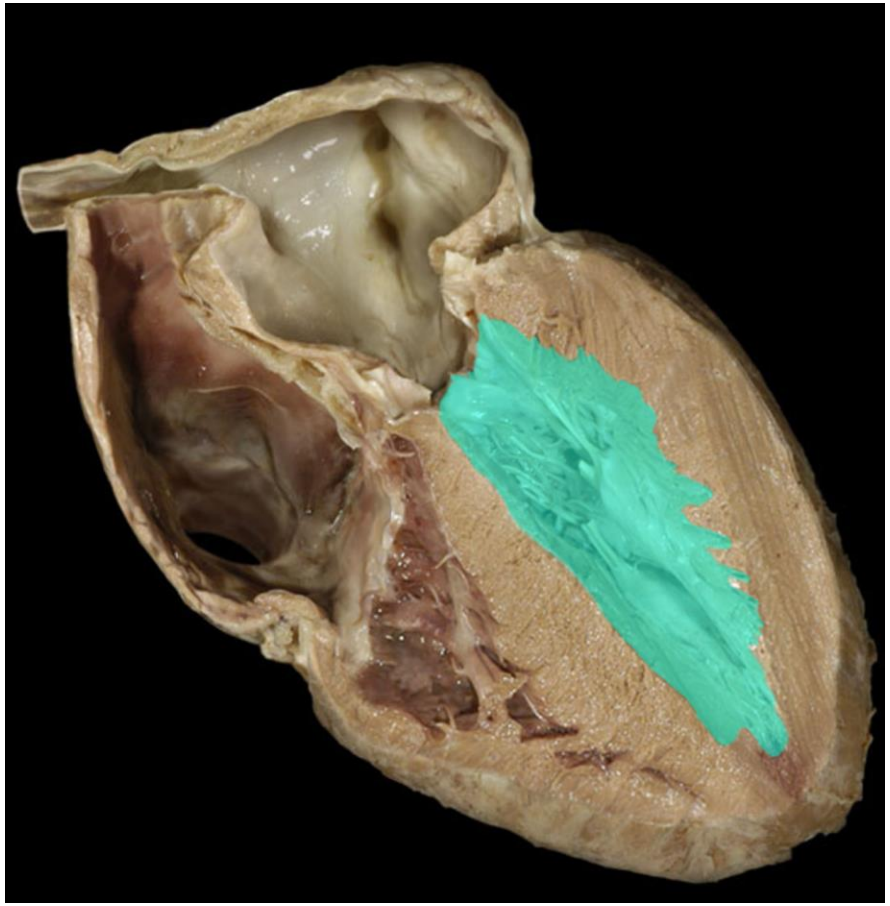
B) Significance : *Attached to the valve leaflets.

*Regulates closure of the mitral (bicuspid) and tricuspid valves during systole.

SPOTTER – 39

A) Identify the colored structure ?

B) Give its development ?



ANSWERS – 39

A) Interior of left ventricle.

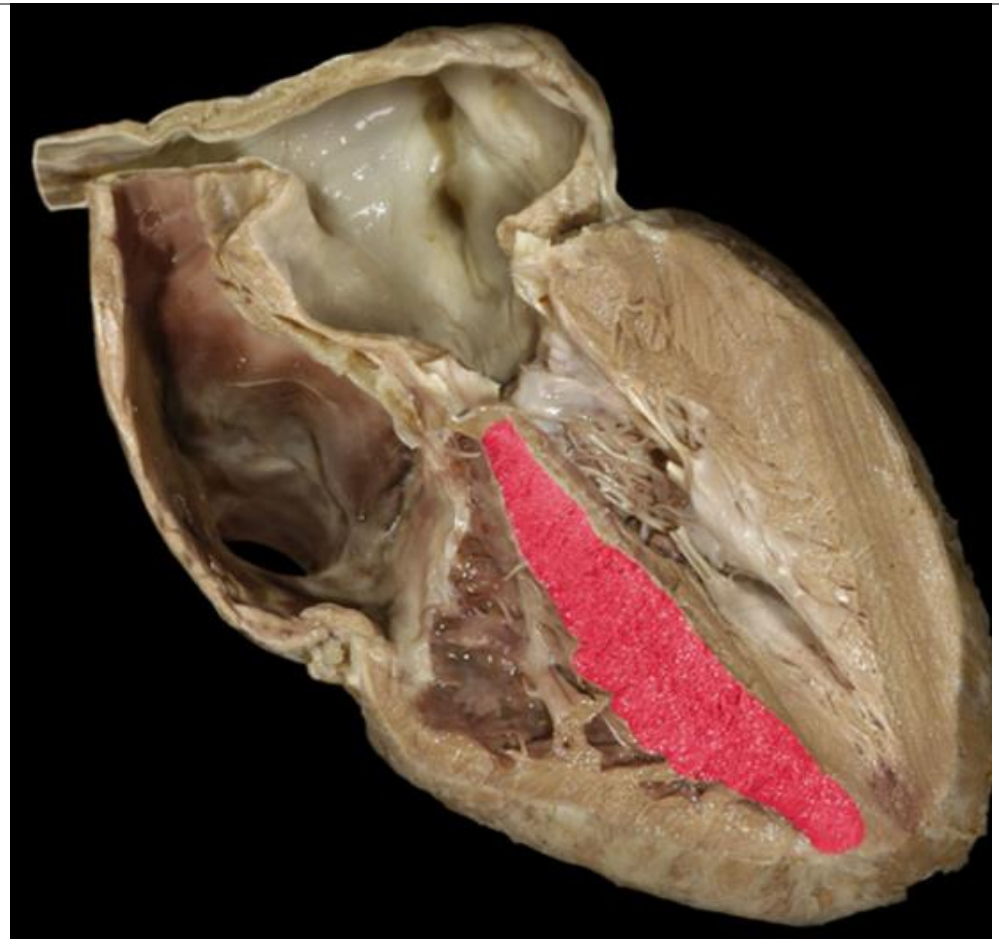
B) Development : *Rough inflowing part – Left half of primitive ventricle.

*Smooth outflowing part – Left half of bulbus cordis.

SPOTTER – 40

A) Identify the colored structure ?

B) Give its development ?



ANSWERS – 40

A) Interventricular septum.

B) Development : *Ventricular septum proper (muscular part).

*Proximal bulbar septum.

*Septum intermedium (membranous part).

WISHING YOU GOOD HEALTH
HAVE A GREAT DAY