

STRUCTURE AND ORIGIN

Structure	Origin	Notes
Smooth wall of left and right atria	Sinus venosus	as well as the veins Sinus venarum in the right atrium
Rough wall of left and right atria	Primitive atrium	
Rough parts of the ventricles	Primitive ventricles	inflow area
Smooth parts of the ventricles	Bulbus cordis	infundibulum / conus arteriosus in the rt. ventricle aortic vestibule in the lt. ventricle
Aorta, pulmonary trunk, semilunar valves	Truncus arteriosus	recent evidence shows that neural crest cells contribute to the formation of neural crest cells spiral aorticopulmonary septum creates two channels [aorta and pulmonary trunk]
AV valves	Proliferating mesenchymal tissue derived from the endocardial cushions	when the blood flow hollows the surface, the valves are formed
Chordae tendineae	Remnants of muscular cords that degenerated and got replaced by dense C.T	attach the valves to the ventricular wall
Ventral and dorsal endocardial [AV] cushions	Migrating neural crest cells	they fuse and form septum intermedium that divides the AV canal to right and left AV canals
Muscular part of IV septum	Ventricular septum	
Membranous part of IV septum	downward extension from the right margin of the AV endocardial [intermedium] septum	
Oblique vein of left atrium and coronary sinus	remnants of the left sinus horn	the left horn loses its importance when the left common cardinal vein gets obliterated at week 10
Crista terminalis	the cranial part of the right venous valve of the sinuatrial orifice	
The valve of IVC and the valve of the coronary sinus	the inferior part of the right venous valve	
Dorsal aortae	blood islands [cardiogenic cells] that appear bilaterally, parallel and close to the midline of the embryonic shield	
Hepato-cardiac portion of IVC	Right hepato-cardiac channel [enlarged right vitelline vein]	
The portal vein	the anastomotic network around the developing duodenum	
Hepatic sinusoids	extensive vascular network from the vitelline veins	
Superior mesenteric vein	right vitelline vein	
Ligamentum venosum	remnants of ductus venosus	ductus venosus is a connection between the left umbilical vein and the hepatic portion of IVC to bypass the hepatic circulation after birth it's obliterated and forms ligamentum venosum
Ligamentum teres	remnants of the left umbilical veins	
Left brachiocephalic vein	develops from the anastomosis between the right and left anterior cardinal veins	
Superior Vena Cava	the right common cardinal veins and the proximal portion of the right anterior cardinal vein	
Ligamentum arteriosus	remnants of Ductus arteriosus	functional closure of ductus arteriosus occurs 10-15 hours after birth, while anatomical closure, and the formation of ligamentum arteriosus, happens by the 12th postnatal week

TIMELINE

- Mid week 3 -> the development of the CVS begins, two angioblastic cords [endothelial strands] appear in the cardiogenic mesoderm
- End of week 3 -> the two heart tubes fuse as the embryo folds laterally and form one heart tube
- Week 4 ->
 - a. At 23 days old [beginning of week 4] -> the heart tube appears segmented [sinus venosus, primitive atria, primitive ventricles, bulbus cordis & truncus arteriosus]
 - b. right sinus horn becomes larger than the left
 - c. at 25 days old -> the atria and sinus venosus are freed from the septum transversum at this point [form s-shaped heart]
- Week 10 -> the left common cardinal vein gets obliterated and the left sinus horn loses its importance