Embryological Anomalies Summary

-Bulbus cordis & Primitive ventricle looped towards the left Results in Dextrocardia

-Inter Atrial Septal Defect (ASD) – Females > Males

Left to Right shunts, non-cyanotic, compatible with life

Causes: 1) Over degeneration of septum prime

2) Under development of septum secondum (above fossa ovalis level)

3) Probe potency (tiny opening)

-Inter Ventricular Septal Defect (VSD) – Males > Females

Membranous part defect is because of dynamic blood flow in the fusion area between the 3 septa (muscular interventricular, proximal bulbar, Atrioventricular)

Eisenmenger complex, no cyanosis at first (left to right shunt), then **pulmonary hypertension**, increased pulmonary resistance, right ventricular hypertrophy, higher pressure in right ventricle, now it's a (right to left shunt) = **late cyanosis**.

-Fallot Teratology – most common cyanotic congenital heart defect by aorticopulmonary septum.

Caused by failure of neural crest cells to migrate into truncus arteriosus.

Associated with **VSD** (membranous part)

Aorticopulmonary septum fails to align properly (shifts anteriorly and to the right) → unfair septum with larger aorta (Overriding aorta) and smaller pulmonary → pulmonary stenosis → RVT hypertrophy (boot shape) → Right to left shunt **(cyanotic)(Remember, there's VSD)**

-Transposition of great vessels

Causd by non-spiral septum, whereas the pulmonary trunk arises from the morphologic left ventricle, and aorta from the morphologic right ventricle.

Comes with ASD/VSD

Aorta carries deoxygenated blood but that's helped by the other defects until surgery.

-Patent Ductus Arteriosus (PDA) – Females > Males

Caused by 1) Maternal rubella infection in early pregnancy

2) Preterm neonates

Results in deoxygenated blood going to aorta (leads to hypoxia)

-Coarctation of Aorta – Males > Females

Caused by unusual quantity of ductus arteriosus muscles in aortic wall which causes continuous contraction → narrow permanent fibrosis

*no. 3 sign
*Very weak femoral artery pulse
*Enlarged internal thoracic/subclavian/intercostal arteries
(enlarged intercostal arteries appear as notching of 3rd to 8th ribs on radiology)

-Left SVC:

Failure of right brachiocephalic to form

-Double SVC:

Persistence of left anterior cardinal vein

-Absence of IVC:

Failure of right subcardinal vein connection with liver

-Double IVC:

Persistence of, and connection between left sacrocardinal vein and left subcardinal vein

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Goodluck