



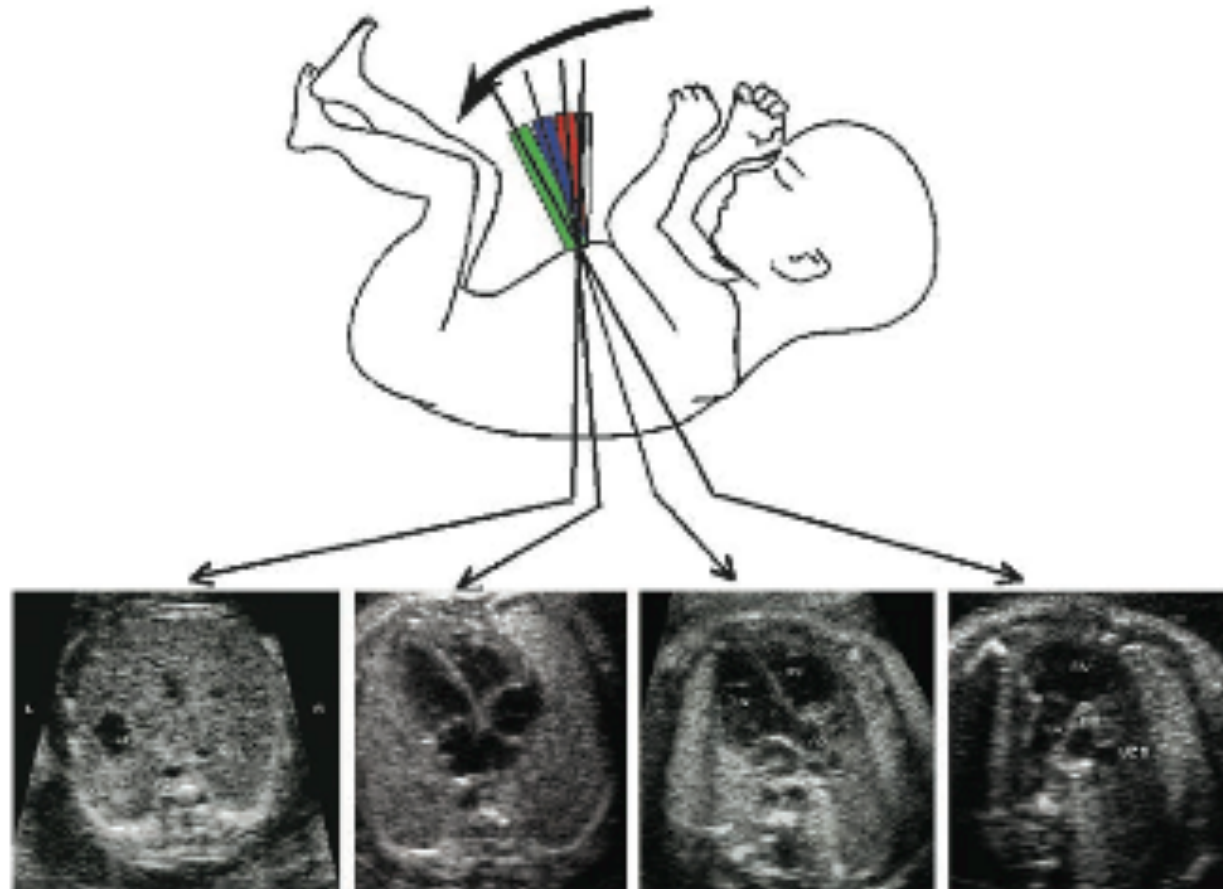
## Fetal Cardiac Scanning Aide Memoire Training Resource

For use by sonographers undertaking  
 $18^{+0}$  -  $20^{+6}$  week fetal anomaly scan in the  
Yorkshire and the Humber Region

# Indications for Referral for Fetal Echocardiography

| <u>Maternal Indications</u>  | <u>Fetal Indications</u>   | <u>Familial Indications</u>   |
|--|--|---|
| Maternal congenital heart disease  | Abnormal obstetric screening scan  | Sibling with congenital heart disease/ complete heart block               |
| Metabolic disorders<br>e.g.. Pre-existing diabetes and phenylketonuria                             | Fetal Arrhythmia- <u>not</u> Atrial Ectopics<br>Sustained Bradycardia < 100bpm<br>Sustained Tachycardia >180 bpm                         | Paternal congenital heart disease/<br>complete heart block                |
| Collagen/Autoimmune Disease with<br>Anti Ro/SSA ± Anti La/SSB antibodies                           | Increased Nuchal Translucency >99 <sup>th</sup><br>centile (>3.5mm) in first trimester<br>Increased Nuchal pad >6mm in mid-<br>trimester | Familial inherited disorders<br>especially those known to affect<br>heart |
| Exposure to cardiac teratogens<br>e.g. anticonvulsants, retinoic acid,<br>Lithium                  | Fetal hydrops/ Pericardial Effusion/<br>Pleural Effusion/ Polyhydramnios   |   |
| Viral and other infections<br>e.g. Rubella, CMV, Coxsackie,<br>Parvovirus and toxoplasmosis        | Extracardiac Abnormalities-<br>Omphalocele, Duodenal atresia,<br>Spina Bifida, VACTERL   |   |
| Exposure to prostaglandin<br>synthetase inhibitors e.g. Ibuprofen,<br>Salicylic acid, Indomethacin | Chromosomal Abnormality  |   |
|  | Monochorionic twins if suspicion of<br>Twin-twin transfusion   |   |

# Scanning Planes of the Fetal Heart



SITUS

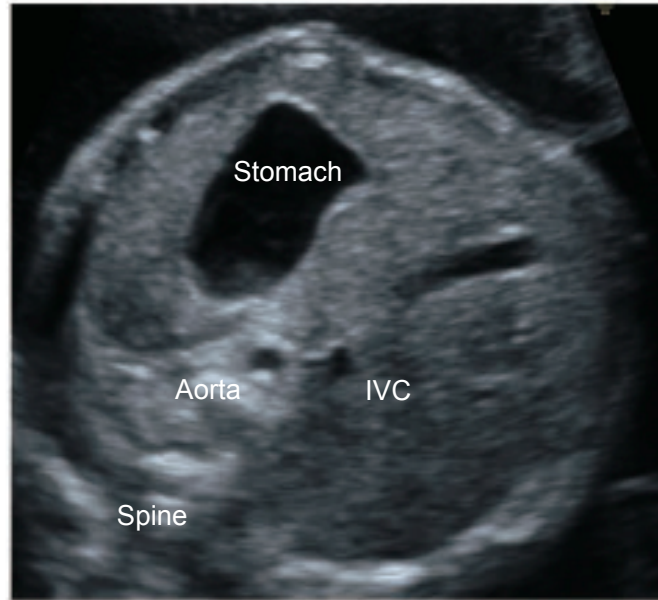
4 CH

LVOT

RVOT

# Situs/laterality

Left



Post'r

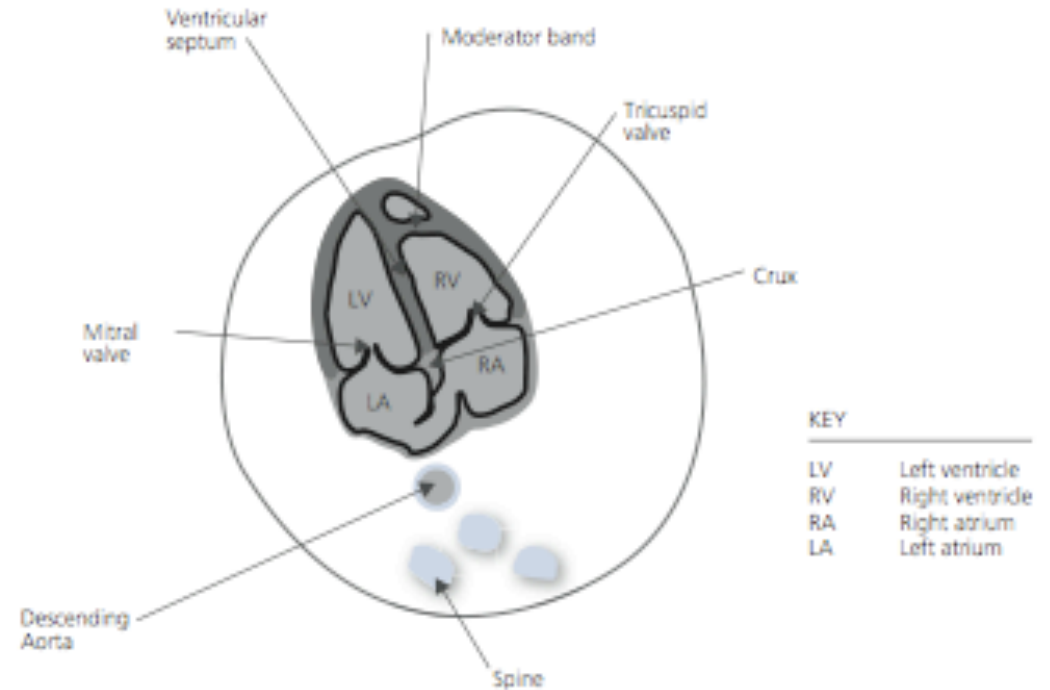
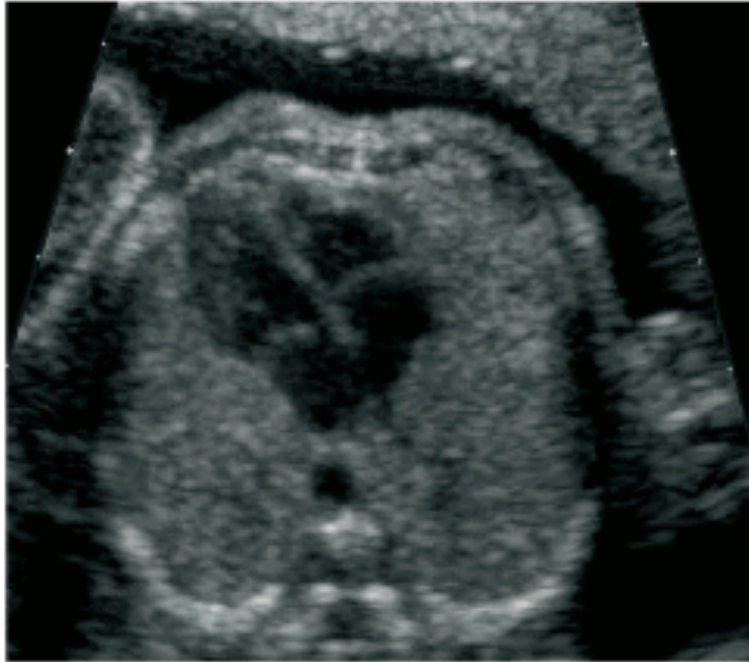
Right

Stomach on left

Aorta to left of spine

Inferior Vena Cava anterior and to right of Aorta

# Four chamber heart view



Apex to Left

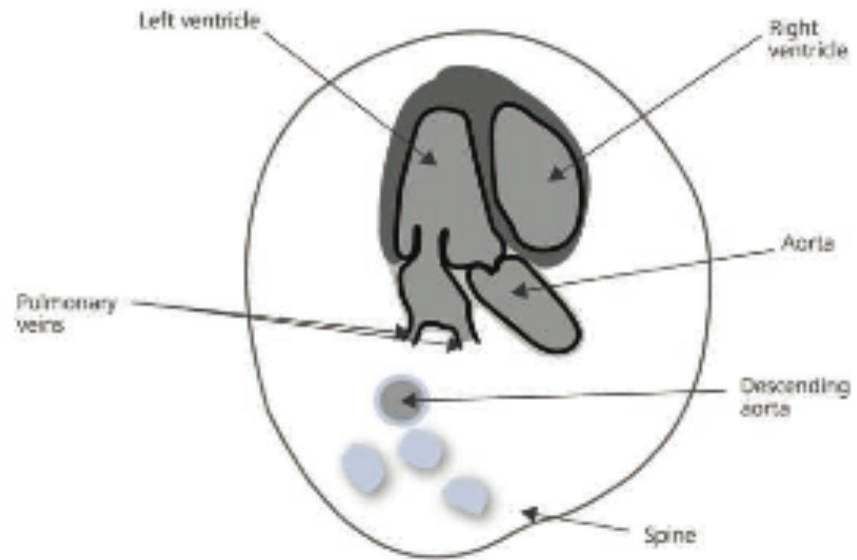
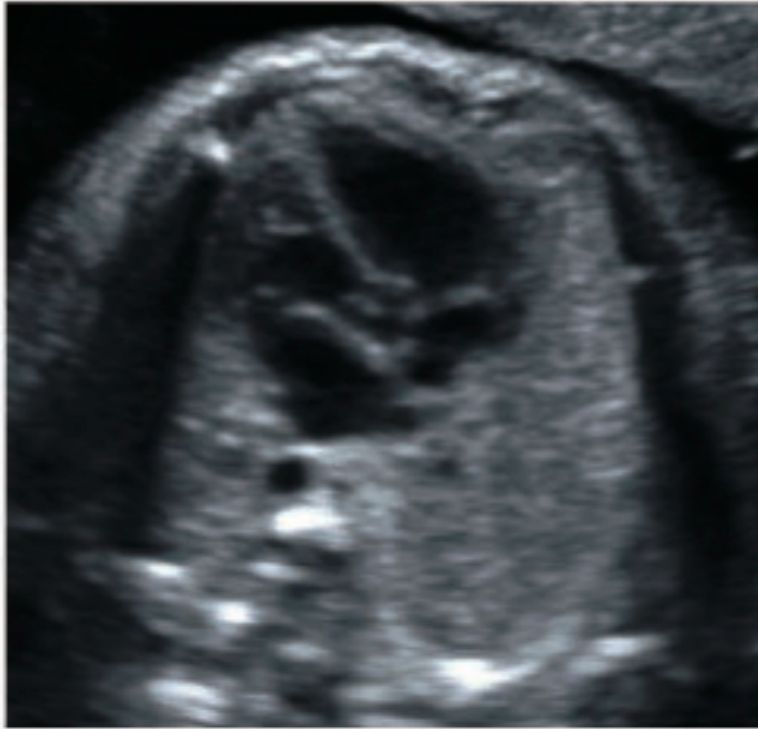
Right Ventricle anterior

Apical offset right AV valve  
Moderator band

Left Atrium posterior  
Pulmonary Veins x4

Descending Aorta behind Left  
Atrium

# Aorta/left ventricular outflow tract



Right Ventricle anterior

Left Ventricle outflow tract towards right shoulder

Descending Aorta behind Left Atrium

# Pulmonary/right ventricular outflow tract



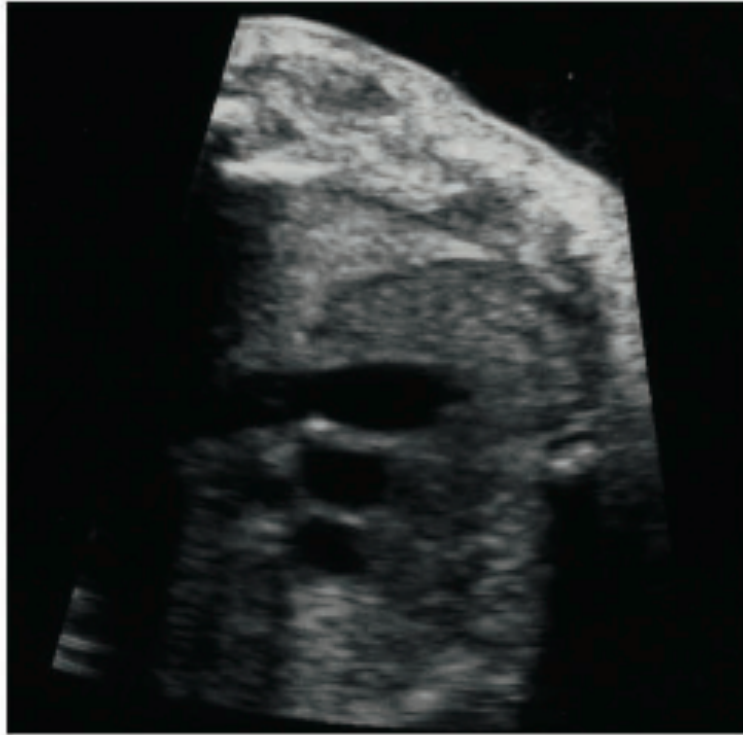
Right Ventricular Outflow Tract (RVOT) passes directly back towards spine

Pulmonary Artery branches “trouser leg”

Aorta to right of RVOT

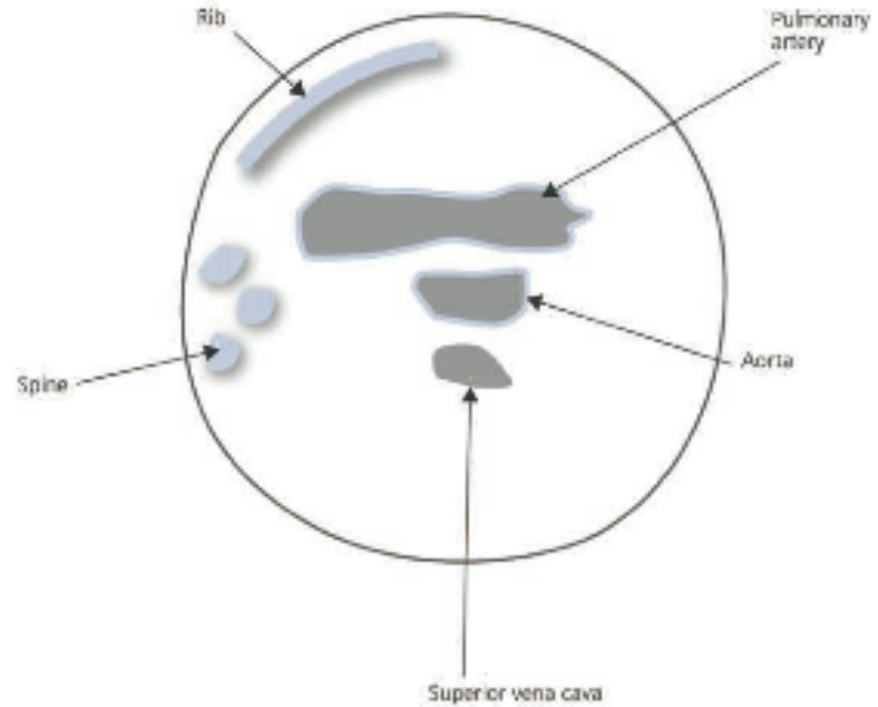
Superior Vena Cava to right of Aorta

# Three vessel view (3VV)



Duct / Pulmonary Artery  
from anterior RVOT directly  
backwards

Transverse aortic arch to  
right of duct

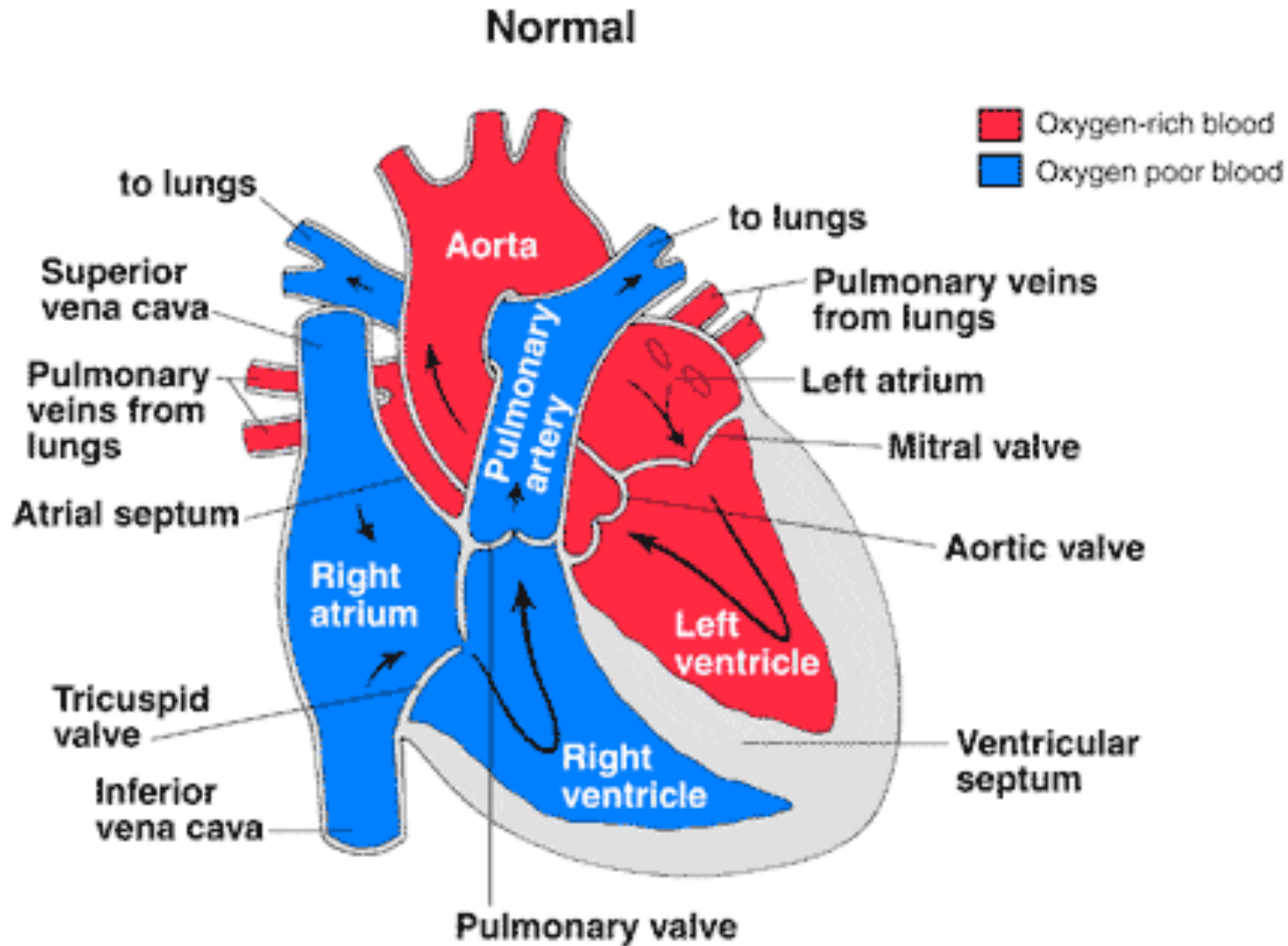


Superior Vena Cava  
to right of Transverse Aorta

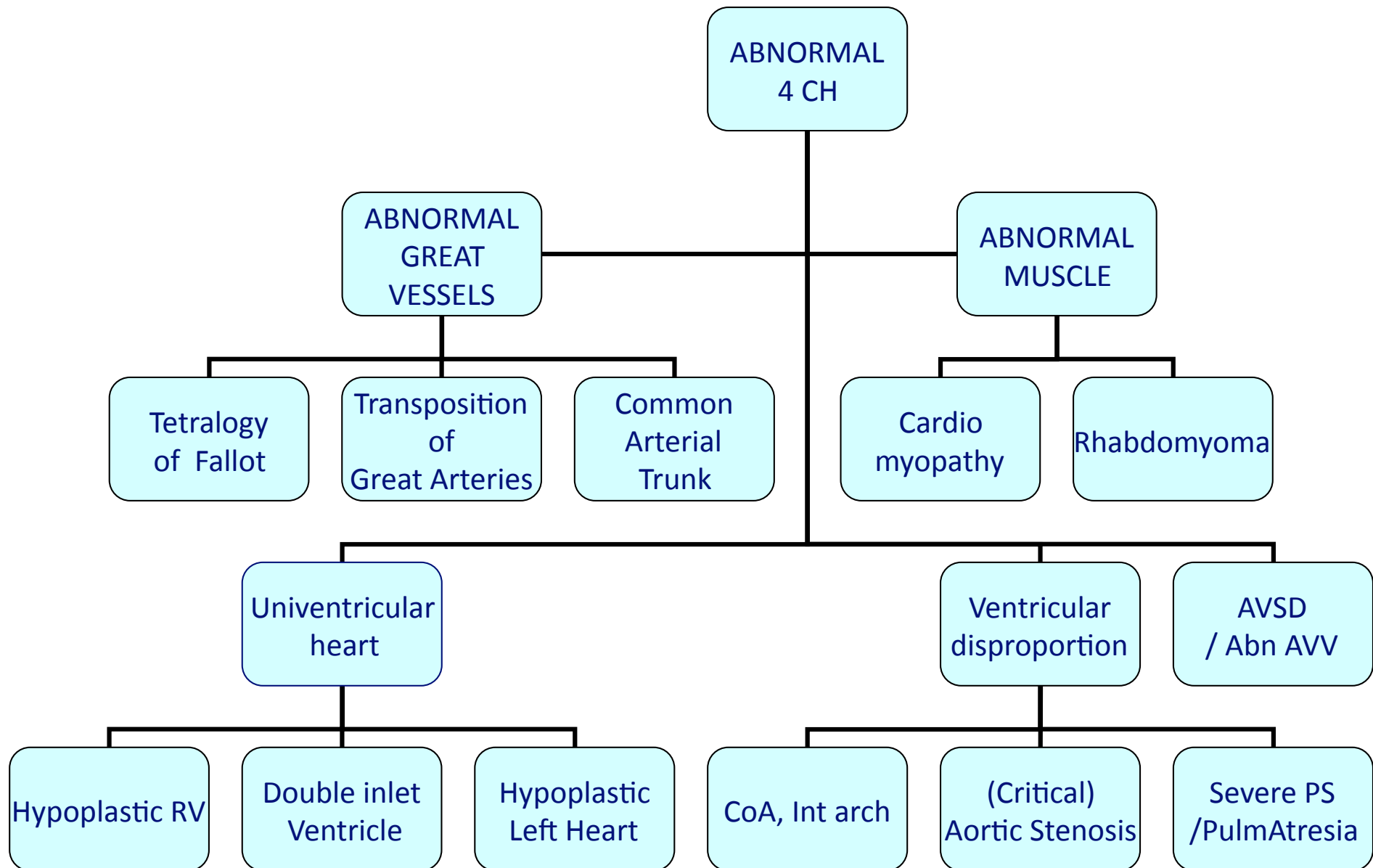
Aortic arch to left of trachea



# The Normal Heart



# Incredibly Simple Classification of CHD



# Cardiac Abnormalities and Associated ICD 10 Codes

|   |       |
|---|-------|
| Common arterial trunk<br>Persistent truncus arteriosus  | Q20.0 |
| Discordant ventriculoarterial connection<br>Dextrotransposition of aorta<br>Transposition of great vessels (complete) | Q20.3 |
| Tetralogy of Fallot   | Q21.3 |
| Ebstein's anomaly   | Q22.5 |
| Hypoplastic left heart syndrome   | Q23.4 |
| Coarctation of aorta  | Q25.1 |

(Source NHS Fetal Anomaly Screening Programme)

# Good Practice Points

Identify high risk groups

4 Chamber + Outlet views will identify  
80% abnormalities

Fetal arrhythmias uncommon-  
Atrial ectopic beats of minor significance

Don't have to make diagnosis of complex  
Congenital Heart Disease- "Say what you  
see"

Don't be afraid to ask for an opinion

Inform patient there may be a problem  
Don't just say "can't see the heart"



## **The Fetal Heart Service**

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