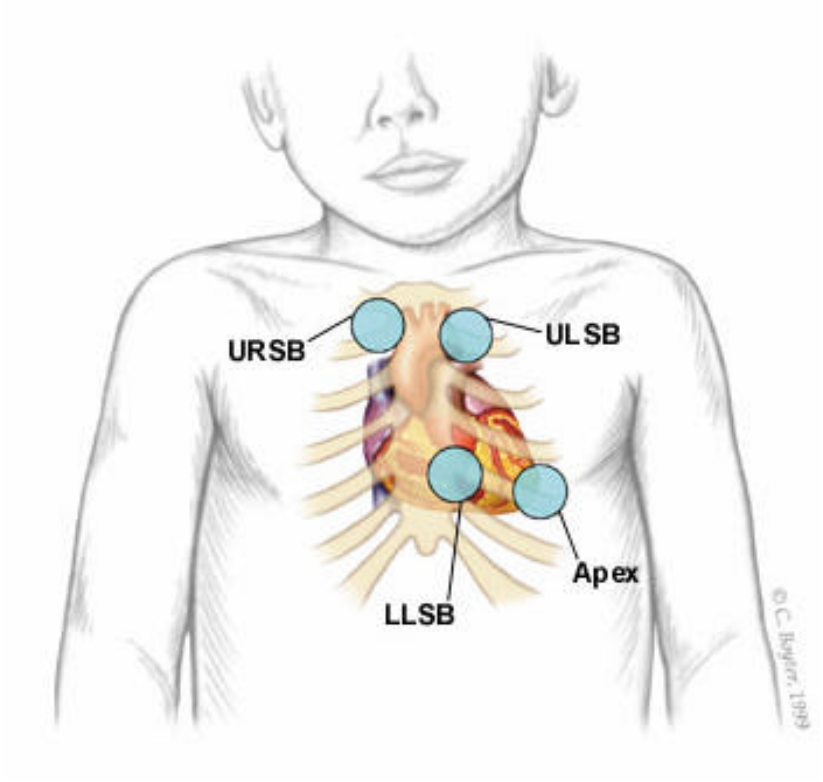
Congenital heart disease



Dr. Victor Grech
Consultant
Dept of Paediatrics

Classification

- Left to right shunting
- Right obstruction
- Left obstruction
- TGA

Left to right shunting

- VSD
- ASD
- PDA
- AVSD

Right sided obstruction

- PS
- Fallot

VIP: Duct dependent lesions

Pulmonary circulation inadequate and depends on blood flow from the systemic circulation to maintain life (aorta →PDA →PAs)

OR

Systemic circulation inadequate and depends on blood flow from the pulmonary circulation to maintain life (PAs →PDA →aorta)

OR

TGA - needed for mixing

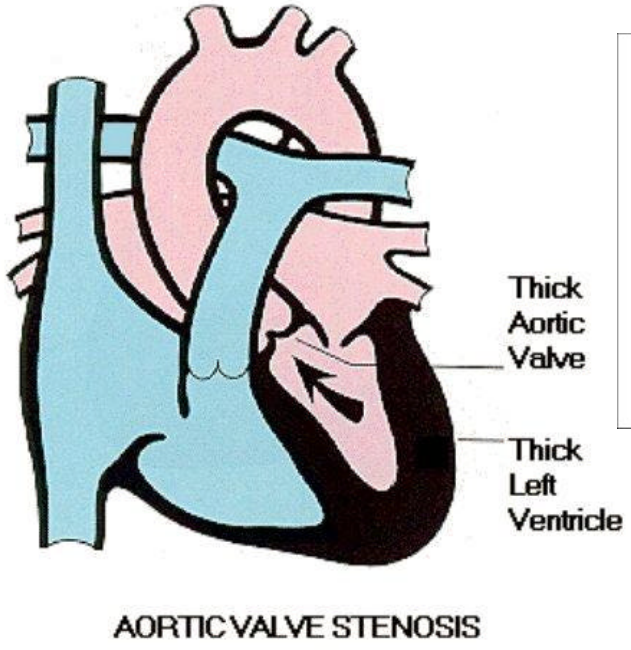
Therefore the above lesions have the potential for acute presentation with CV collapse

PDA can be kept open with prostaglandin infusion till intervention - catheter/surgery

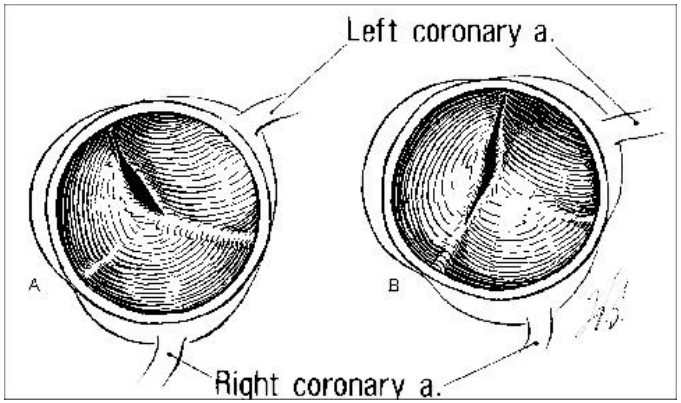
Left obstruction

Left sided obstruction - AS

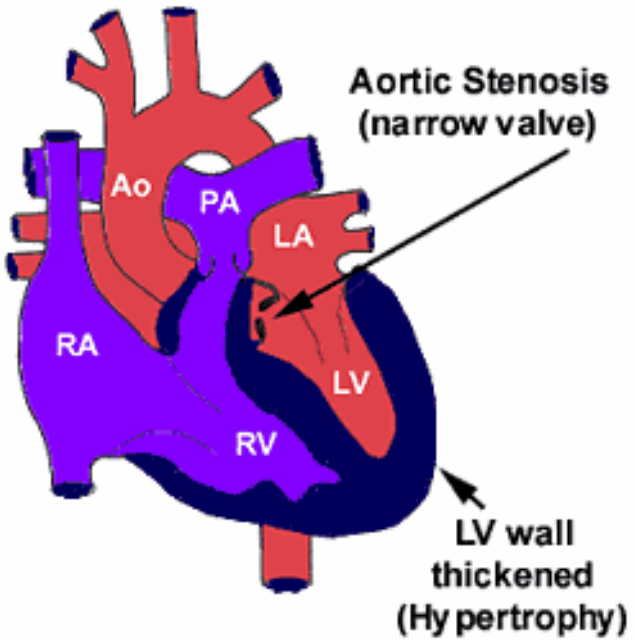
- Ao stenosis
  - Click
  - ESM URSE
  - Presentation varies depends on severity - from incidental finding to profound cyanosis from birth (may be duct dependent and may be ‘critical AS’)

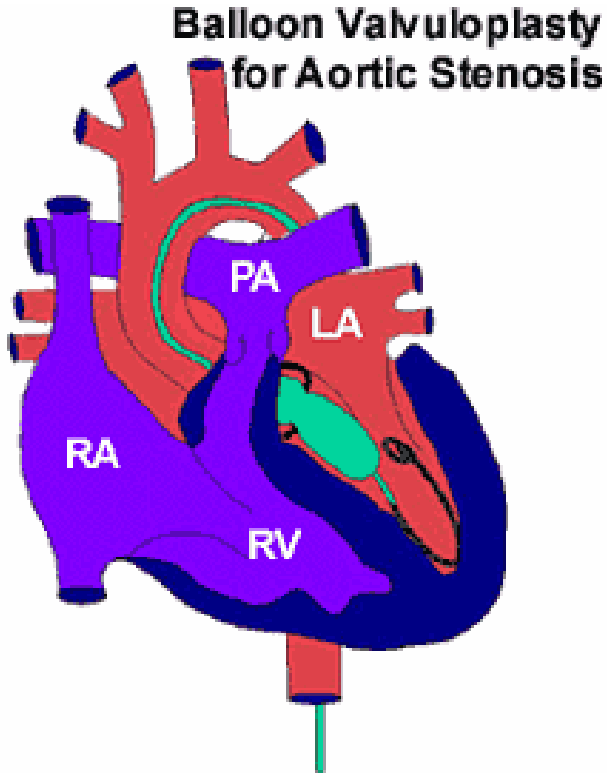


AORTIC VALVE STENOSIS

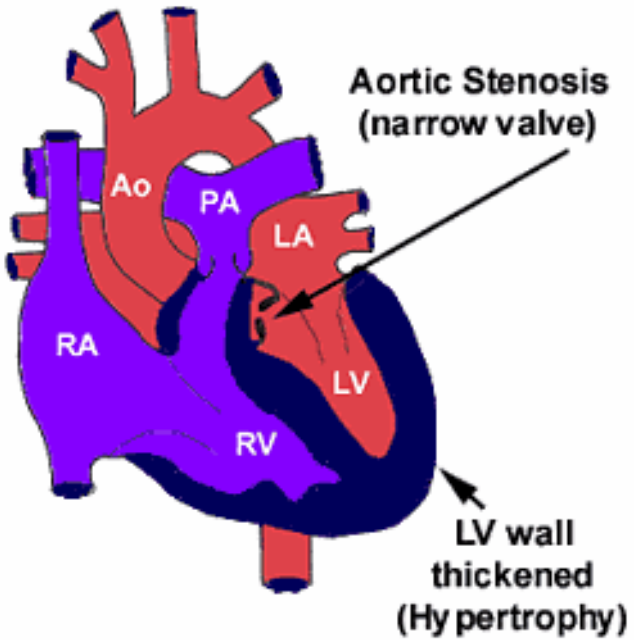


AS treatment
Transcath. balloon

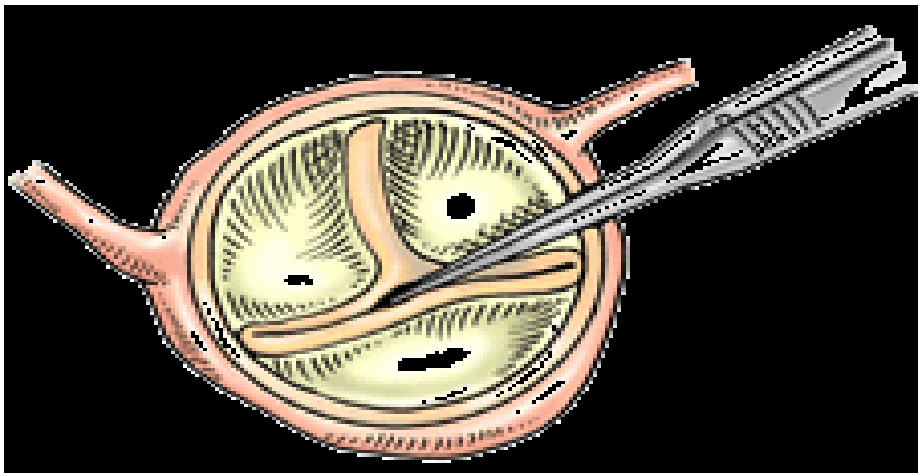




AS treatment
Valvuloplasty

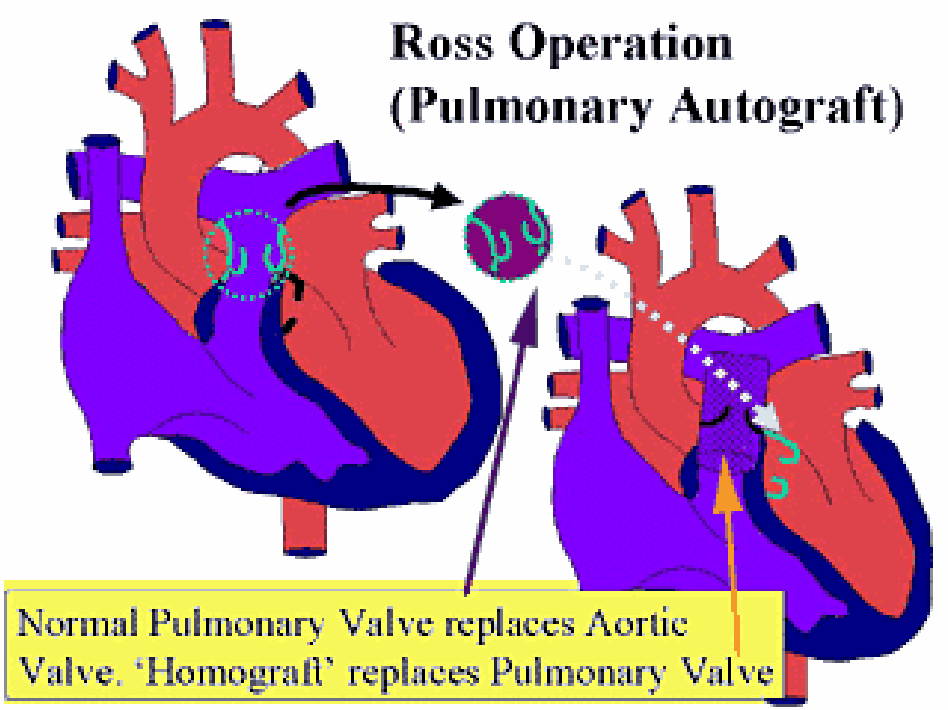


Valvotomy



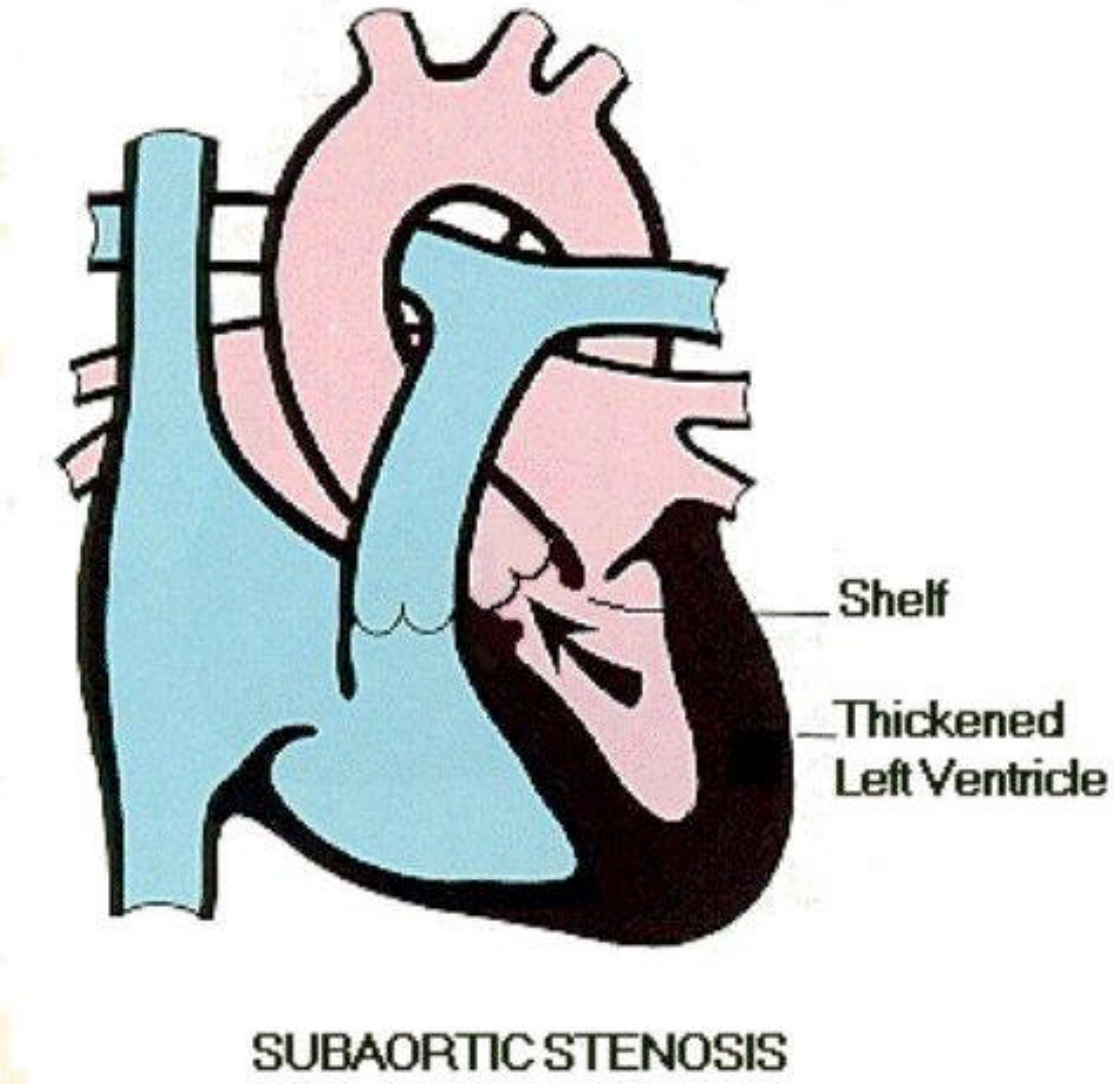
AS treatment

Ross



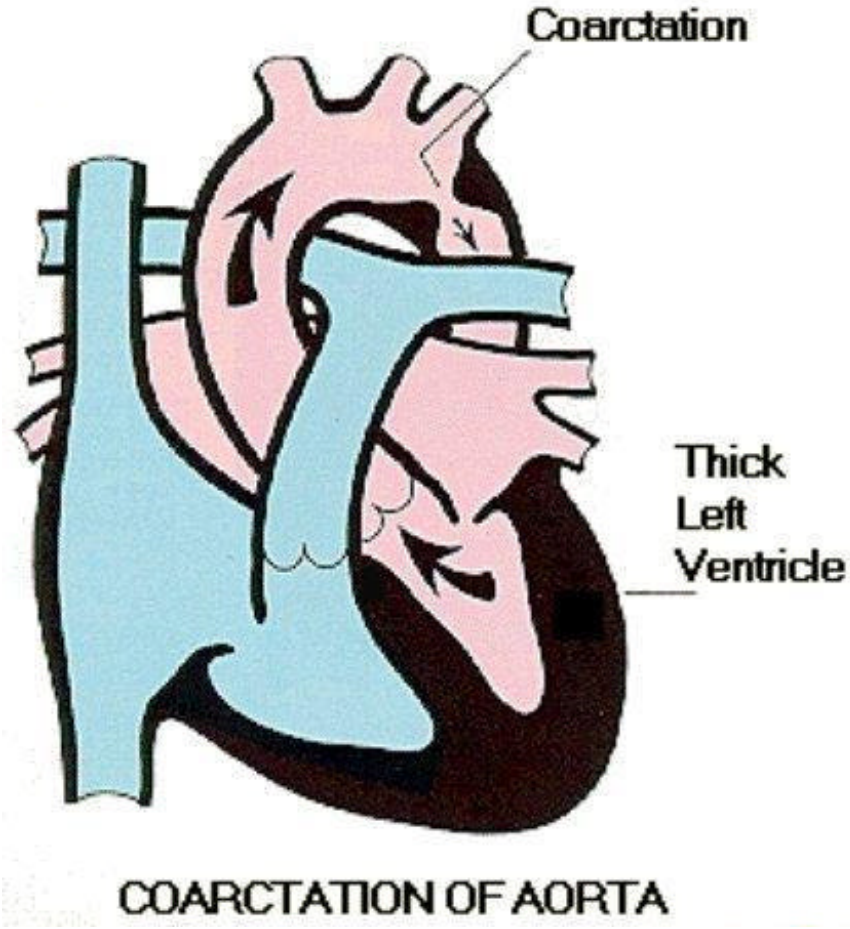
Left sided obstruction - SAS

- Subaortic stenosis (not CHD)
  - No click
  - ESM - LLSE and URSE
  - Presentation later in
  - Childhood/adult
  - Surgical repair
  - ? recurrence



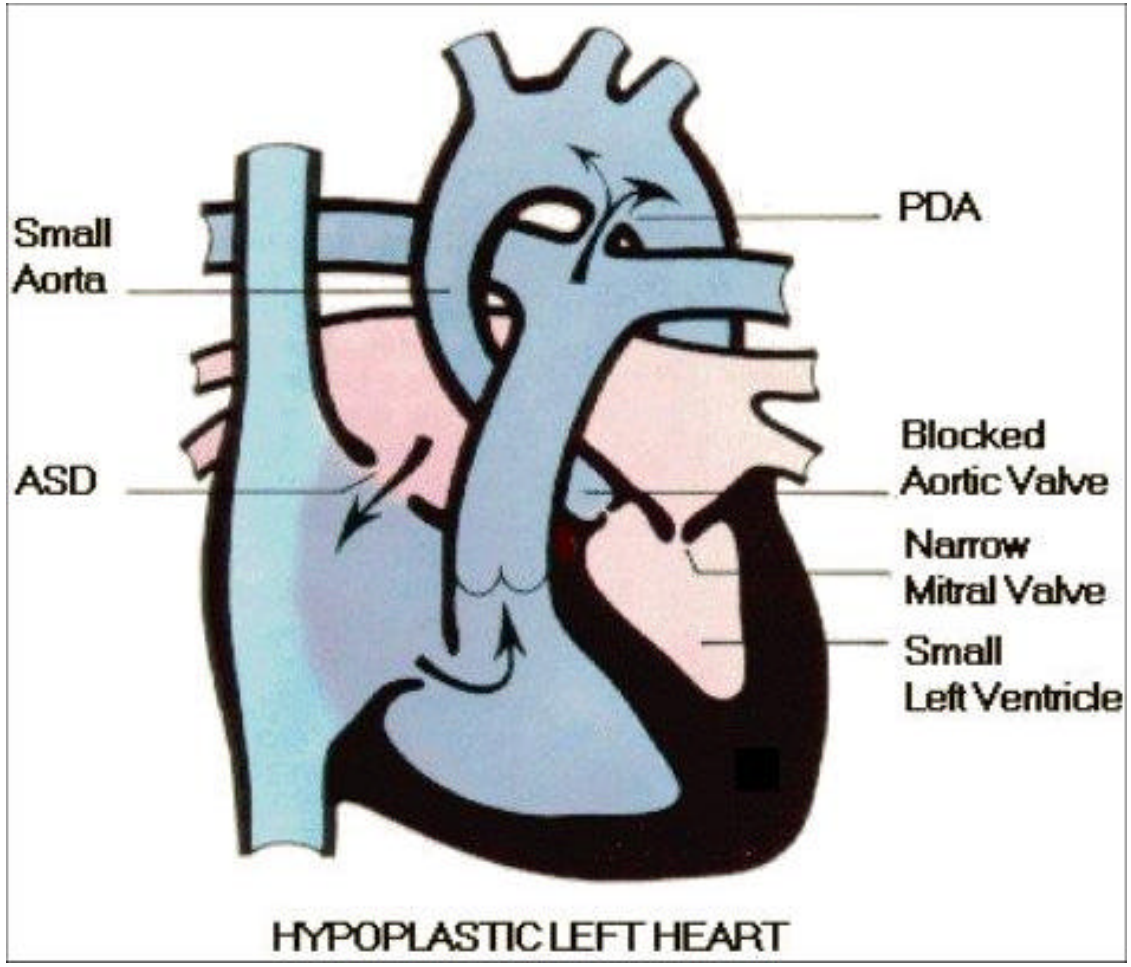
Left sided obstruction - coarctation of the aorta

- ?ESM
- Absent femorals in neonate
- Severe ? duct dependent
- Late presentation with ↑BP
- Surgical repair/catheter balloon
- ? Recurrence/late ↑BP



Left sided obstruction
Hypoplastic left heart syndrome

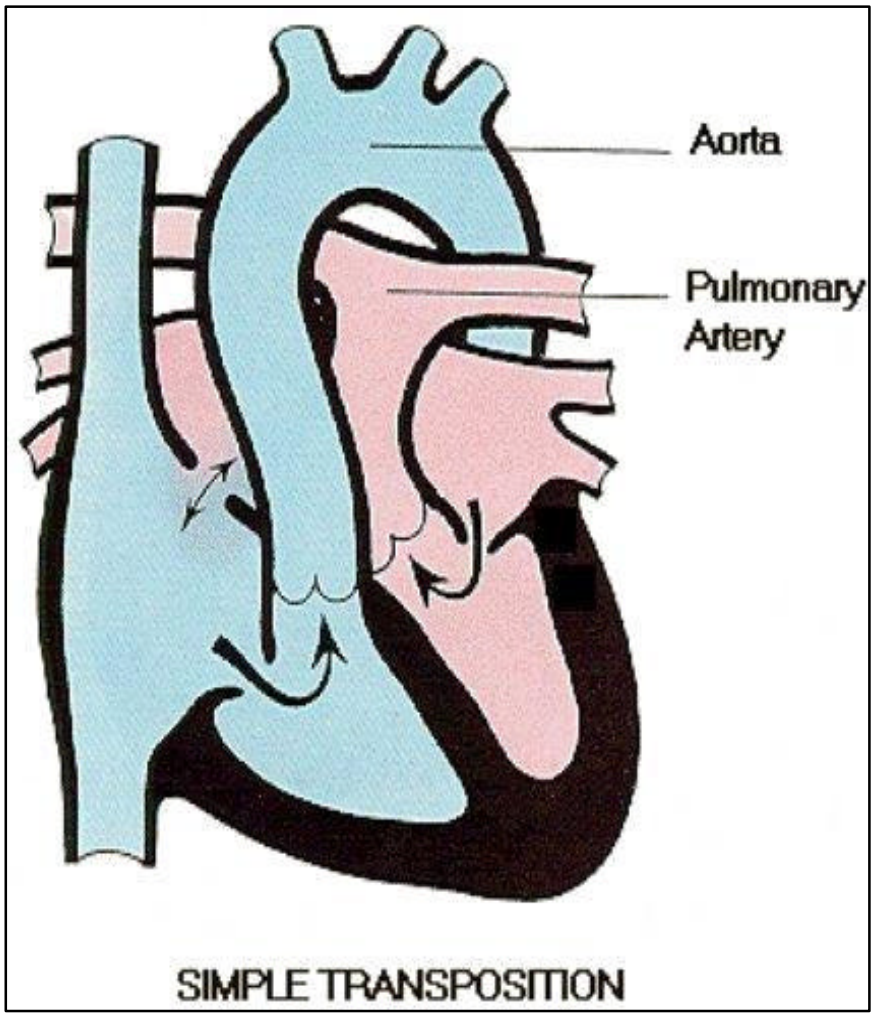
- ‘univentricular heart’
- Neonatal presentation
- Single S2
- Poor perfusion
- Few murmurs
- May present collapsed



Transposition of the Great Arteries

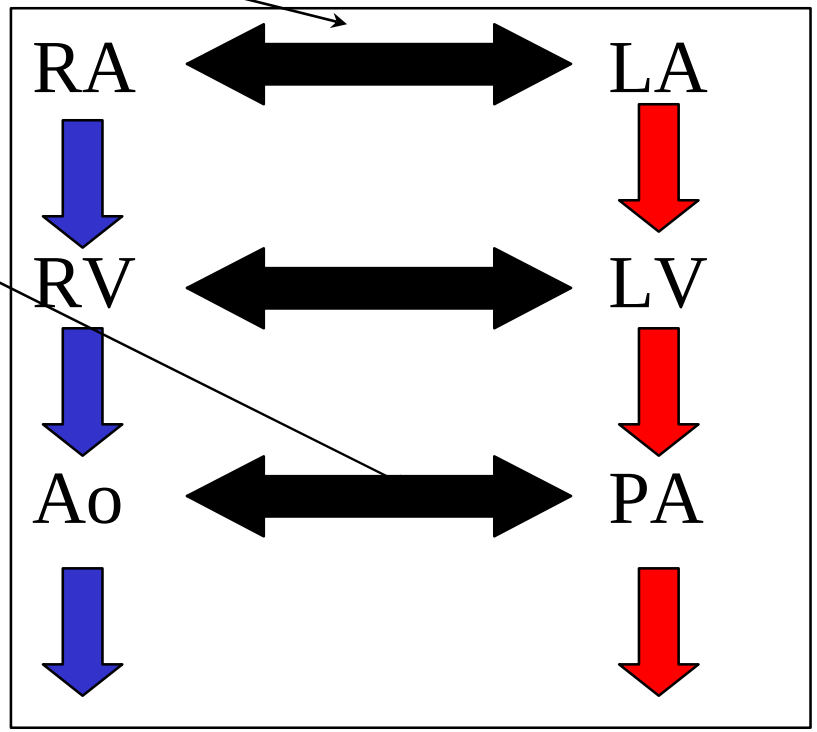
TGA

- Neonatal presentation
- May present collapsed
- Quiet heart
- Needs to mix till surgery

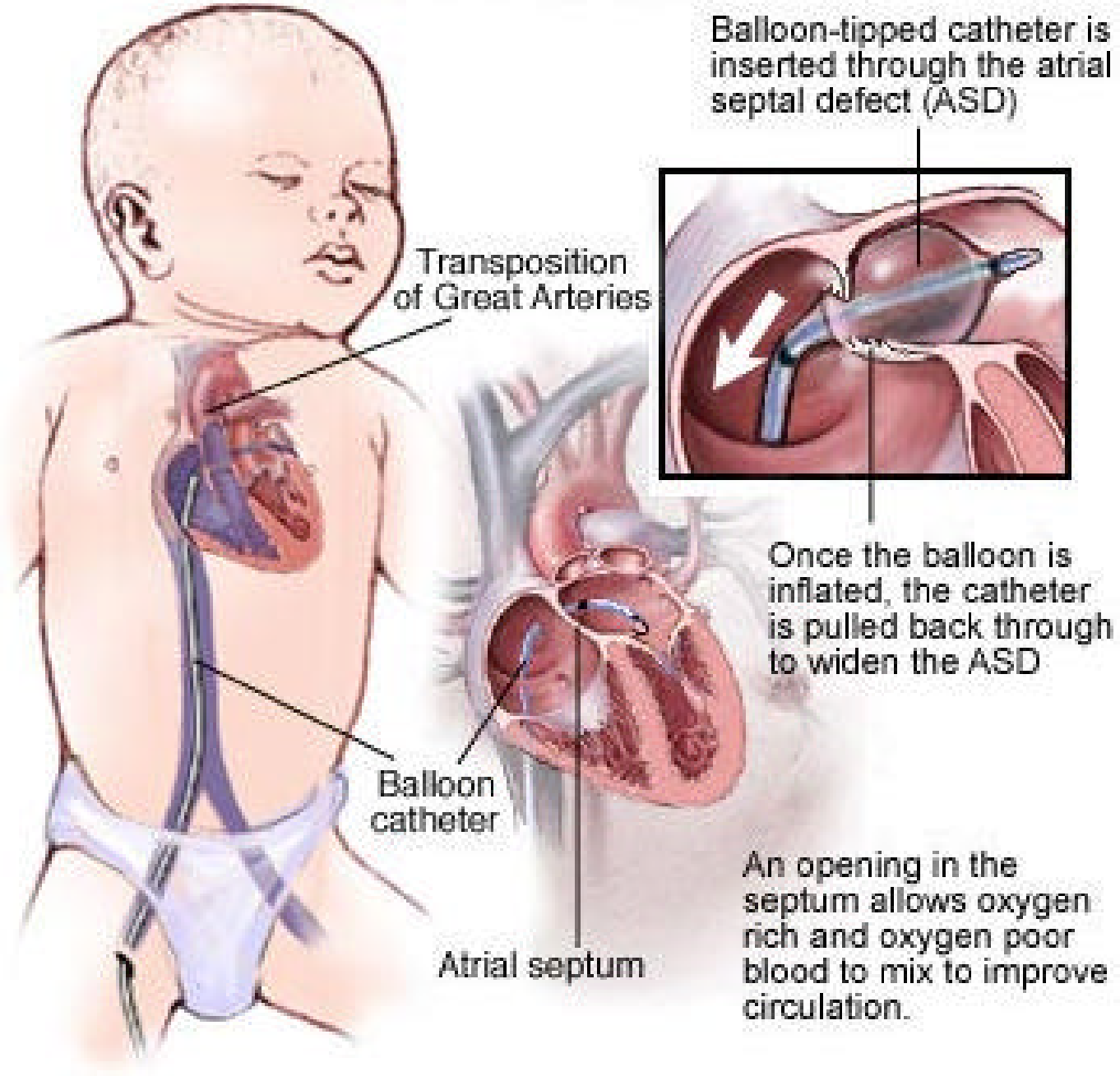


TGA

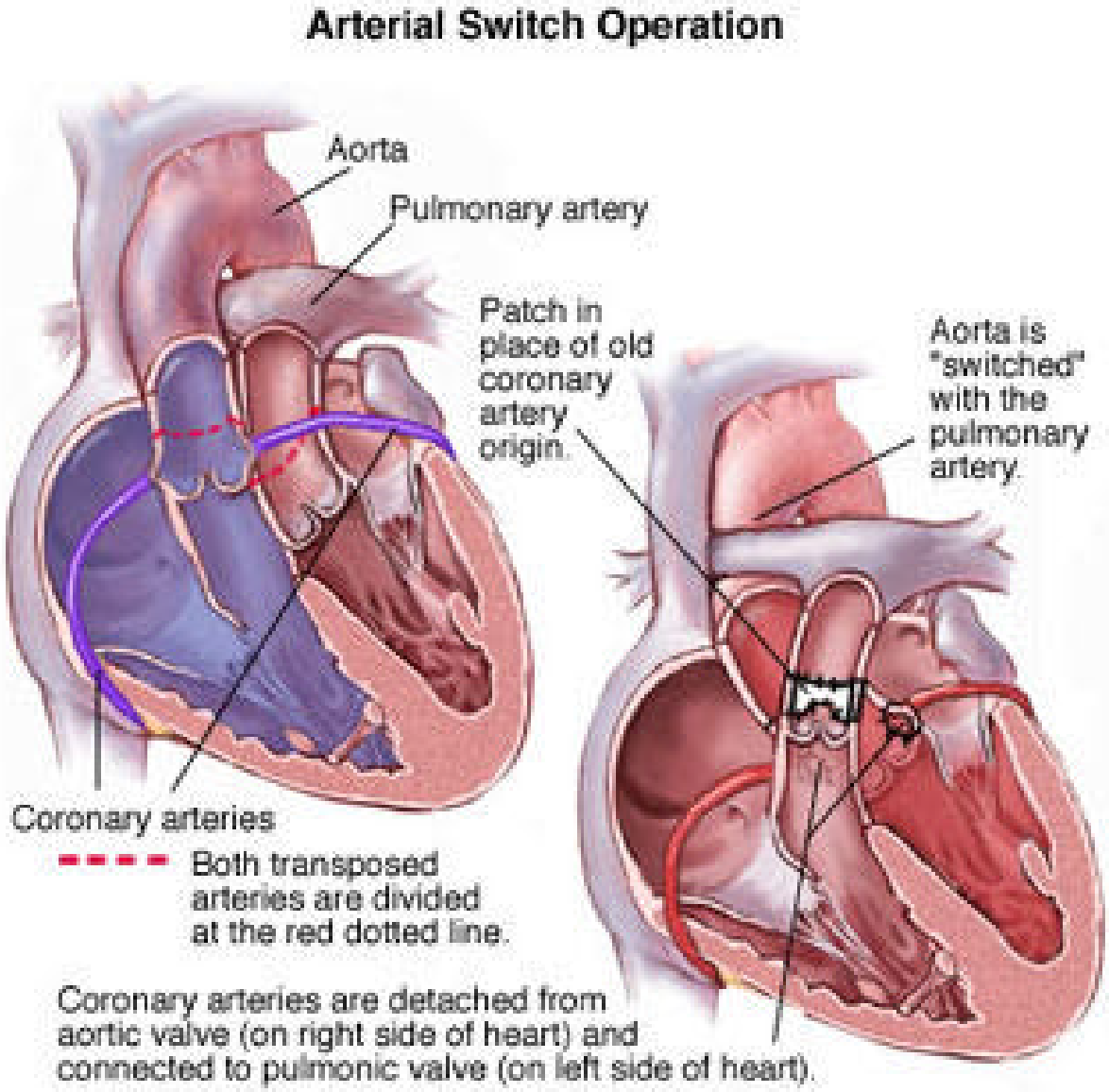
- Needs to mix till surgery
- ? Balloon atrial septostomy
- Prostaglandin
- Op: arterial switch



Balloon Atrial Septostomy (Rashkind Procedure)



TGA


Arterial Switch Operation
Aorta
Pulmonary artery
Patch in place of old coronary artery origin.
Aorta is "switched" with the pulmonary artery.
Coronary arteries
Both transposed arteries are divided at the red dotted line.
Coronary arteries are detached from aortic valve (on right side of heart) and connected to pulmonic valve (on left side of heart).

Overview - HF

- L→R shunting-early presentation with high pressure (systemic) shunting-pulmonary plethora
- Signs: Pink/pale, tachypnoea, tachycardia, LV+, sweaty with exertion (especially feeding), loud and single S2, S3, crackles, enlarged liver, failure to thrive + signs of lesion itself
- Treat with diuretics (eg frusemide and spironolactone 1mg/kg/dose TDS) and lesion itself

Overview - cyanosis

- Caused by reduced pulmonary flow
  - Pulmonary oligaemia esp with RVOTO lesions
- TGA

- Chronic hypoxia
  - Organ failure
  - Growth failure
  - Polycythaemia and bleeding problems
  - CVA

- **Infective Endocarditis**
  - Antibiotic prophylaxis for dental procedures and surgery
  - Especially in lesions which produce turbulence
  - Dental care - checkups and regular brushing

- **Pulmonary Hypertension**
  - Caused by unrestricted pulmonary blood supply

- **Preservation of Myocardial Function**
  - Important for *long-term* survival

Prevention of bacterial endocarditis