2016 전공의 연수강좌

ASD, VSD, PDA

세종병원

최은석

Congenital Heart Disease

- Acyanotic heart lesions
  - Lt. to Rt. shunt lesions: ASD, VSD, PDA, AVSD, AP window, etc.
- Cyanotic heart lesions: TOF, TGA, etc.
- Others

Features of heart failure in infants

- History
  - Poor feeding
  - Poor weight gain
- Physical Examination
  - Tachypnea
  - chest retraction
  - Hepatomegaly

Management

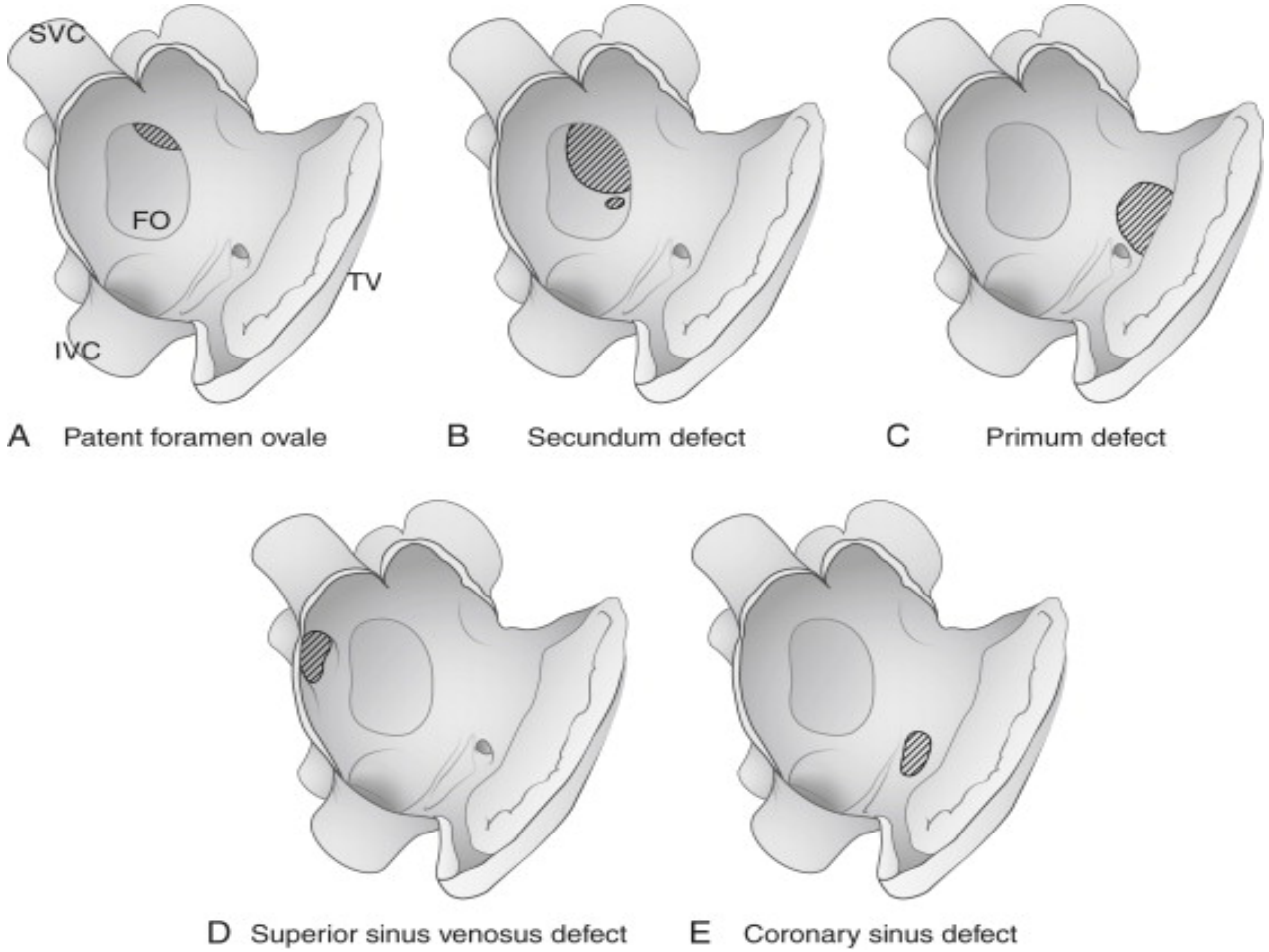
- Surgical indication
  - Symptom (+)
  - Significant amount of shunt: Qp:Qs $\geq$ 1.5, LV volume overload
- Contraindication
- Treatment modality
  - Surgery
  - Intervention

ASD

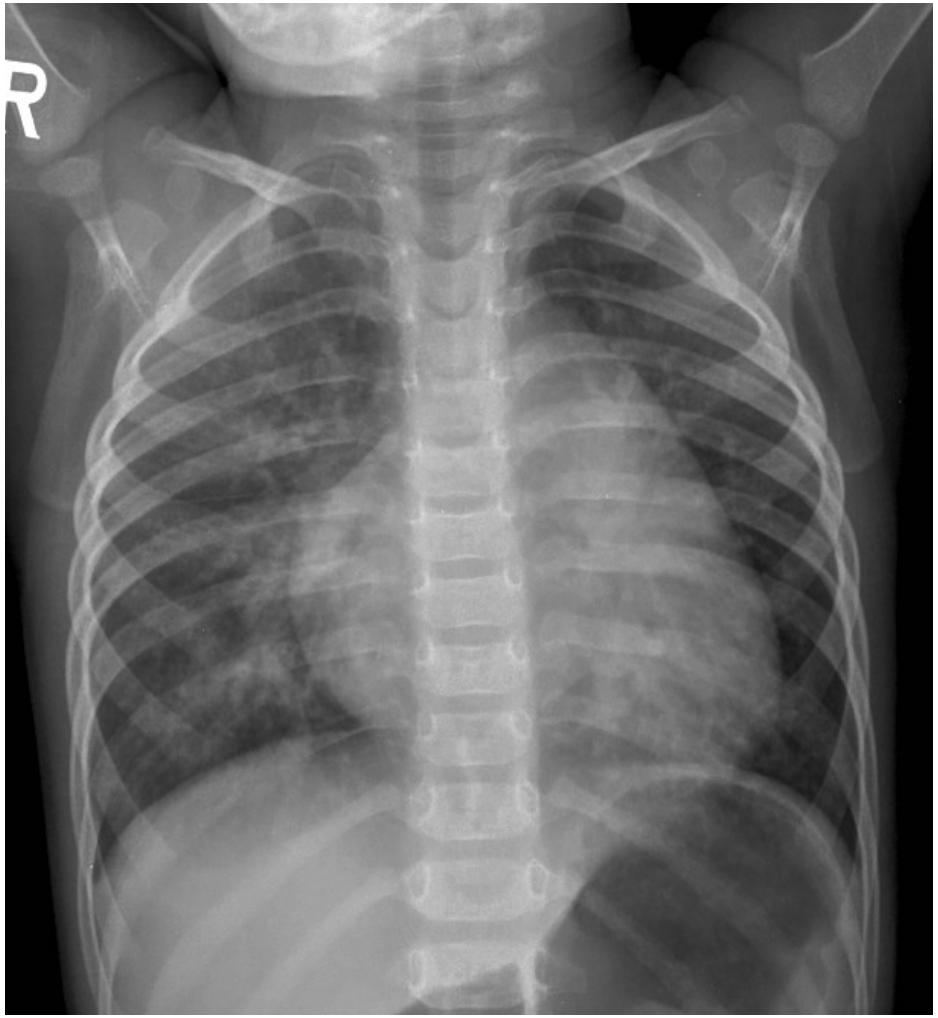
(Atrial Septal Defect)

Type

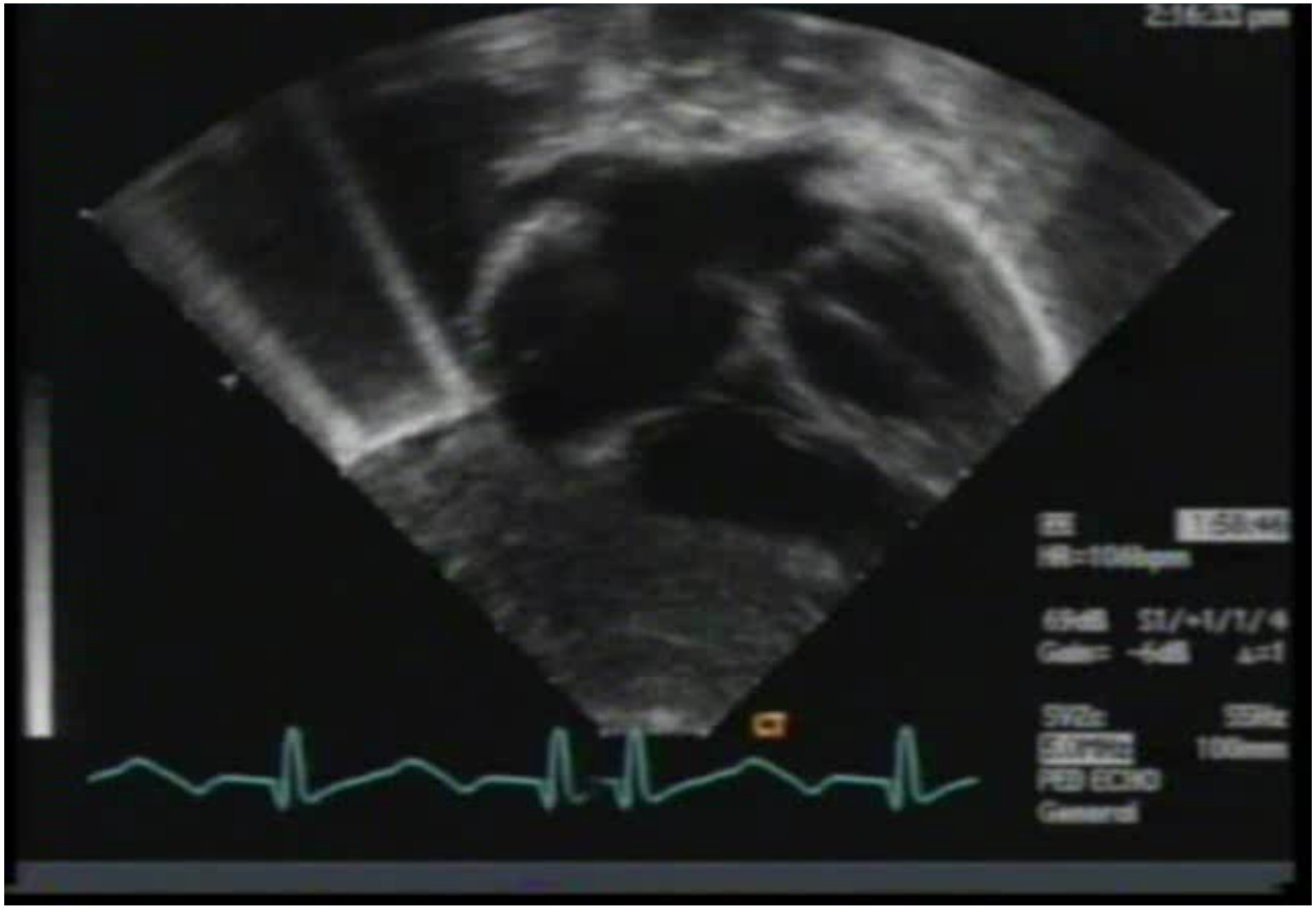
- Secundum (m/c)
  - Primum
- Sinus venosus
  - SVC / IVC type
  - PAPVR
- Coronary sinus



CPA



EchoCG



Management

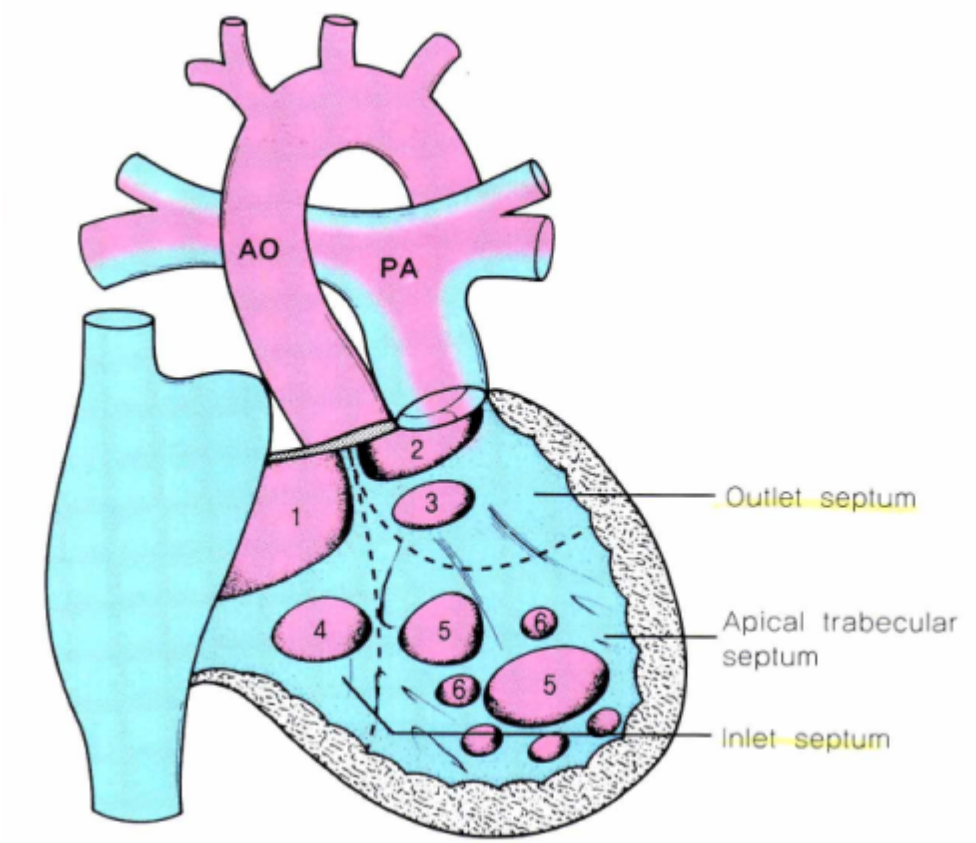
- Treatment
  - Intervention: ≥ 12kg
  - Surgery
    - Limb deficiency
    - Sternotomy vs. thoracotomy vs. minimally invasive
- Contraindication

VSD

(Ventricular Septal Defect)

Type

- Subarterial
- Perimembranous (m/c)
- Inlet
- Muscular
- Gerbode

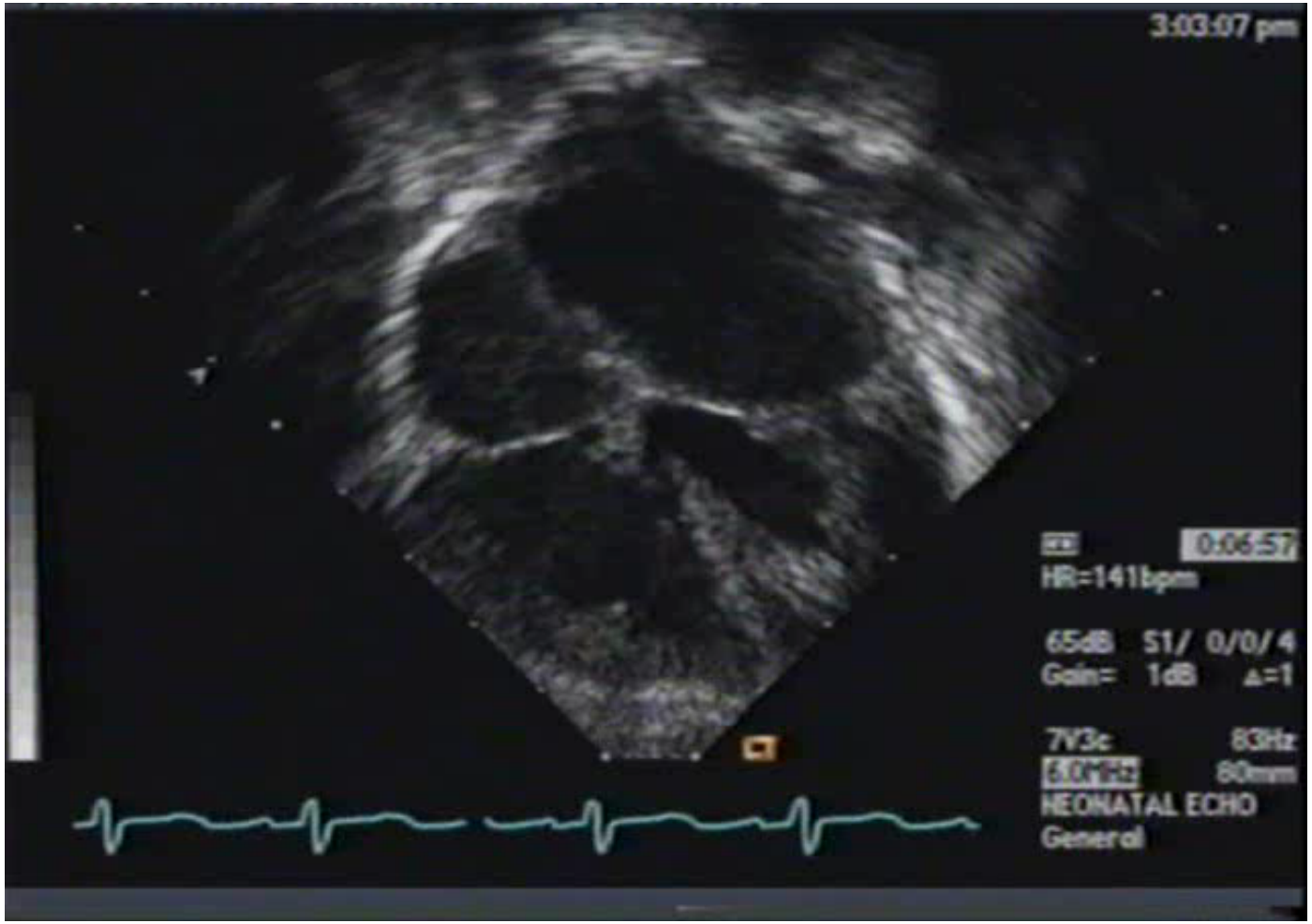


Clinical manifestation

- Size of defect / amount of shunt
  - Small
  - Moderate
  - Large:
    - Low Rp: large shunt – severe congestion
    - High Rp: Eisenmenger syndrome: no shunt or reverse shunt

CPA

EchoCG

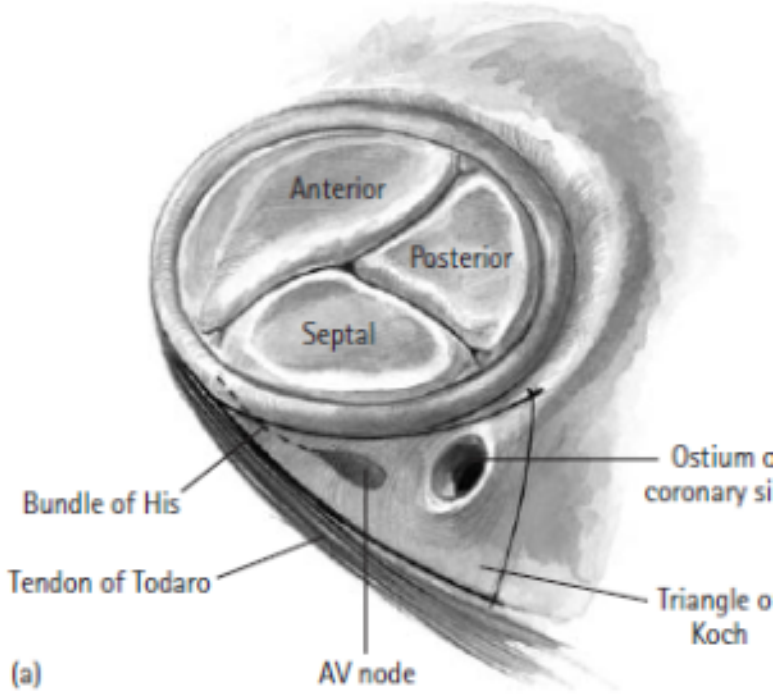

3:03:07 pm
0:06:57
HR=141bpm
65dB 51/ 0/0/ 4
Gain= 1dB Δ=1
7V3c 83Hz
80mm
NEONATAL ECHO
General

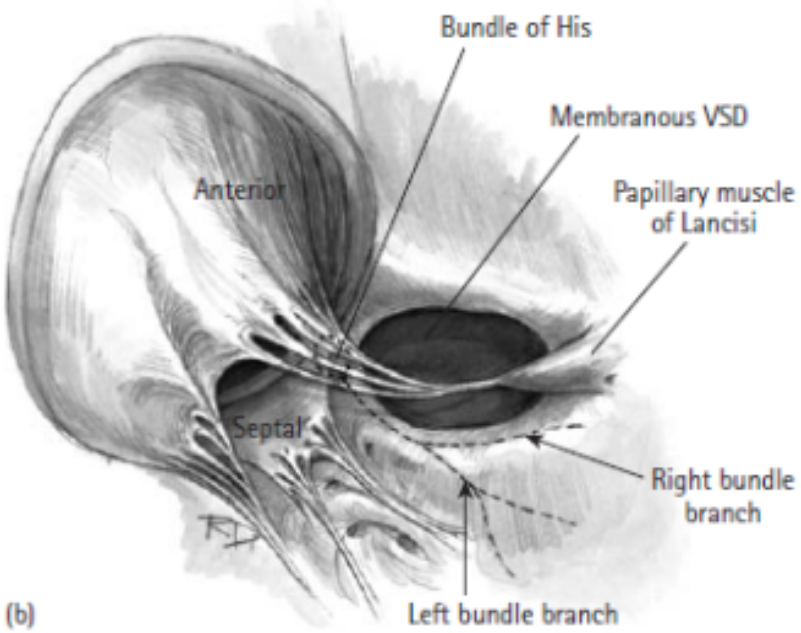
Natural history

- Spontaneous closure: ± septal aneurysm
  - Subarterial type
- AV prolapse: ± AR
  - Subarterial / perimembraneous type
- Infundibular narrowing
- Pulmonary vascular disease

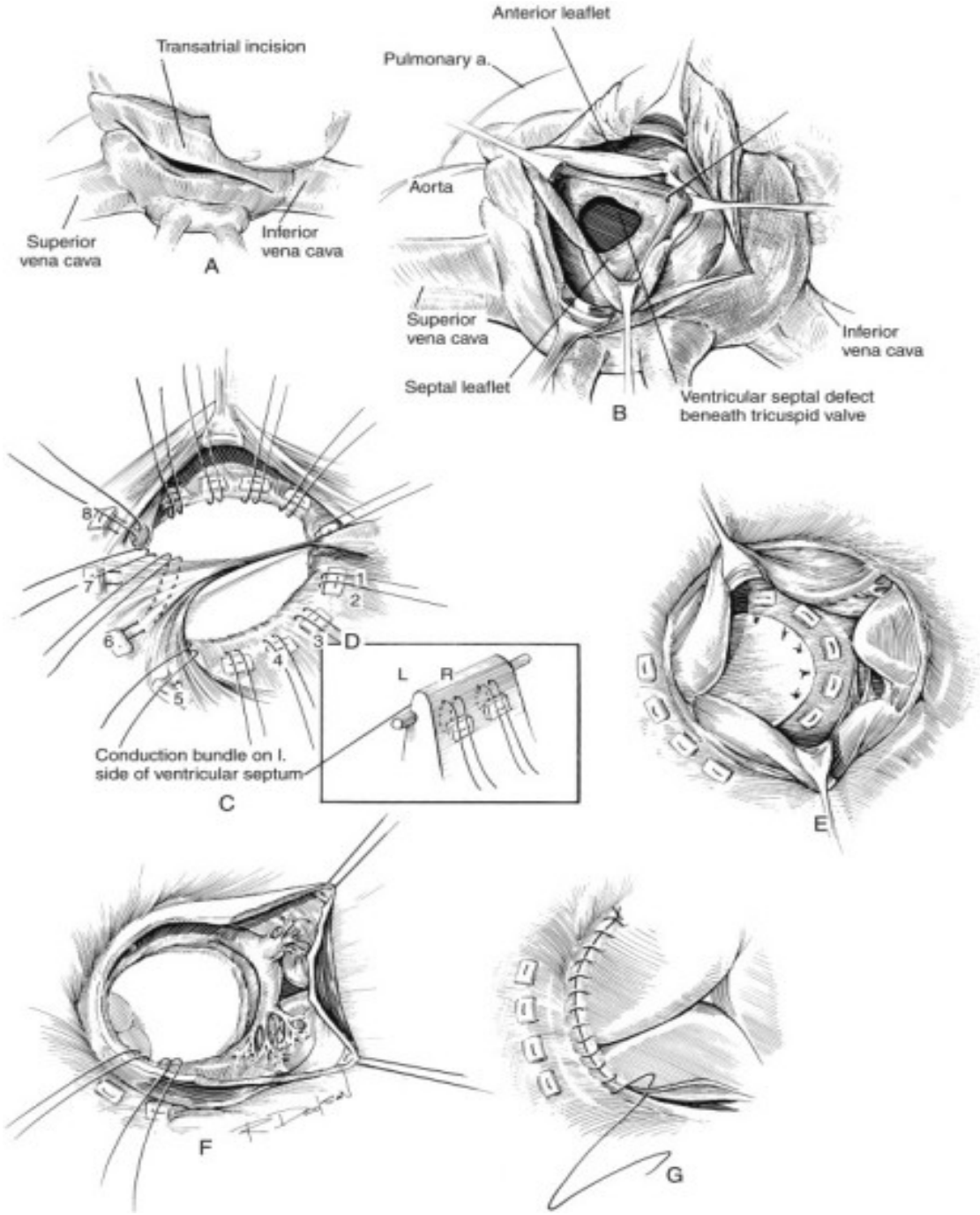
Conduction system in VSD

Koch's Triangle





VSD patch closure



Management

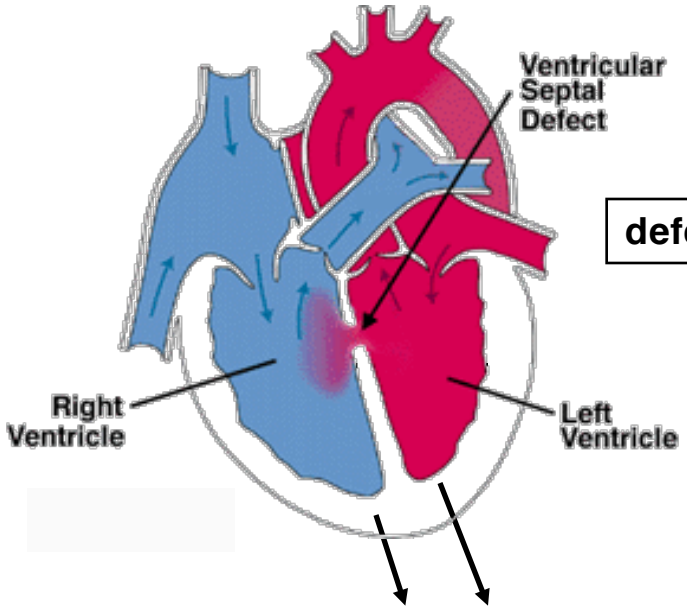
- Surgical indication
  - Significant amount of shunt
  - AV prolapse $\pm$ AR
- Contraindication
- Treatment
  - Operation
  - Intervention: muscular VSD

Postoperative care

- Pulmonary hypertension
- Arrhythmia
  - JET (Junctional Ectopic Tachycardia)
  - AV block
- Aortic insufficiency
- Tricuspid regurgitation
- Residual shunt

Hemodynamic in ASD / VSD

VSD (post-TV shunt)



defect size

status of pulmonary vascular bed

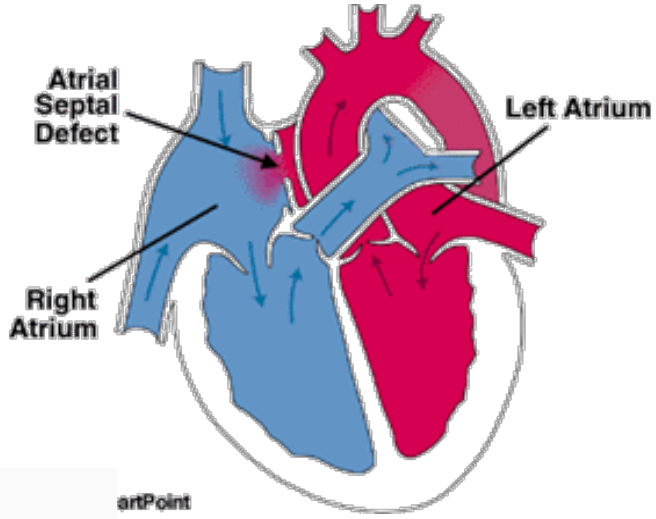
resistance to ventricular outflow

resistance to ventricular outflow

status of systemic vascular bed

ASD (pre-TV shunt)

defect size

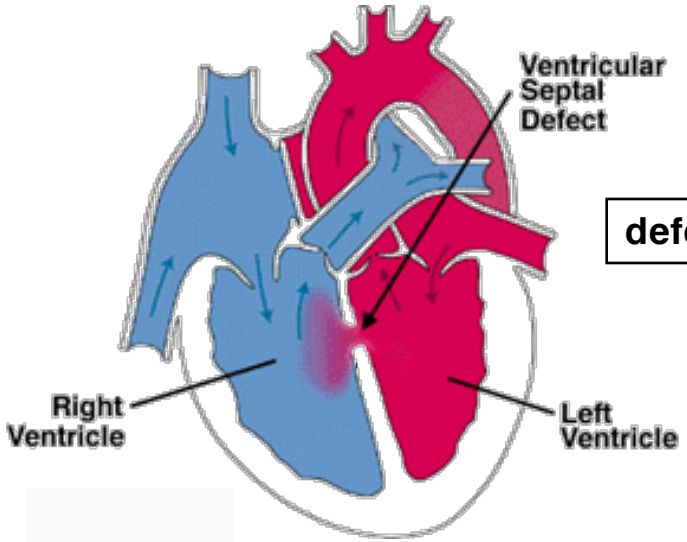


compliance of each chamber

resistance in the great arteries

Hemodynamic in VSD / ASD

VSD (post-TV shunt)

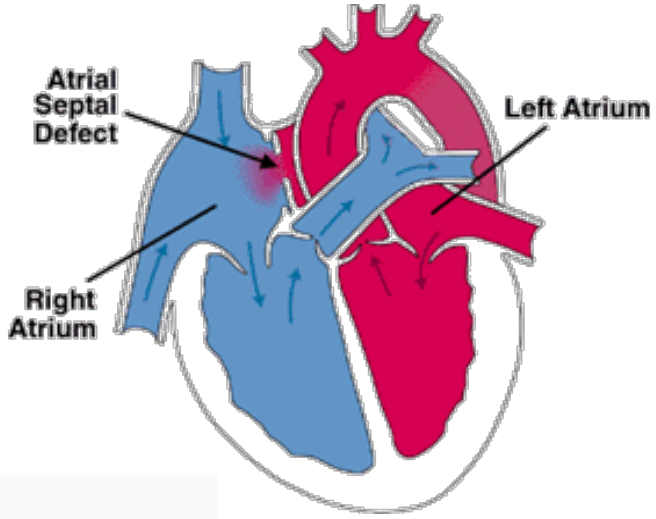


defect size

- Pressure loaded RV
- Pressure and volume loaded PA
- RVH, pulmonary HTN, Eisenmenger syndrome
- Volume overloaded LV → MR, CHF

ASD (pre-TV shunt)

defect size



- Only volume loaded PA
- Rare pulmonary HTN and Eisenmenger syndrome
- Volume overload RA and RV
- Secondary LV dysfunction

PDA

(Patent ductus arteriosus)

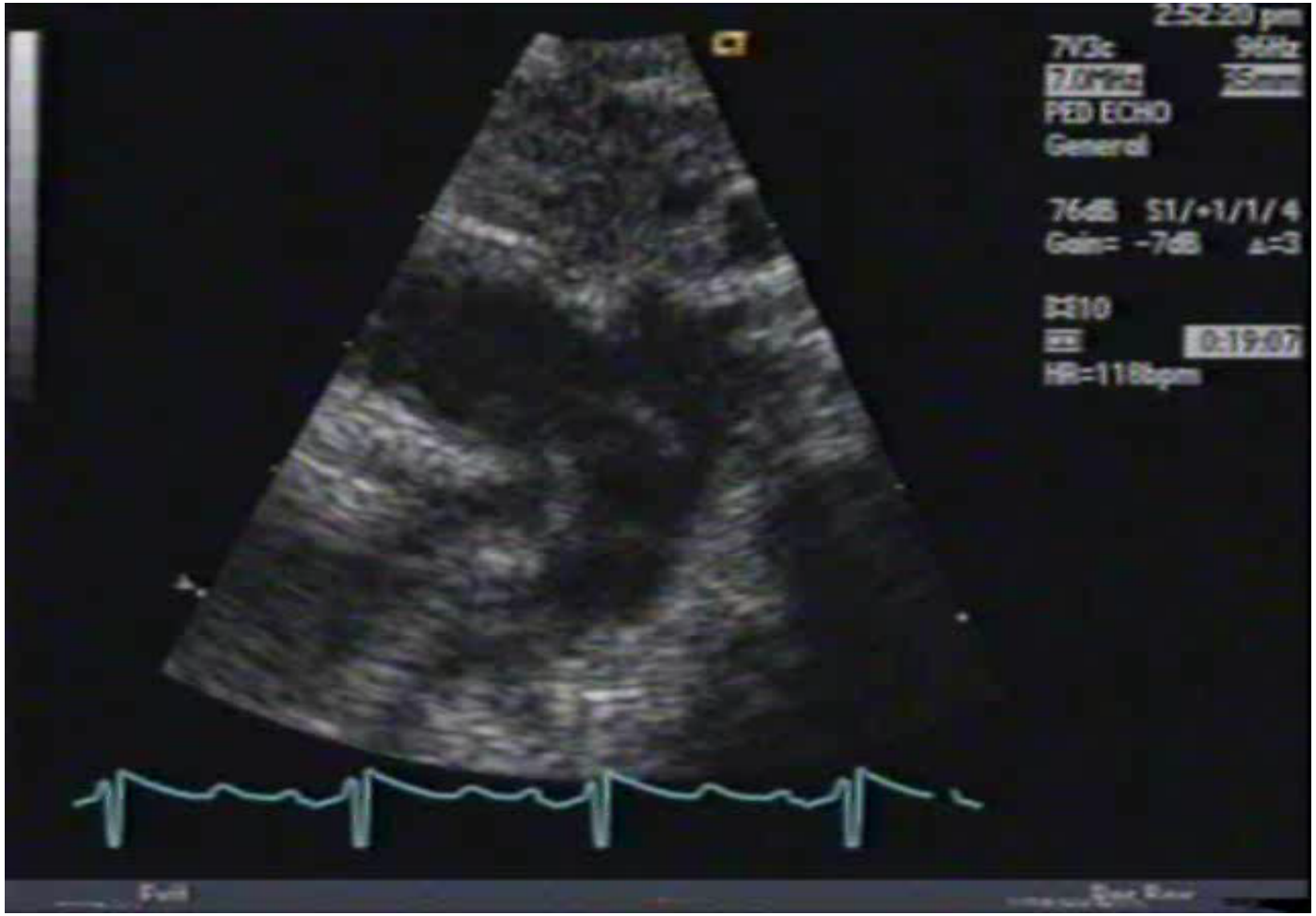
Anatomy

- Ductus from 6th arch
- Aorta from 4th arch

Clinical manifestation

- Nearly same as that of VSD
  - Continuous murmur
- Size
  - Small
  - Moderate
  - Large

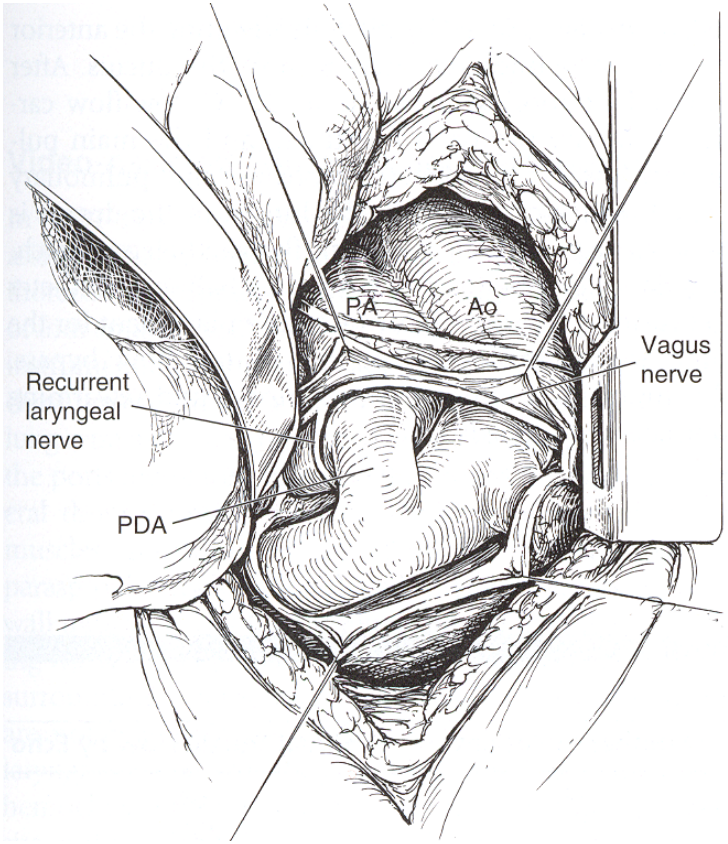
EchoCG

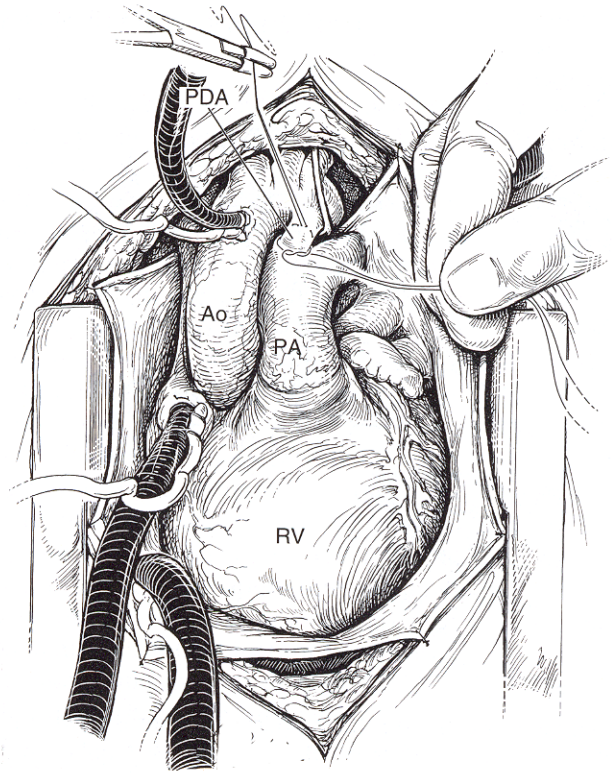


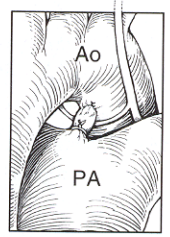
Management

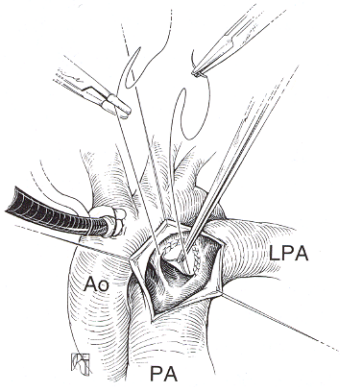
- Surgery
    - Thoracotomy vs. sternotomy
    - Ligation / division / patch closure
- Intervention
    - ≥ 6kg

Surgical treatment









Thank you for your intention