

Aortic Stenosis: Pathology

Normal



Congenital



Acquired



Aortic Stenosis

Pathophysiology

Aortic Stenosis: Pathophysiology

Measuring severity: valve area

- Severe $\leq 1.0 \text{ cm}^2$
- Moderate $1.0 - 1.4 \text{ cm}^2$
- Mild $> 1.5 \text{ cm}^2$

Left Ventricular Pressure Overload



Gradient between LV and Aorta

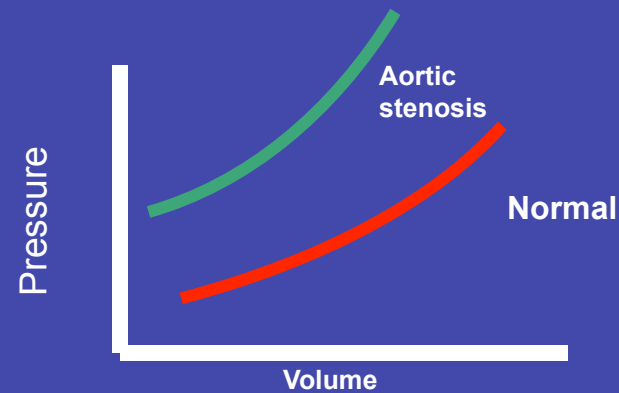
Global gene activation

Concentric hypertrophy



Aortic Stenosis: Clinical Findings

- Dyspnea



PD-INEL M. Shea

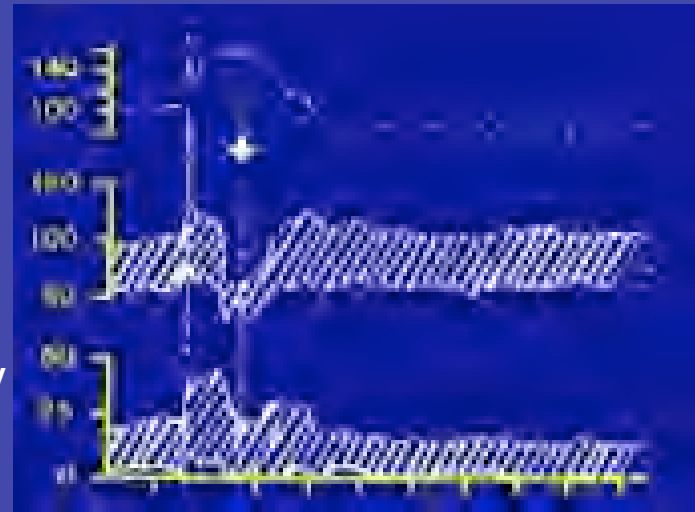
- Angina pectoris

- Syncope

Heart
Rate
(bpm)

Systemic
Arterial
Pressure
(mmHg)

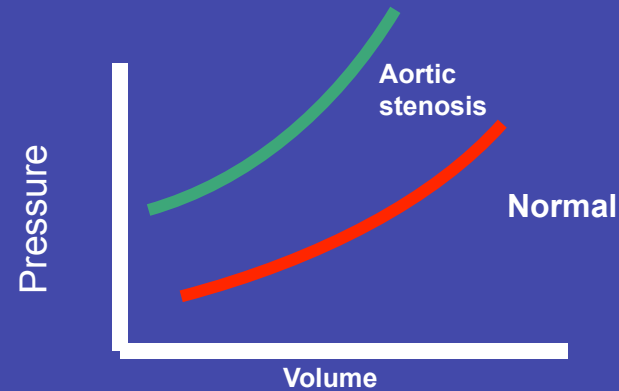
Pulmonary
Arterial
Pressure
(mmHg)



PD-INEL Source Undetermined

Aortic Stenosis: Clinical Findings

- Dyspnea

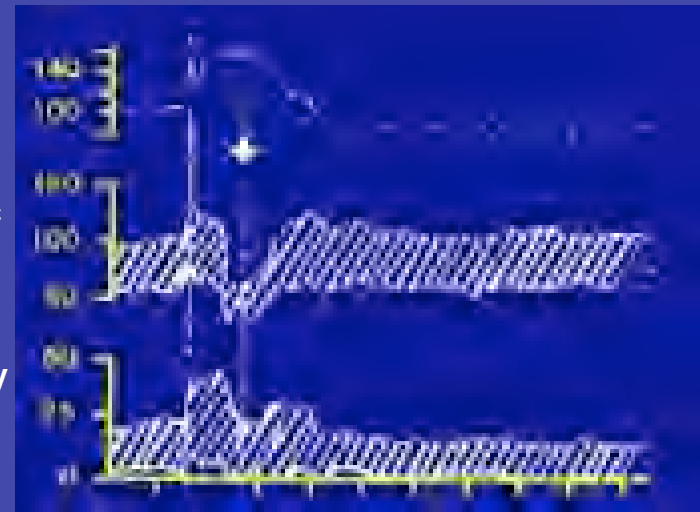


PD-INEL M. Shea

- Angina pectoris

- Syncope

Heart
Rate
(bpm)
Systemic
Arterial
Pressure
(mmHg)
Pulmonary
Arterial
Pressure
(mmHg)



PD-INEL Source Undetermined

Carotid Pulse

Normal



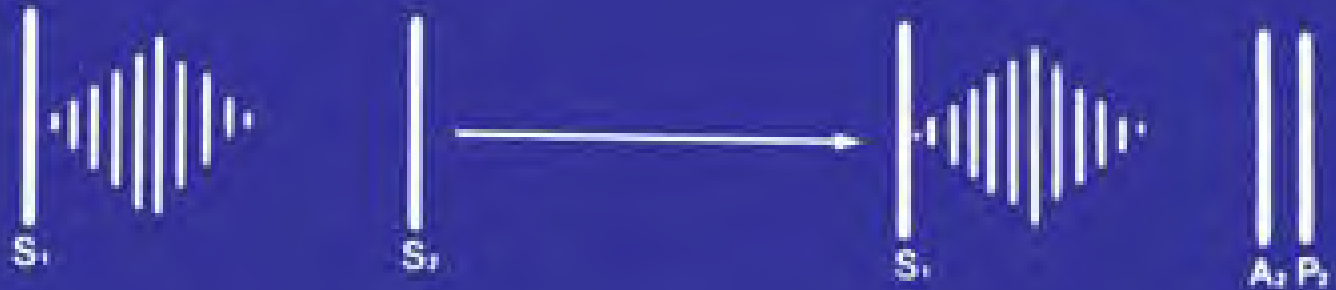
Parvus et tardus pulse



Expiration

Inspiration

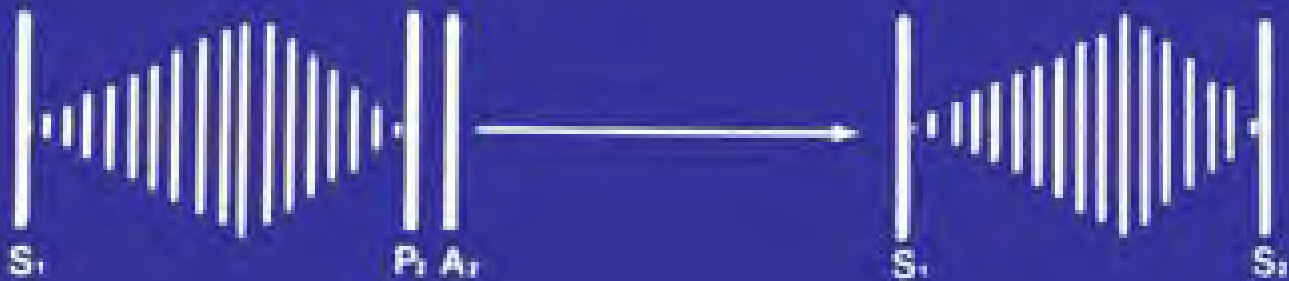
Mild



Moderate



Severe

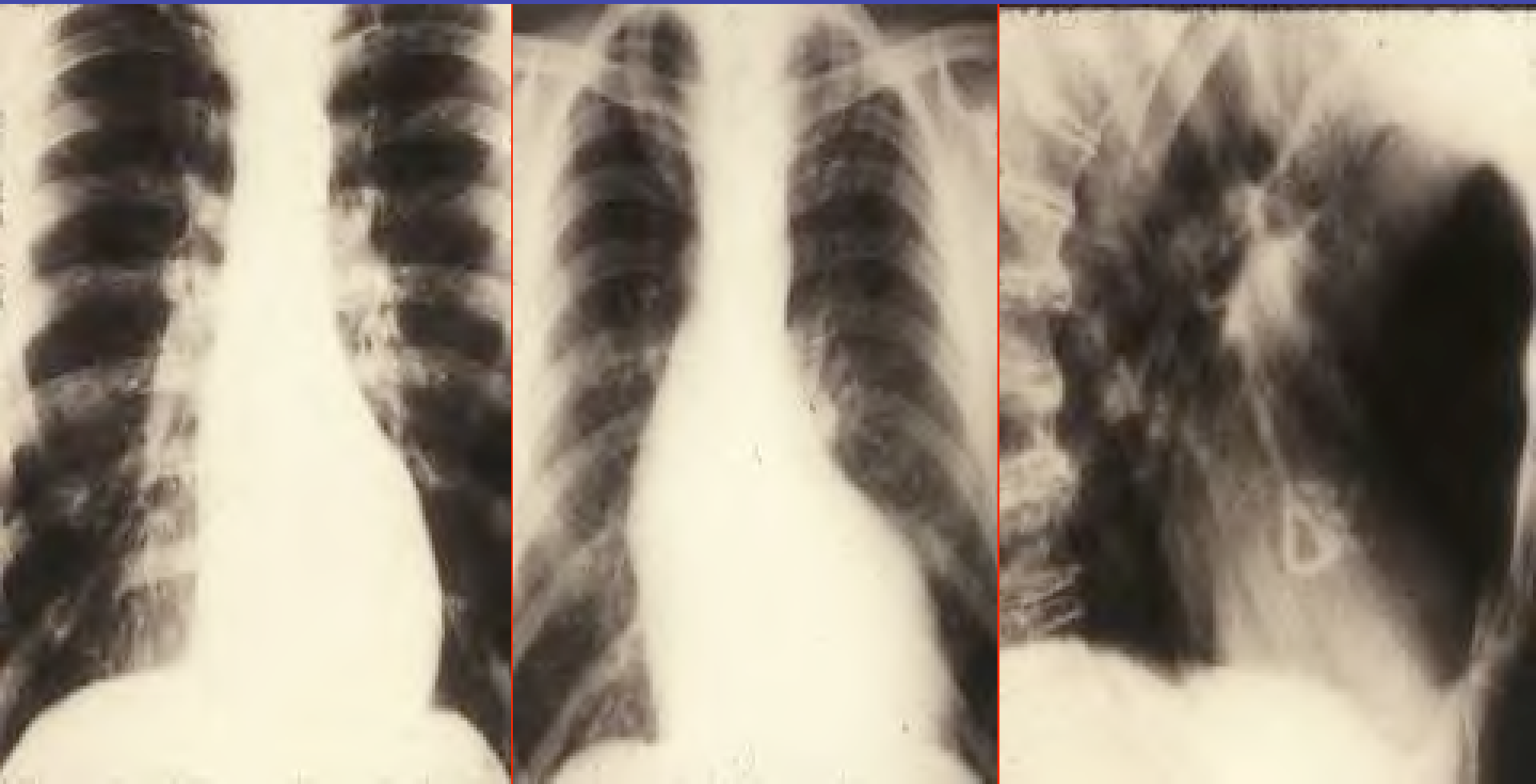


Aortic Stenosis

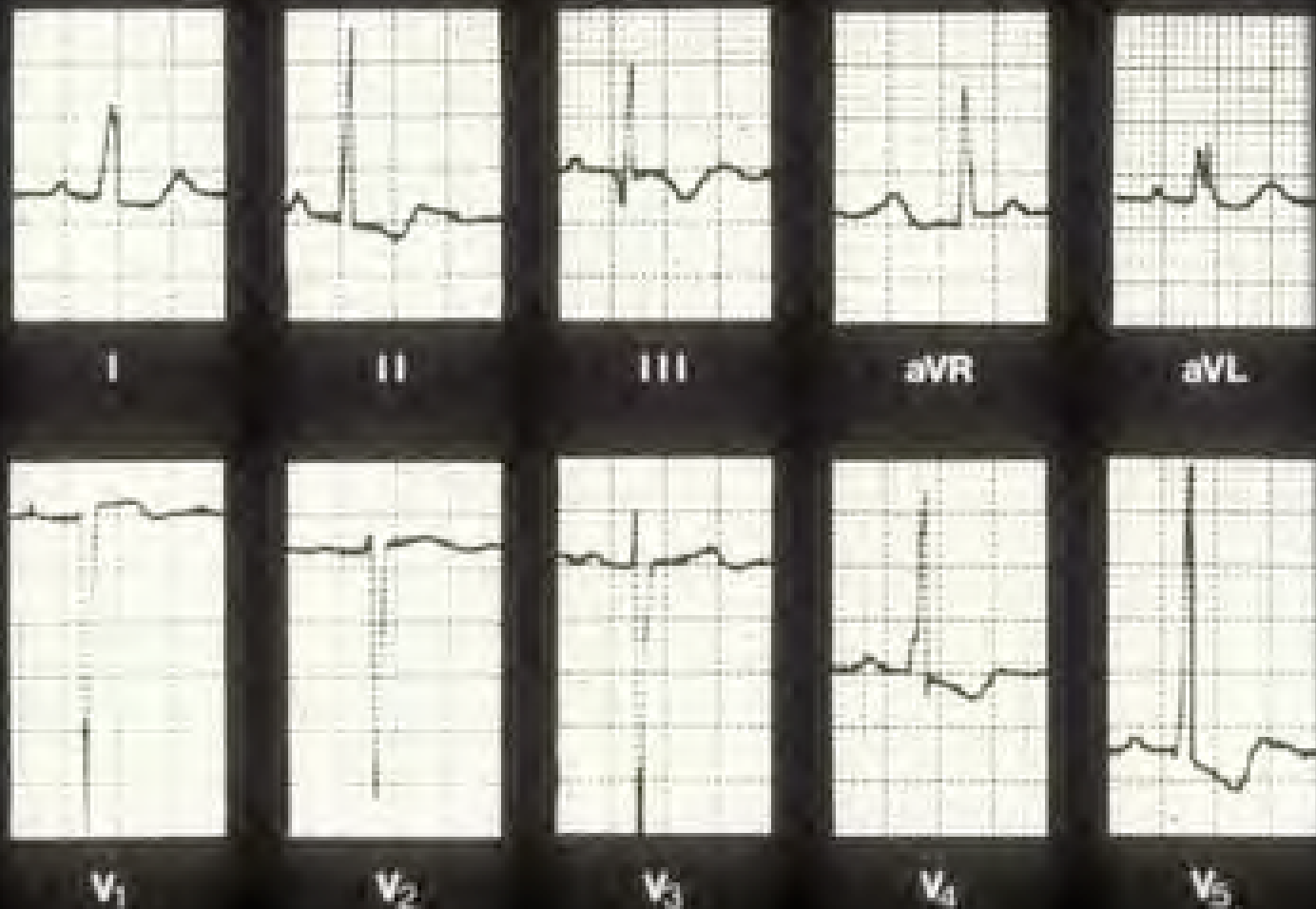
Laboratory Evaluation

- ❖ Chest radiology
- ❖ Electrocardiography
- ❖ Echocardiography
- ❖ Stress testing
- ❖ Catheterization

Aortic Stenosis: Chest radiology

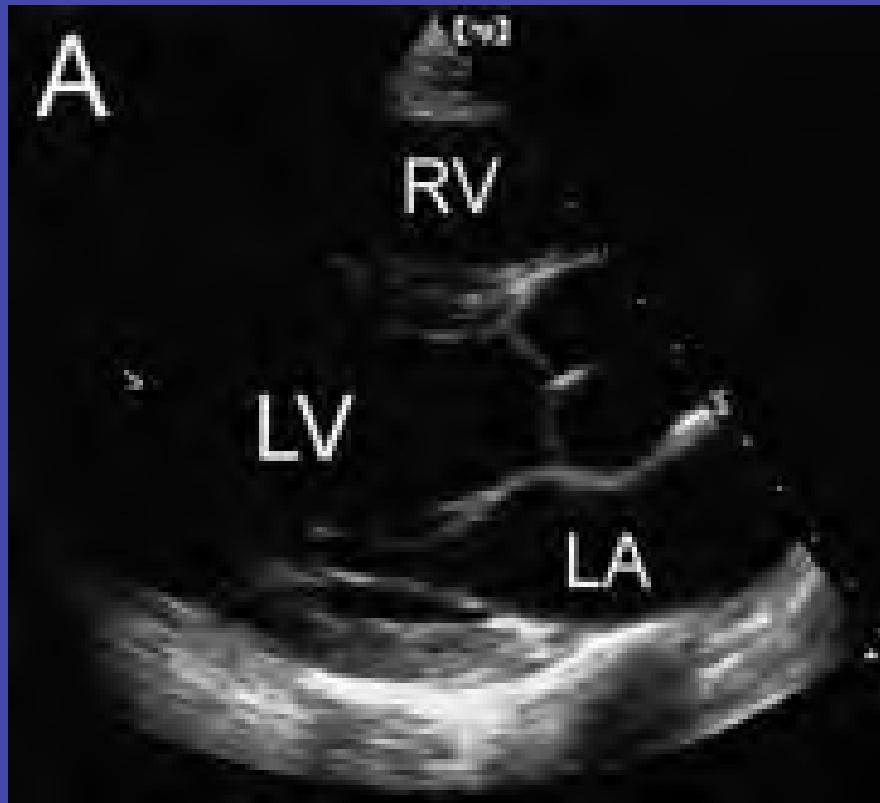


The Electrocardiogram



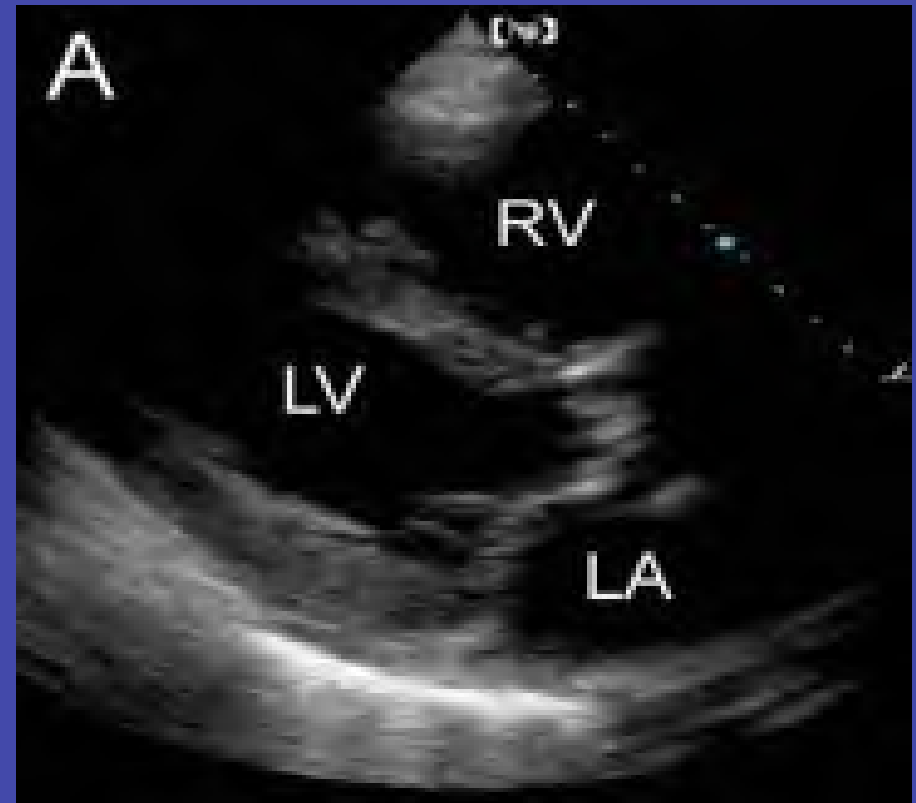
Echocardiography: Parasternal

Normal



PD-INEL Source Undetermined

Aortic Stenosis



PD-INEL Source Undetermined

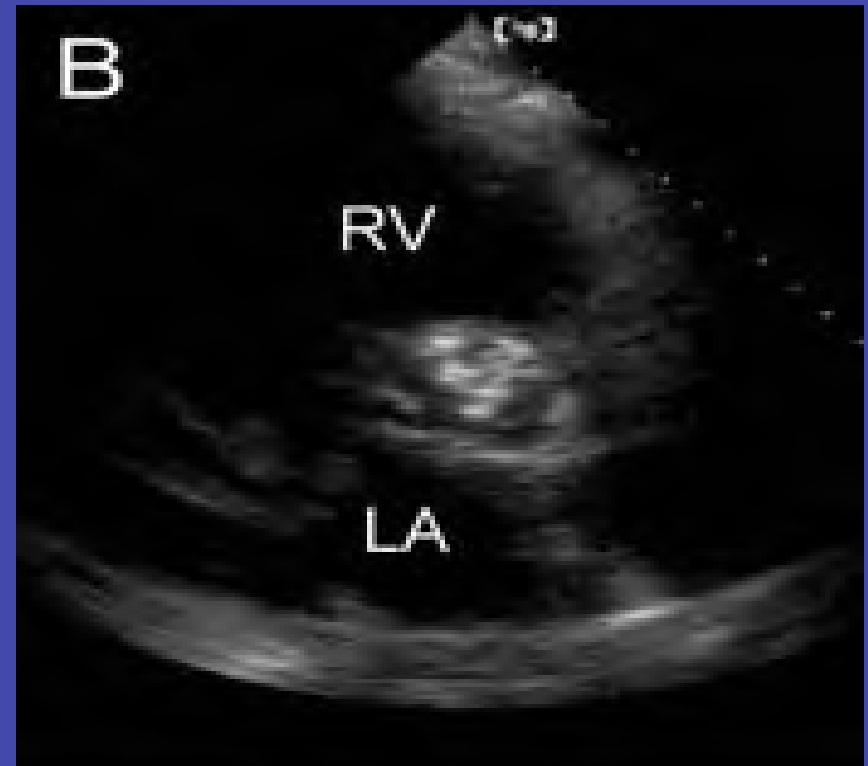
Echocardiography: Short Axis

Normal:



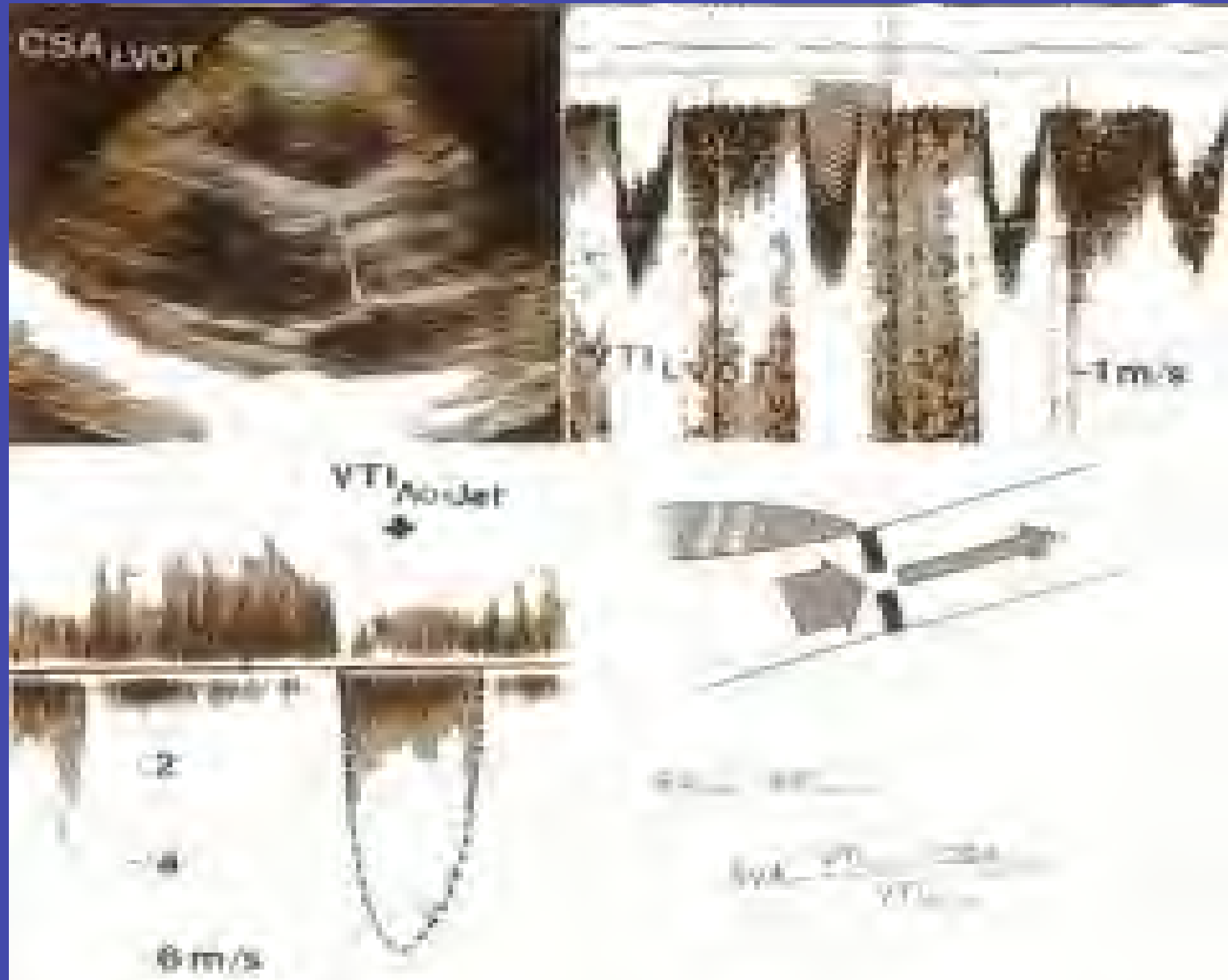
PD-INEL Source Undetermined

Aortic Stenosis



PD-INEL Source Undetermined

Aortic Stenosis: Continuity Equation



Aortic Valve Stenosis: Echo Findings

Leaflet changes:

- ↑ Thickening
- ↑ Calcification
- ↓ Mobility

Ventricular changes:

- Left ventricular hypertrophy

Doppler changes:

- ↑ valve gradient / ↓ valve area

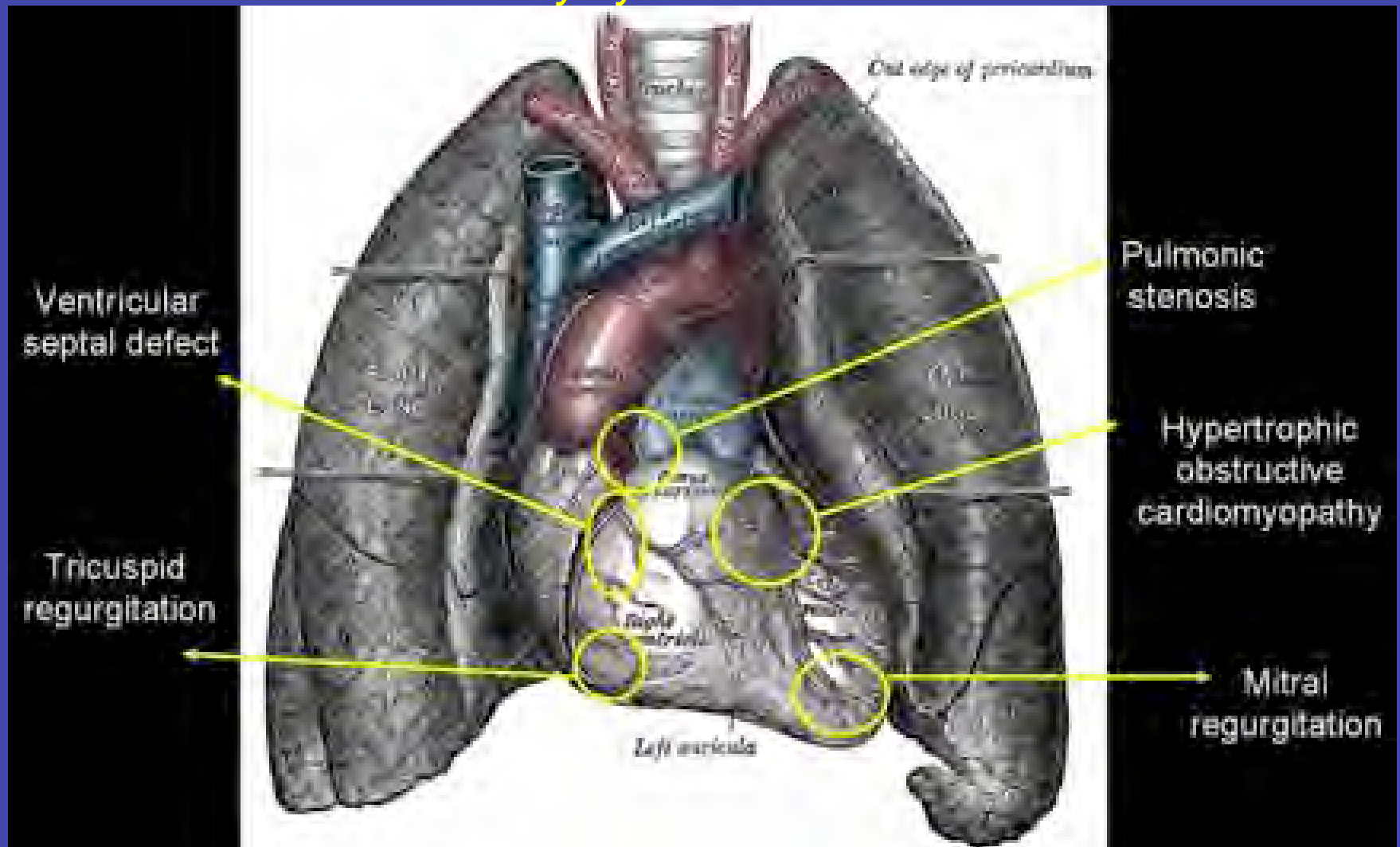
Aortic Stenosis

Laboratory Evaluation

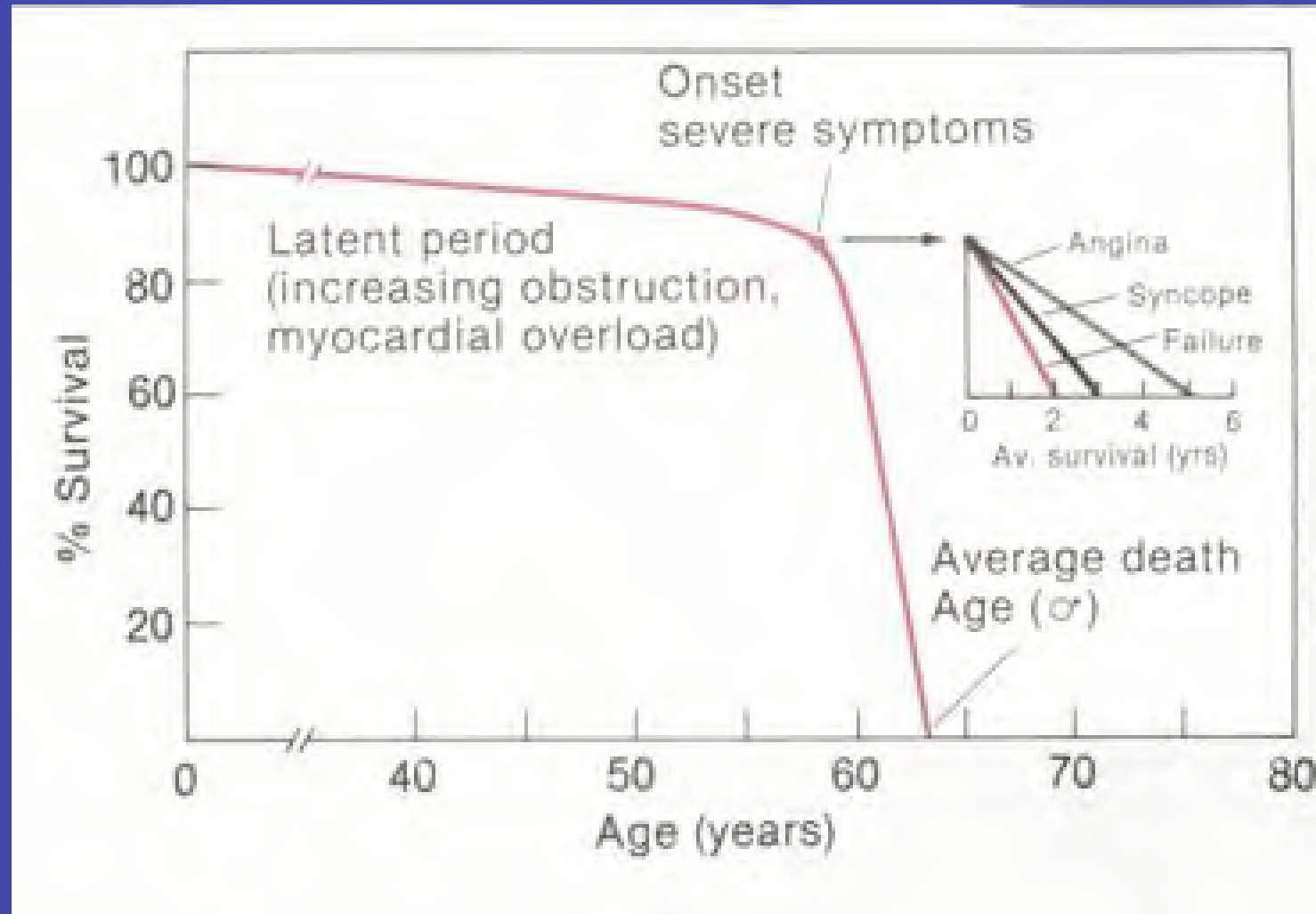
- ❖ Chest radiology
- ❖ Electrocardiography
- ❖ Echocardiography
- ❖ Stress testing
- ❖ Catheterization

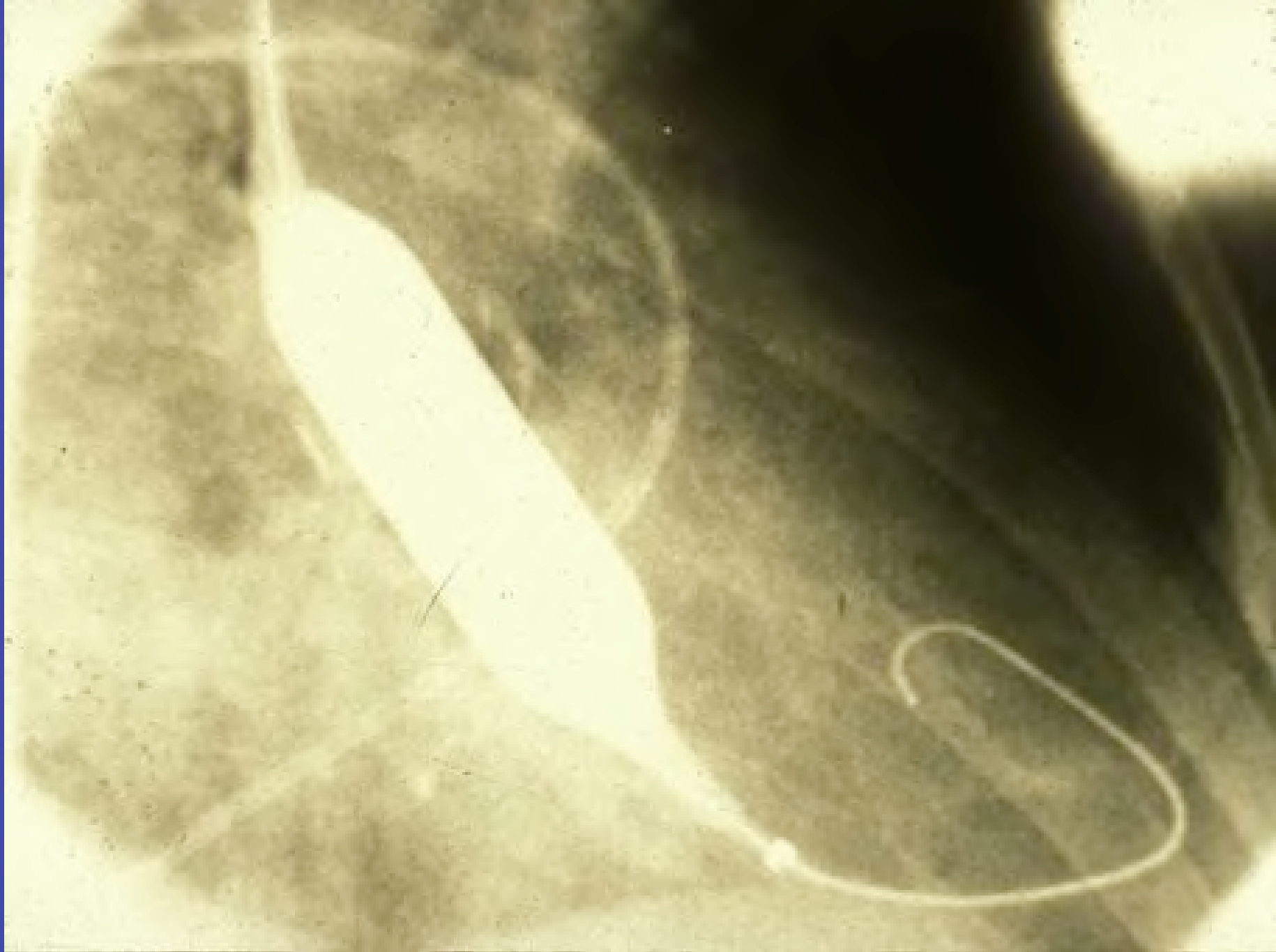
Aortic Stenosis: Differential Diagnosis

Any systolic murmur



Natural History of Aortic Stenosis





Schematic
representation of
pulmonary
autograph
removed

Aortic Stenosis: Management

- Young patient
 - Balloon valvotomy
 - Ross procedure
- Adults
 - Valve replacement

Cribier-Edwards Percutaneous Valve



PD-INEL Source Undetermined



PD-INEL [medGadget](#)



PD-INEL Source Undetermined