

Valvular heart diseases

AS	AR	MS	MR
<p>Congenital AS</p> <p>Congenital sub valvular As</p> <p>Slowly progressing > Calcification</p> <p>Rheumatic AS</p> <p>Degenerative AS</p>	<p>congenital bicuspid or misappropriate cusp</p> <p>Acquired Rheumatic disease (m.c)</p> <p>Infective endocarditis</p> <p>Trauma</p> <p>Aortic dilatation: ankylosing spondylitis , marfan , syphilis</p>	<p>Isolated 25% Rheumatic disease</p> <p>Mixed</p> <hr/> <p>Congenital</p> <p>Acquired Rheumatic SLE</p>	<p>Acute Ischemic MR leading to ruptured chorda</p> <p>chronic Mitral valve prolapse</p>
<p>Tricuspid semilunar valve</p> <p>Ant (Right), posterior (left , posterior)</p>		<p>Bicuspid valve</p> <p>Anterior (larger) , posterior</p>	
<p>Calcification > decrease surface area > increase pressure against resistance > LV hypertrophy</p>	<p>Volume overload due to regurg of blood to left ventricle > increase SV > LV dilation and hypertrophy</p>	<p>Calcification > decrease surface area > increase pressure against resistance > LA hypertrophy</p>	<p>Volume overload due to regurg of blood to left atrium</p>

<p>+fixed CO on exercise mainly</p>		<p>and AFib , increase pulmonary pressure</p>	
<p>Dyspnea , angina , pulmonary edema , sudden death</p>	<p>Mild : asymptomatic Severe : HF , angina</p>	<p>Dyspnea , Rt sided HF , hemoptysis , AFib</p> <p>Loud S1 , mid diastolic murmur , opening snap = diagnostic</p> <p>Pulmonary HTN</p>	
<p>ECG : LVH strain V2: large S V6 : large R , and T inversion CXR : normal heart size , dilated ascending aorta</p>	<p>ECG : LVH strain V2: large S V6 : large R , and T inversion CXR : cardiomegaly , dilated ascending aorta</p>	<p>ECG AFib , Lead 2 : large p wave V1: inverted p wave CXR : Cardiomegaly , enlargement of left atrium and pulmonary artery</p>	<p>ECG LAH LVH CXR Cardiomegaly , enlargement of left atrium and pulmonary artery Signs of pulmonary HTN</p>

Signs of pulmonary HTN

**Surgical indications
By ECHO**

Mean gradient (most important)

>45

Aortic valve area <1

Aortic valve area (cm ²)	Mean gradient (mmhg)	severity
>1.5	<25	mild
1-1.5	25-45	moderate
<1	>45	severe
<0.7	>70	critical

Symptomatic enlarged heart

progressive ECG changes ,

Asymptomatic with EF <50

Asymptomatic with normal function but with dilatation end diastolic dimension >75mm , end systolic dimension >55 mm

Mitral valve cross sectional area < 1 cm²

Symptomatic with peripheral emboli

ACUTE MR with CHF or cardiogenic shock

Acute endocarditis

Systemic emboli

Class 3, 4 symptoms (symptomatic at rest or w/minimal activity)

-Medical treatment
-Surgical treatment

Valve replacement
1-mechanical valve

Better durability , need warfarin

-Medical treatment
-Surgical treatment

Valve repair

Age < 65

2- bioprosthetic valve

less durability , no need for warfarin

Preferred in :

Age >65 , life expectancy <10 y , pt with warfarin contraindications , women in childbearing age

- human tissue valve : allograft , homograft
- animal tissue valve : procaine endocardium , bovine pericardium

Treated with glutaraldehyde

Annulus reduction : Most common

LEVEL	MANEUVER
ANNULUS	REDUCTION
LEAFLETS	RESECTION ENLARGEMENT
CHORDS	RESECTION SHORTENING TRANSPOSITION REPLACEMENT
COMMISSURES	SPLITTING RESECTION
PAPPILARY MUSCLES	SPLITTING SHORTENING REPOSITIONING

Open via sternotomy or percutaneous valve replacement (TAVI) using **transfemoral (M.C)** , transapical or transaortic rout .

Percutaneous mitral balloon valvuloplasty

-bridge before surgery

-indications

- CHF not responding to medical treatment
- Asymptomatic pt with PA systolic pressure >50

Good luck