

Valvular Disorders

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Acquired valvular dysfunction

- Aortic Stenosis (most common)
- Mitral Stenosis (2nd most common)
 - ◆ Mitral Regurgitation
 - ◆ Aortic Regurgitation
 - ◆ Mitral Prolapse

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Valvular Heart Question

- All untreated valvular leisons eventually lead to what common medical condition????

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Answer

- Congestive Heart Failure

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Mitral Stenosis (MS)

- Thickened & rigid valve leaflets & chordae tendinae
- "Fish mouth" deformity
- Hypertrophied & dilated LA
- Mural thrombi
- Congestion of lungs

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Mitral Stenosis Key Features

- Dyspnea on exertion (DOE)
- Orthopnea
- Fatigue & weakness (r/t ↓ LV output)
- Paroxysmal nocturnal dyspnea (PND)
- Hemoptysis
- Hepatomegaly

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MS Key Features

- Neck vein distention
- Pitting edema
- Atrial Fibrillation (75% of pts)
- Rumbling, apical diastolic murmur

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MS etiology

- Rheumatic fever

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Surgical options

- Balloon valvuloplasty
- Mitral commissurotomy
- Mitral valve replacement

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Mitral Regurgitation (MR)

- Deformed & retracted valve leaflets
- LV dilation & hypertrophy

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MR Key Features

- Fatigue
- DOE
- Orthopnea
- Palpitations
- A Fib

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MR Key Features

- Neck vein distention
- Pitting edema
- High –pitched holosystolic murmur best heard at cardiac apex & radiates to axilla

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MR causes

- Degenerative causes = Rheumatic heart disease, calcification, Marfan's syndrome
- Infectious disorders = Endocarditis
- Structural disorders = Ruptured chordae, dysfunction of papillary muscle

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Surgical options

- Presence of severe symptoms
- EF < 60%

- Repair
- Replace

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Mitral valve prolapse (MVP)

- Most common valvular disorder in the US, 2.4%
- Genetic = autosomal dominant
- Leaflets displaced superiorly into LA or displaced posteriorly

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MVP

- Hallmark = midsystolic click & late systolic murmur
- Generally benign
 - ◆ If severe can cause MR
 - ◆ Risk factors to develop MR = HTN

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Aortic Stenosis (AS)

- Causes increased pressure load to LV = LV hypertrophy & increased afterload
- Narrowed pulse pressure
- Causes fixed CO

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AS

- Thickened & adhered valve cusps with reduced, rigid valve lumen
- Eventually causes failure & dilation of LV
- Pressure gradient in AS
 - ◆ Mild < 50mm Hg
 - ◆ Moderate 50-75 mm Hg
 - ◆ Severe 75-100 mm Hg

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AS Key Features

- Triad of symptoms
 - ◆ Angina
 - ◆ Syncope
 - ◆ CHF

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AS Key Features

- PND
- Harsh, systolic crescendo-decrescendo murmur

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AS etiology

- Congenital
- Bicuspid valve 1% of US population
- 50% in patients 30-70 years old
- Acquired
- Calcific
- Rheumatic fever

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AS surgical options

- Replacement when “classic triad” of symptoms occur or peak gradient exceeds 60 mm Hg

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Aortic Regurgitation (AR)

- Fibrosis with retraction of valve leaflets
- LV hypertrophy & dilation (due to LV volume overload)

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AR Key Features

- Palpitations
- Dyspnea
- Orthopnea
- PND
- Fatigue
- Angina

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AS Key Features

- Sinus tachycardia
- Blowing, decrescendo diastolic murmur
- Widened pulse pressure

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AR etiology

- Infective endocarditis
- Aortic dissection
- Prosthetic valve dysfunction
- Systemic hypertension
- Trauma

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AR surgical options

- Before LV dysfunction occurs (EF < 60%)
- Valve = repair or replace

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Valvular heart surgery

- Goal
- Relieve symptoms
- Restore normal hemodynamics

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