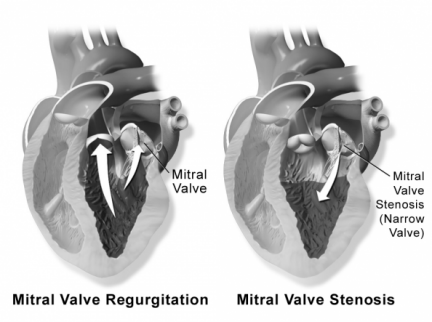
Valvular Heart Disease

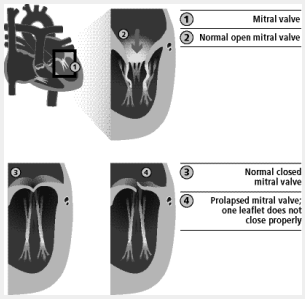
Mitral Stenosis	Aortic Stenosis
Mitral Regurgitation	Aortic Regurgitation
Mitral Prolapse	

* Hear murmurs!
Stenosis: valve doesn't open all the way, not enough blood passes through
Regurgitation: valve dosn't close all the way so blood leaks backward

Mitral Valve Disease

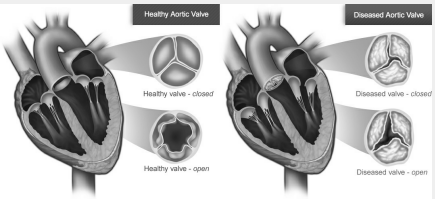


Mitral Valve Prolapse

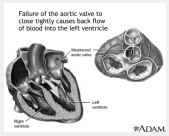


First Symptom: pts often SOB

Aortic Stenosis



Aortic Regurgitation



Pharmacological Interventions

Cardiac Glygosides

Beta-Blockers

Calcium Channel Blockers

Anti-Coagulants

Antibiotics

Surgical Management

Baloon Valvuloplasty: *repair of cardiac valve; open heart; no long-term anti-coagulation therapy*

Direct or Open Commissurotomy: *cut leaflets apart if fused together*

Mitral Annuloplasty: *fix valve (e.g. regurgitation) so blood moving in the right direction*

Replacement Procedures

Valve Types

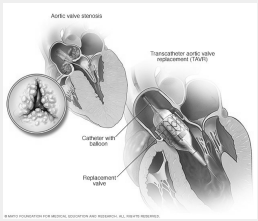
Pt must be aware of the type!
Ball valve: *more durable than tissue valve*
Mechanical valve: *inc. clot risk → lifelong Coumadin; used w/ younger pts b/c it lasts longer*
Tissue valve: *inc. infection risk → prophylactic antibiotics for invasive procedures*
Porcine = pig / *Bovine* = cow
Homographs = cadaver/organ donor

Analysis

Activity Intolerance *(original intent is r/t cardiac issues (CV))*

Dec. CO

Transaortic Valve Replacement (TAVR)



Layers of the Heart Wall

Inflammatory Diseases

Myocarditis	Rheumatic Carditis
Endocarditis	Pericarditis
Cardiomyopathy	

Myocarditis

Myocarditis: *inflammation of the heart muscle*

Usually also have pericarditis

Symptoms: *fever, tachycardic (out of proportion for fever), c/o HA, fatigue, flu-like symptoms*

HF w/ severe myocarditis

Treatment: *largely supportive, treat symptoms*

Rheumatic Carditis

Endocarditis, myocarditis, pericarditis, pancarditis

Associated w/ upper resp. *Strep.* infection
- 40% of people w/ Strep = rheumatic carditis

Most of damage done to endocardium - damages valves

Assessment: *tachypnea, cardiomegaly (CXR), murmurs, pericardial friction rub, prolonged PR interval*

Treatment: + *Strep.* = *rheumatic heart disease → treat infecton & control symptoms*

Endocarditis

Infective Endocarditis: *microbial infection of endocardium*

Common in IV drug abusers, valve replacement, DM, immunosuppressed, burns

Vegetative lesions form

Assessment: *sunconjunctival hemorrhages, varying murmurs, conduction disorders, hematuria, Osler's nodes, petechial rash, cerebral emboli, Roth's spots in fundi, petechial hemorrhages on mucus membranes & fundi, poor dentition, splenomegaly, systemic emboli, digital clubbing, splinter hemorrheages, loss of (distal) pulses*

Treatment

Pericarditis

Usually caused by viruses (also bacteria, MI, radiation)

Acute: *fever, leukocytosis, ST segment change*
Chronic: *signs & symptoms of R-sided HF*

Assessment: *leaning on table (taking pressure off sac removes pain*

Treatment: *NSAIDs* (dec. inflammation), *steroids* (if NSAIDs don't work), *antibiotics* (if caused by bacteria)

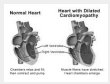
Cardiomyopathy

Heart muscle disease (usually unknown cause)

Classified in **3 Categories**:
- *Dilated*
- *Restrictive*
- *Hypertrophic*

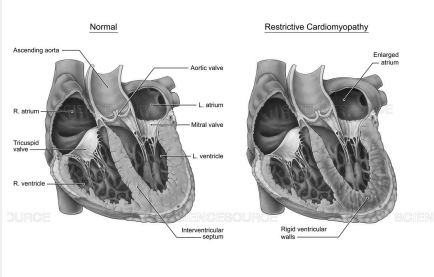
Treatment:
- *Medical*: diuresis, digoxin
- *Surgical*: ventricular septal myomectomy (remove septum = 1 ventricle), heart transplant (palliative treatment until then)

Dilated Cardiomyopathy



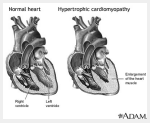
Symptoms: *dyspnea, fatigues, signs & symptoms of HF*
Expanded damage to fibers
Expanded ventricles
EF < 49%

Restrictive Cardiomyopathy



Less common
Something restricts filling of ventricles, walls become stiff but not necessarily thickened

Hypertrophic Cardiomyopathy



Symptoms: *palpitations, dyspnea on exertion*
Massive hypertrophy of ventricle

Heart Transplantation

1967 in South Afica by Dr. Chrisitan Barnard

Completed heart transplants

Survival rates

Cause of death

Criteria

Procedure

Ventricular assist devices

→ L. VAD?