

# Lecture -14-

## Valvular Disease Of The Heart

:by

Assistant lecturers

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## **Definition:**

- The function of normal heart valves is to maintain the forward flow of blood from the atria to the ventricles and from the ventricles to the great vessels.
- Valvular damage may interfere with valvular function by stenosis or by impaired closure that allows backward leakage of blood (**valvular insufficiency, regurgitation, or incompetence**).

# Valvular Disorders

- Mitral stenosis
- Mitral regurgitation
- Mitral valve prolapse
- Aortic stenosis
- Aortic regurgitation

# STENOSIS

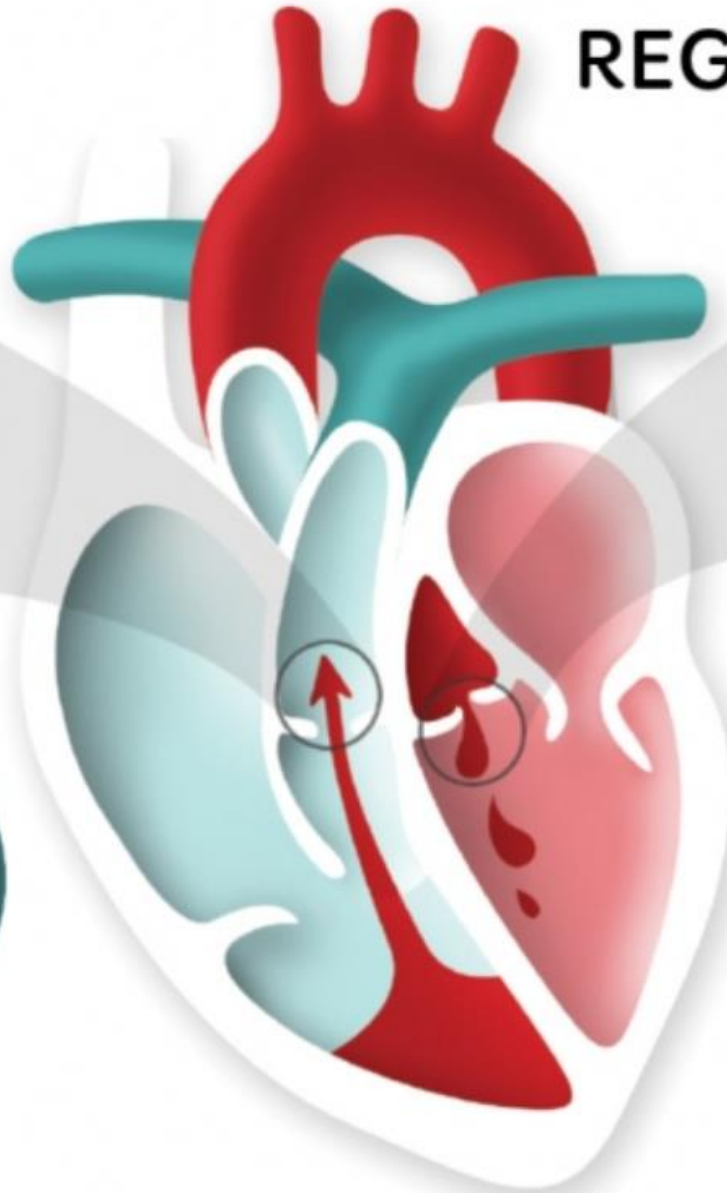
# REGURGITATION



DOESN'T OPEN PROPERLY



NORMALLY OPEN



DOESN'T CLOSE PROPERLY



NORMALLY CLOSED

# Mitral Stenosis

- **Most common cause: rheumatic fever**
- Results from rheumatic carditis
- Causing valve thickening by fibrosis and calcification
- **Non-rheumatic causes**
- Atrial tumor
- Calcium accumulation

- **Diagnosics**
- Echocardiogram
- Chest X ray
- EKG
- Cardiac catheterization

# Clinical Manifestations

## Mild stenosis

- Asymptomatic
- Beginning
- Dyspnea on exertion (DOE)
- Orthopnea
- Paroxysmal nocturnal dyspnea (PND)
- Dry cough

## Later

- **Hemoptysis**(Cough with Blood)
- Pulmonary edema
- Right-sided heart failure
- Hepatomegaly (Enlargement of the liver)
- Neck vein distention (JVD)
- Pitting edema
- Apical diastolic murmur

# Mitral Regurgitation

- Mitral Regurgitation (Insufficiency)
- Fibrotic and calcific changes prevent the mitral valve from closing completely during systole.
- End result left atrial and ventricular dilation and hypertrophy.
- **Causes**
- Rheumatic heart disease
- Degenerative calcification
- Left ventricular hypertrophy
- MI
- Congenital defects



# Clinical Manifestations

- Progresses slowly
- Asymptomatic for decades
- Chief complaints
- Fatigue
- Chronic weakness
- DOE
- Orthopnea
- Normal blood pressure
- Atrial fibrillation (75% of all clients).
- Changes in respiratory patterns
- High pitched systolic murmur at apex
- Third heart sound (S3 or S4)

# Surgical management

- Valve replacements
- Prosthetic
- Biologic
- Surgical repairs
- Balloon valvuloplasty –cath lab
- Reconstructive or “Valvuloplasty”:
  - a. Open commissurotomy
  - b. Annuloplasty repairs

- **Pre-Operative Care**
- Similar to CABG surgery
- Pain
- Incisional care
- Prevent pulmonary complications
- STOP oral anticoagulants  
72 hours before procedure
- **Post-Operative Care**
- Respiratory care
- Monitor for hemorrhage
- Cardiac output reduction
- Discharge teaching

# Complications

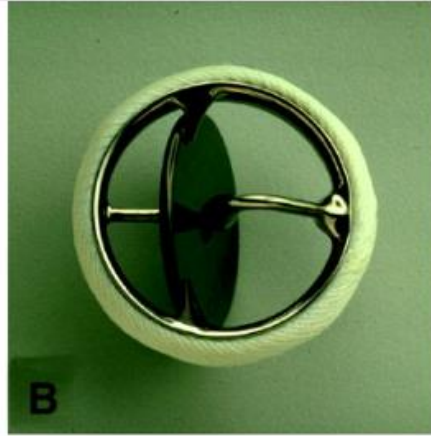
- Fluid & Electrolyte imbalances
- Hypotension
- Bleeding
- Cardiac tamponade
- Altered cerebral perfusion
- Hypothermia
- Hypertension
- Infection

# Client Education

- Disease process
- Medications
- Anticoagulants
- Prophylactic antibiotics
- Rest and activity plan



A



B



C



D



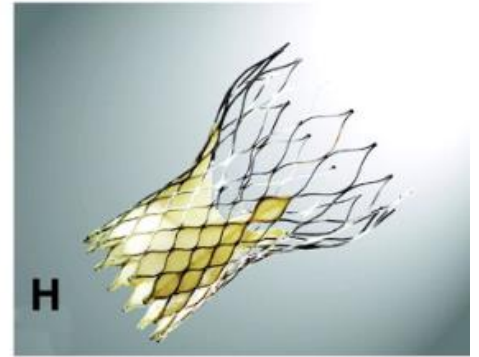
E



F



G



H



AHA Journals



# Prosthetic Heart Valves |



