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## Lecture 8

### ✓ RHEUMATIC HEART DISEASE

Rheumatic heart disease (RHD) is the cardiac manifestation of acute rheumatic fever (ARF) – an immune-mediated multisystem inflammatory disease that follows Group A  $\beta$ -hemolytic streptococcal infection (mostly pharyngitis).

### PATHOGENESIS

- Caused by autoantibodies & T-cells that react against Group A strep cell wall antigens and cross-react with cardiac tissues (molecular mimicry).
- Leads to valvular inflammation → chronic scarring.
- Most affected age group: children.
- Risk factors: poverty, overcrowding, poor access to healthcare.

### MORPHOLOGY

#### Acute Rheumatic Valvulitis

- Lymphocytic infiltration
- Aschoff bodies: nodules with giant cells, macrophages, lymphocytes.
- Anitschkow cells: plump macrophages with “caterpillar-like” chromatin.
- Fibrinoid necrosis + fibrin deposition along valve closure lines → verrucae (1–2 mm vegetations).
- Pericardium: fibrinous pericarditis (“bread and butter”), usually resolves.

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### Chronic Rheumatic Valvulitis

- Valvular fibrosis
- Neovascularization
- Dystrophic calcification
- Leads to scarring → MITRAL STENOSIS (RHD is the ONLY significant cause of acquired MS).

### Signs of Carditis:

- Pericardial friction rub
- Arrhythmias
- Myocarditis → cardiac dilation → functional mitral regurgitation & CHF.
- Erythema marginatum
- Neurological signs (Sydenham chorea)

### LAB INVESTIGATIONS

- ↑ ESR, ↑ CRP (inflammatory markers)
- ↑ Anti-streptolysin O (ASO) or Anti-DNase B antibodies
- Throat culture usually negative at symptom onset

### TREATMENT

1. Management of the acute attack
2. Management of current infection
  - Penicillin is the most commonly used antibiotic
3. Prevention of recurrence

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### 1. Acute vs Chronic Rheumatic Valvulitis

Chronic	Acute	Feature
Minimal active inflammation	Lymphocytes, Aschoff bodies	Inflammation
Fibroblasts	Anitschkow cells	Cells
None	Fibrinoid necrosis	Necrosis
Fibrotic thickened valve	Small verrucae	Vegetations
Permanent deformity → stenosis	Temporary dysfunction	Structural result
Neovascularization	-	Vascular changes
Common	Rare	Calcification

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إني كنت من الظالمين