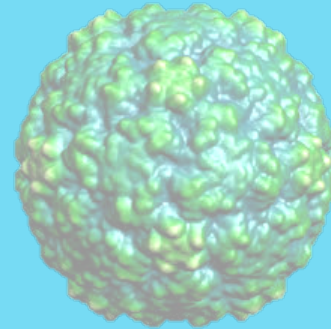
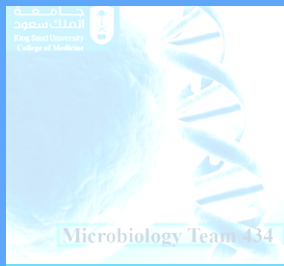


# *Myocarditis & Pericarditis*

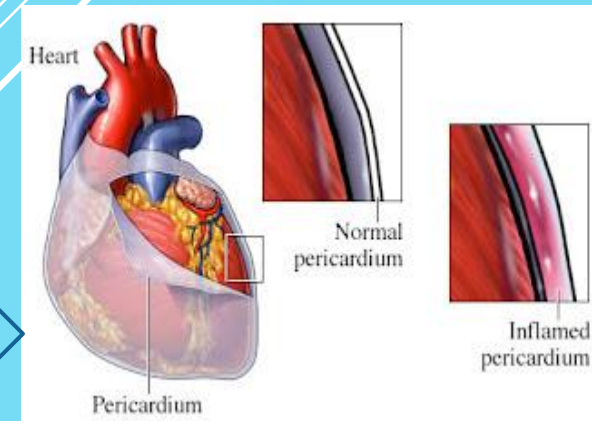
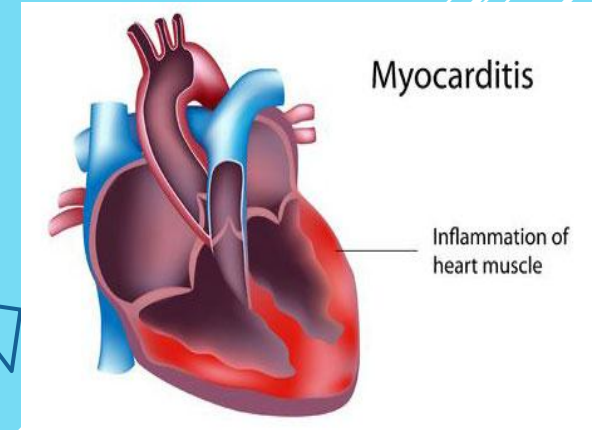
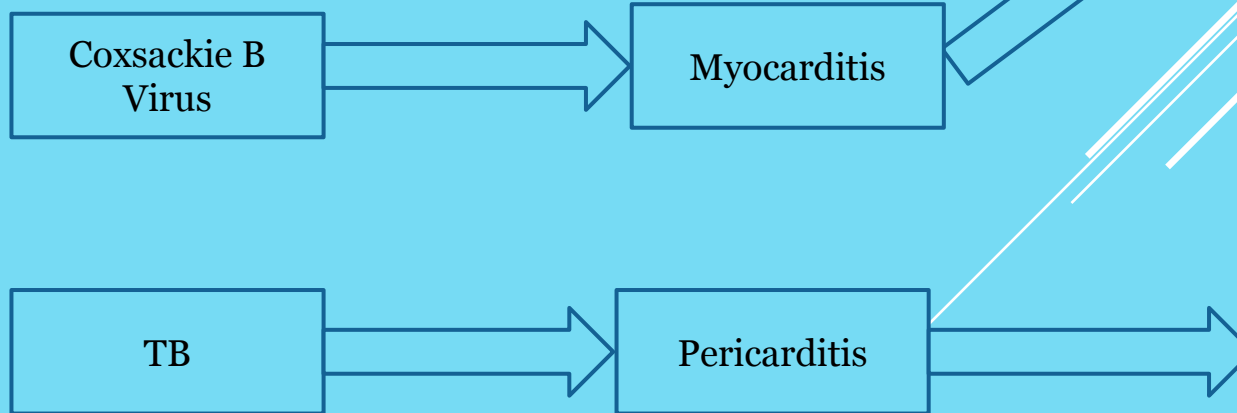


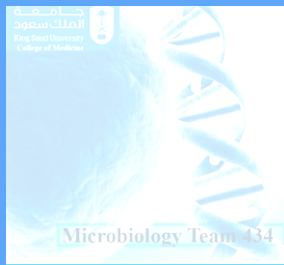
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# Introduction

- Myocarditis is usually a **viral** infection, especially **coxsackie B virus**.
- Pericarditis is mostly caused by **TB Pericarditis**.





## Clinical presentation:

- It varies from mild to severe
- Mild like any viral infection symptoms such as fever, headache ,sore throat ,and rashes
- Severe symptoms such as palpitations and arrhythmia.

## Diagnosis:

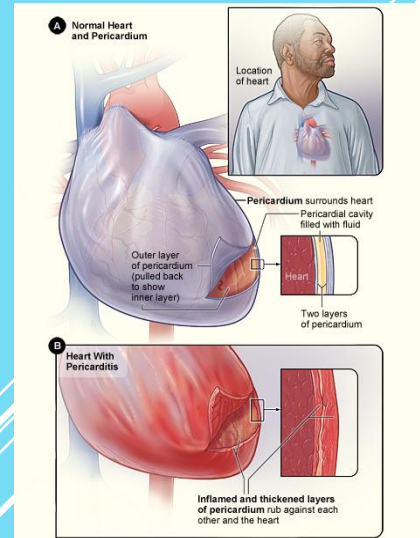
- WBC count ,ESR ,and biochemistry assays (troponin)
- Blood culture
- Viral serology (PCR)
- Radiology and MRI
- ECG will show ST elevation
- Heart muscle biopsy in severe cases

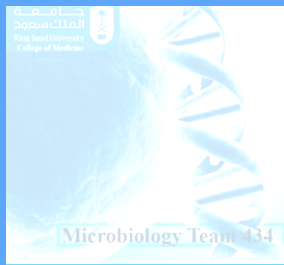


# Acute Pericarditis

- ❖ **Pericarditis is an inflammation of the pericardium, usually of infectious etiology.**
  - etiology: - viral : Coxsackie A & B. - Bacterial: TB
  - Pathophysiology: Inflammation → fibrinous exudate → pericardium becomes a dull, opaque, and sandy sac → adhesion and fibrosis formation.
  - spreads by :
    - Contiguous spread( from nearby organs like the lung).
    - Hematogenous spread( viremia or bacteremia ).
    - Lymphangitic spread.
    - Direct ( in case of trauma or surgery where direct exposure of the pathogen occurs ).

**note:in TB it can spread contiguously by the the lung or hematogenously when miliary TB is developed**



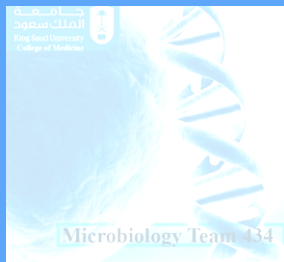


## Types of pericarditis (according to the type of infection) :

- 1) **Caseous pericarditis** (Tuberculosis).
- 2) **Serous pericarditis**: by autoimmune disease (rheumatoid arthritis, SLE).
- 3) **Fibrous pericarditis**: chronic pericarditis happens after long time of inflammation due to TB or fungal infection.

## Types of effusive fluid :

- 1) **Serous** : transudative – heart failure.
- 2) **Suppurative**: pyogenic infection with cellular debris and large number of leukocytes.
- 3) **Hemorrhagic** (not specific): occurs with any type of pericarditis especially with infections and malignancies.
- 4) **Serosanguinous**



# Constrictive pericarditis

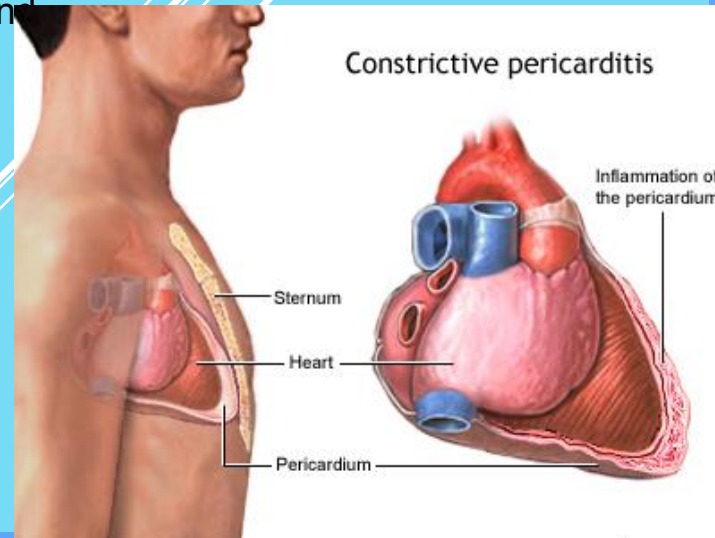
Etiology: Bacterial (TB) or Idiopathic

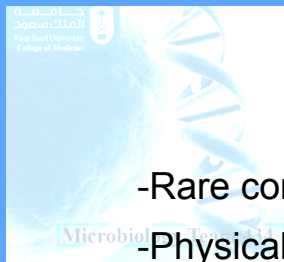
Clinical presentation:

1. Chest pain(sharp pain)
2. Friction rub “audible medical sign. this sign is recognized by an extra heart sound, one systolic and two diastolic.” \*a heart sound described as grating, scratching, or rasping
3. Fever
4. TB symptoms (weight loss, night sweating...)



Helpful video



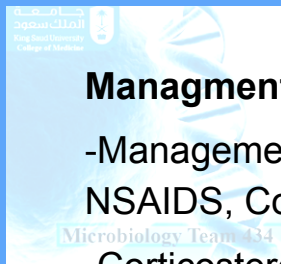


# Tuberculous Pericarditis

- Rare complication of pulmonary tb (1-8%)
- Physical signs : fever, pericardial friction rub, hepatomegaly(enlarged liver)
- TB skin test usually positive
- Fluid smear for TB often negative
- Pericardial biopsy and culture is more definitive

## Diagnosis:-

- ECG will show ST segment elevation, PR depression and T-wave inversion may occur later.
- Leukocytosis and an elevated ESR are typical
- Other routine testing urea and creatine.
- Blood culture
- PPD(purified protein derivative) skin test is usually positive in tuberculous Pericarditis.
- false positive is a common result in ppd tests in saudi arabia due to bcg vaccination.
- interferon test is a more specific test than ppd.
- Chest x-ray may show enlarged cardiac shadow or calcified pericardium and CT scan show pericardial thickening >5mm.
- Pericardial fluid or pericardial biopsy specimens for fungi, antinuclear antibody tests and histoplasmosis.



## Management:

- Management is largely supportive for cases of idiopathic and viral Pericarditis including bed rest and NSAIDs, Colchicine.
- Corticosteroid is controversial and anticoagulants usually contraindicated.
- Specific antibiotics must include activity against *S. aureus* and respiratory bacteria.
- Antiviral
  - Acyclovir for herpes simplex or ganciclovir for CMV etc.
- Pericardiocentesis to relieve tamponade.
- Patients who recovered should be observed for recurrence.
- Symptoms due to viral Pericarditis usually subside within 1 month.
- Uremic, rheumatic, collagen in 30% of patients include pericardial effusion and tamponade, constrictive Pericarditis and pleural effusion.
- Restrictive Pericarditis and heart failure.





# MCQ'S

1. A type of pericarditis that's known for sharp chest pains.

- A. TB Pericarditis
- B. Constrictive Pericarditis
- C. Fibrous Pericarditis

2. Myocarditis is usually caused by?

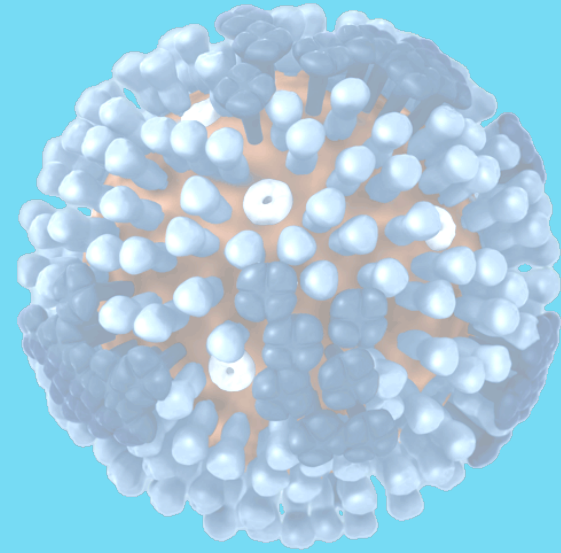
- A. Coxsackie A
- B. Coxsackie B
- C. TB
- D. Strep. Pyogene

3. A good diagnostic tool for pericarditis would be?

- A. ST depression
- B. T elevation
- C. ST elevation

4. Type of Pericardial fluid indicating Pyogenic infection, debris, and leukocytes

- A. Hemorrhagic
- B. Serous
- C. Suppurative



# *Thank you*

Done by: microbiology team

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