Project: Ghana Emergency Medicine Collaborative

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Case Presentation - Pericarditis

Kwaku Nyame

History

- 38 year old female, presented to A&E with a compliant of
- Chest pain – 1 week
- Worsening Difficulty in breathing – 1 week

- What other things will you want to find out and why

History

- Told had a heart condition 3yrs ago, given medication but now not on any medication
- Currently not on any medication

Physical Exams

- Warm to touch, temp 38.1 ° c, obesed
- HR – 112bpm, Regular,
- BP – 100/68 mmHg
- AB – 5th LICSMCL
- JVP – not raised, neck veins, not distended
- There is a murmur

Physical Exam ctd

- RR 38cpm, FAN+, ICR+
- SPO_2 off oxygen – 94%
- Chest is clear
- Abd, NAD
- CNS - Intact

DDx

- AMI
- PE
- Aortic dissection
- Pneumonia
- Pneumothrax
- Acute pericarditis
- costochondritis

Investigations

- Cardiac Enzymes –
- ECG –
- CBC
- RFT
- Bedside USG
- Echocardiography
- CXR

Acute Pericarditis

- Acute pericarditis is more common in young adults (typically between 20 to 50 years old) and in men.
- The true incidence and prevalence unknown
- However, it may account for up to 5% of presentations to emergency departments for chest pain and up to 0.1% of hospital admissions.

Acute Pericarditis - Etiology

- Idiopathic
- Viral Infections
- Pyogenic Infections
- Tuberculosis Infections
- Systemic autoimmune dx – RH, Systemic lupus, reiters syn
- Metabolic - uremia, severe hypothyroidism
- Post MI – Dresslers' syndrome
- Procedures – radiotherapy, percutanuos cardiac interventions
- Drugs – Hydralazine, phenytoin, procainamide

Classification

- **Clinical classification**
- Pericarditis can be classified by duration of inflammation as well as by etiology.
- A. Acute pericarditis (<6-week duration)
- Fibrinous
- Effusive (serous or serosanguineous)
- B. Subacute pericarditis (6-week to 6-month duration)
- Effusive-constrictive (characterized by the combination of tense effusion in the pericardial space and constriction by the thickened pericardium)
- Constrictive

Classification

- C. Chronic pericarditis (>6-month duration)
- Constrictive
- Effusive
- Adhesive (nonconstrictive)
- D. Recurrent pericarditis
- Intermittent type (symptom-free intervals without therapy)
- Incessant type (relapse occurs with discontinuation of anti-inflammatory therapy).

Signs and Symptoms

- Chest Pain - SOCRATES
- Myalgia
- Fever
- Hiccups
- Pericardial Rub – in 85% of patients(100% specific)
- Signs of right heart failure with normal ejection fraction
- Presence or absence of effusion

Test to order

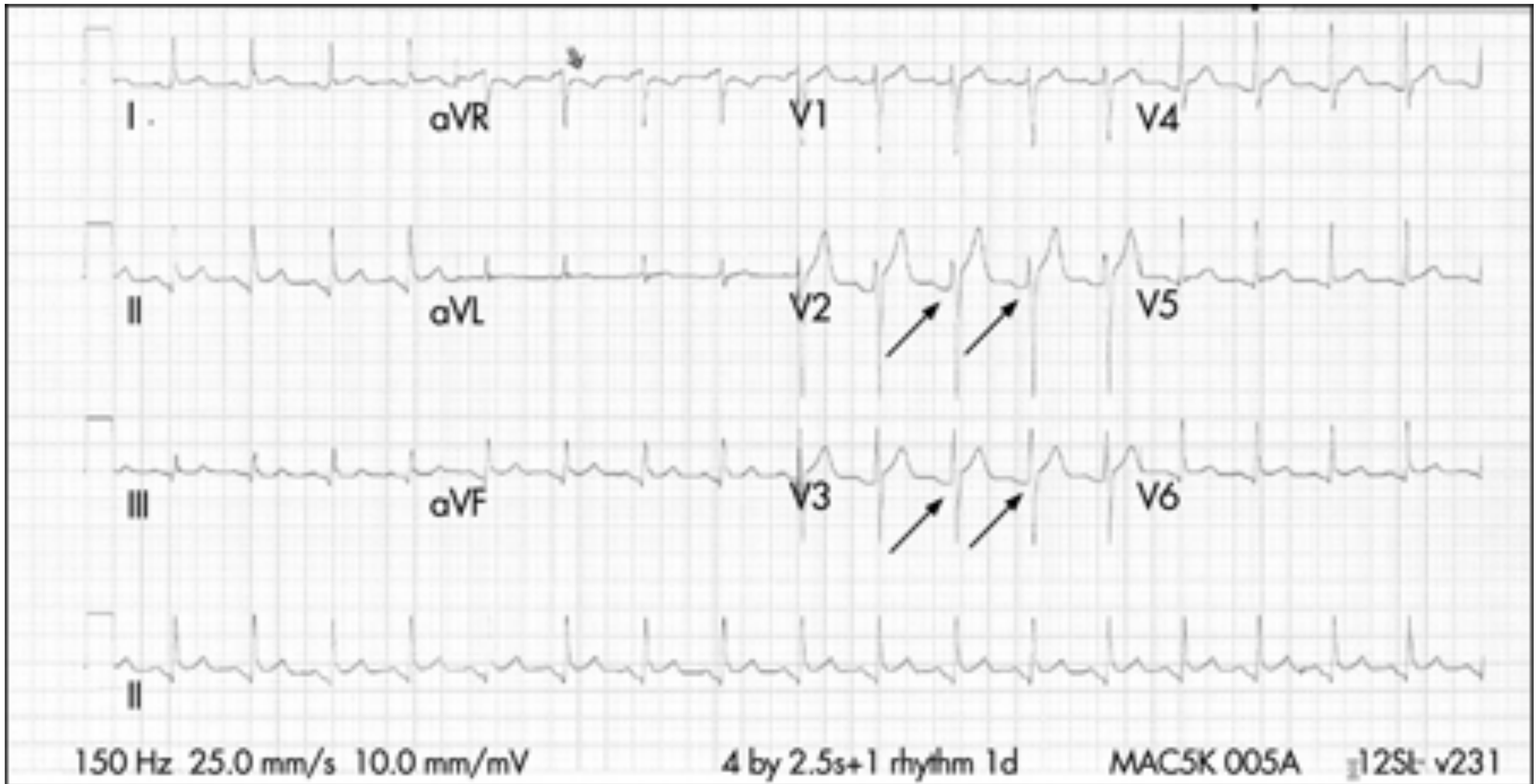
- ECG -upward concave ST-segment elevation globally with PR depressions
- serum troponin- mildly elevated
- ESR - may be elevated
- C-reactive protein - may be elevated
- BUN elevated >60 mg/dL in renal failure
- CBC - elevated white blood cells

Test to order, ECG findings

- Serial ECG may be diagnostic
- Stage I
- Stage II
- Stage III
- Stage IV

- ST amplitude / T amplitude > 0.25 high index of suspecion for pericarditis (85% sensitivity and 80% specificity)

ECG



PD-INEL Source Undetermined

Test to order

- Chest x-ray - normal or water-bottle-shaped enlarged cardiac silhouette
- Echocardiography - may show a pericardial effusion; absence of LV wall motion abnormalities,
- Chest CT pericardial effusion or constrictive pericarditis
- Pericardiocentesis/biopsy - acid-fast bacilli, positive culture of *Mycobacterium tuberculosis*

Treatment

- ABC IV O_2, Monitor
- Directed at any identified underlying disorder
- Supportive management directed at relief of symptoms.
- Hospitalization is generally recommended to determine etiology, observe for complications such as cardiac tamponade, and gauge response to therapy.

Treatment

- NSAIDs, Ibuprofen preferred, Aspirin preferred for post MI pericarditis for 4 weeks
- PPIs
- Limit exercise till chest pain resolves
- If after 2 wks, pain persist, add colchicine for 3 month
- If pain still persist, add systemic steroids
- Recurrent non-purulent disease, consider azathioprine

Complications- Pericadial Effusion

Empirical Estimates

0.5- 0.8 cm	200mls
0.9 – 1.4cm	300 – 500ml
1.5 – 1.8cm	600 – 1000mls

If pyogenic cause of effusion suspected, drain the effusion and treat underlying infection. Ie antibiotics or anti-TB

Complications – Constrictive Pericarditis

- Similar to Right sided heart failure, restrictive cardiomyopathy
- Signs – elevated JVP with rapid y deecnt, kussmaul sign, pericardial knock, ascitis, dependent edema and hepatomegaly
- ECG – low voltage, inverted t wave, no classic finding
- Radiograph - pericardial thickening + calcicication
- Rx - Pericardioectomy

Complications- Cardiac Tamponade

- Dyspnea, profound exertional intolerance with symptoms of underlying cause
- Exam – Tachycardia, low systolic BP with narrow pulse pressure, Distended neck viens with absent y decent, Pulsus paradoxus , distant or soft heart sounds, right upper quadrant abd pain
- CXR – may be normal, an epicardial fat-pad sign (15%)
- ECG – low voltages, electric alternans
- ECHO – diagnostic tool of choice
- Rx- Iv fluids, Pericardiocentesis with insertion of pigtail catheter , Rx of underlying cause

Ref

- Emergency Medicine, A comprehensive Study Guide
- Principles of Medicine in Africa
- www.online.epocrates.com