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Make Your Own Assessment

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Case Presentation - Pericarditis

Kwaku Nyame
History

- 38 year old female, presented to A&E with a complaint 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+
- SPO₂ off oxygen – 94%
- Chest is clear
- Abd, NAD
- CNS - Intact
DDx

- AMI
- PE
- Aortic dissection
- Pneumonia
- Pneumothorax
- 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, percutaneous 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 suspicion for pericarditis (85% sensitivity and 80% specificity)
ECG
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 \hspace{1cm} 200mls

0.9 – 1.4cm \hspace{1cm} 300 – 500ml

1.5 – 1.8cm \hspace{1cm} 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 descent, kussmaul sign, pericardial knock, ascitis, dependent edema and hepatomegaly
- ECG – low voltage, inverted t wave, no classic finding
- Radiograph - pericardial thickening + calcification
- 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 veins with absent y descent, 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