



Cardiac Tamponade due to Tuberculous Pericarditis

Amy Mehta, M.D. and Caroline Kim, M.D.

Harbor-UCLA Medical Center



Harbor-UCLA
MEDICAL CENTER

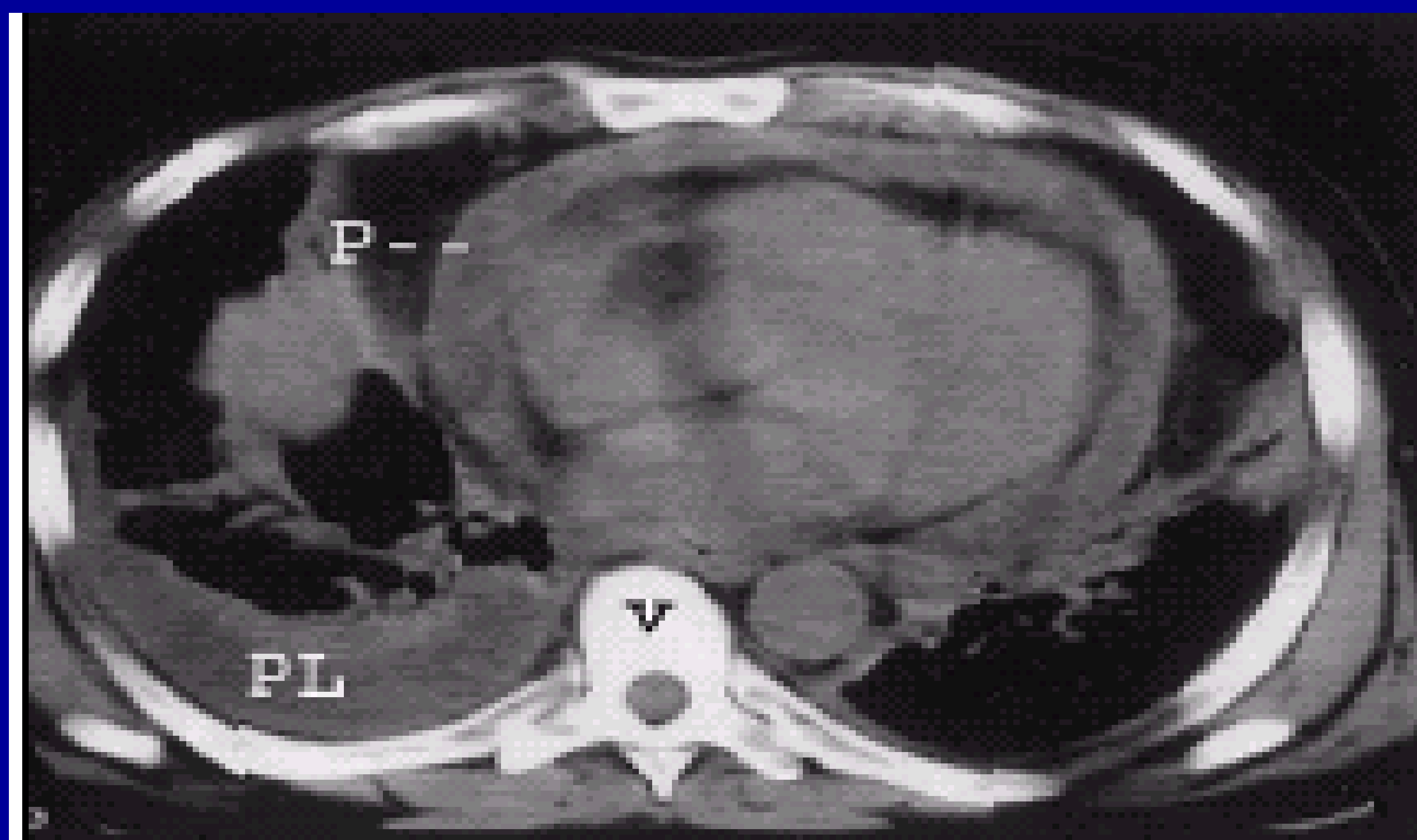
Introduction

- Incidence of tuberculous (TB) pericarditis is common in African and Asian countries
- Increasingly common in other parts of the world as the prevalence of AIDS has risen
- TB pericarditis can be defined as either a pericardial effusion or constrictive pericarditis
- Both are life-threatening forms of extrapulmonary TB

Case Summary

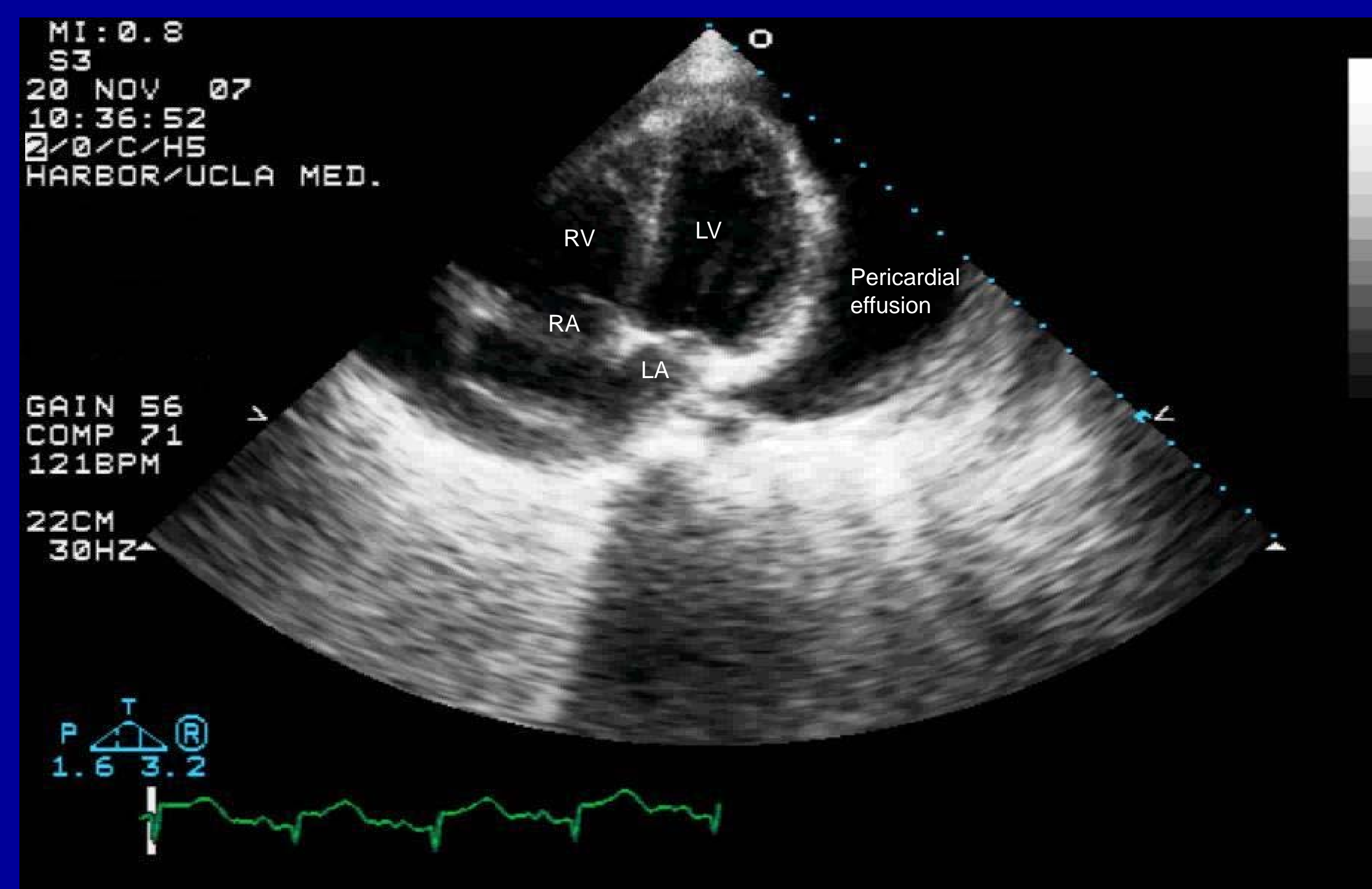
- 28-year-old woman with HIV diagnosed in Cambodia 5 years ago presented to the Emergency Department with a 4-month history of shortness of breath and fever
- No previous therapy for her HIV disease and denied any previous opportunistic infections
- Physical exam:** T = 102.2 HR = 147
 - Lungs:** Decreased breath sounds at right apex
 - Heart:** Tachycardia with regular rhythm
- Sputum samples positive for AFB and RIPE therapy initiated
- On Day #9, worsening tachypnea and tachycardia, along with pleuritic chest pain
- Echocardiogram revealed pericardial effusion with tamponade physiology
- Emergently taken to cardiac catheterization laboratory for pericardiocentesis. 700 cc of serosanguineous fluid drained, which grew *Mycobacterium tuberculosis*
- Echocardiogram repeated one week later revealed constrictive pericarditis and six-week steroid taper was initiated. Subsequent echocardiograms revealed resolution of all signs of constriction.
- Anti-tuberculous therapy was continued and patient improved clinically with resolution of pleuritic chest pain and shortness of breath
- Discharged home with no signs of recurrence of effusion and sputum clearance of AFB

Imaging Studies



Pericardial effusion with thickened pericardium (P) and pleural effusion (PL).
Note: Above CT does not belong to patient described.

- CXR:** RUL consolidation
- CT chest:** Large RUL mass-like lesion with areas of heterogeneous enhancement and extensive mediastinal and supraclavicular lymphadenopathy
- TTE:** Pericardial effusion with tamponade physiology



Discussion

- TB pericarditis remains an important health problem given the serious consequences of untreated infection
- Occurs in 1-2% of patients with pulmonary TB
- Typically presents as a slowly progressing febrile illness, and if it presents as acute pericarditis or cardiac tamponade, the diagnosis is likely to be delayed or missed
- Pericardial infection with *Mycobacterium tuberculosis* may occur via extension of infection from lung or tracheobronchial tree, adjacent lymph nodes, spine, sternum, or via miliary spread
- Important to identify TB as etiology because survival without treatment reported to be as short as 4 months
- Observational studies show more severe cardiac disease in HIV patient demonstrated by ST segment elevations, increased dyspnea, and hemodynamic instability
- Standard management includes anti-tuberculous therapy and pericardiocentesis either under fluoroscopic guidance or using echocardiography
- Excellent prognosis with appropriate medical therapy
- Use of adjuvant corticosteroids to prevent constrictive pericarditis remains controversial

References

- Cherian, G. Diagnosis of tuberculous aetiology in pericardial effusions. *Postgrad Med J* 2004; 80:262-266.
- Desai HN. Tuberculous pericarditis. A review of 100 cases. *S Afr Med J* 1979;55:877-80.
- Jain S, Sharma N, Varma S, *et al.* Profile of cardiac tamponade in the medical emergency ward of a North Indian hospital. *Can J Cardiol* 1999;15:671-5.
- Larrieu, AJ, Tyers, GFO, Williams, EH, Derrick, JR. Recent experience with tuberculous pericarditis. *Ann Thorac Surg* 1980; 29:464.
- Strang JI. Tuberculous pericarditis. *J Infect* 1997;35:215-19.