UTILITY OF CARDIAC MRI IN THE DIAGNOSIS AND MANAGEMENT OF TUBERCULOUS CONSTRICTIVE PERICARDITIS

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Case

- 25 year old South Asian male
- 3 month history of dyspnoea and weight loss
- O/E: BP 96/60
  Raised jugular venous pressure (JVP)
  Bilateral pleural effusion
  Peripheral oedema
- ECG: Sinus tachycardia and global T wave inversion.
- Transthoracic Echocardiogram :
  Dilated atria
  Paradoxical septal movement.
- CT Chest: Bilateral pleural effusions (right > left), small mediastinal lymph nodes (8mm in diameter) and trivial pericardial effusion. No significant pericardial calcification.

Case

- Therapeutic drainage performed

- Positive: T-SPOT.TB test (*Interferon Gamma Release Assay*)

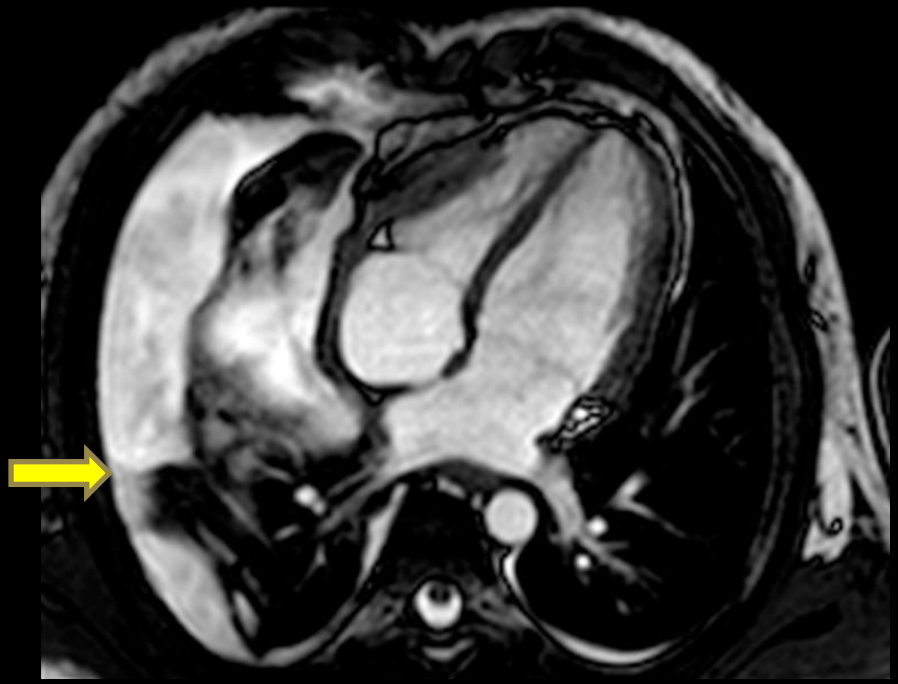
- Negative: Sputum, broncheoalveolar washing, pleural fluid and biopsy for Acid Fast Bacilli (AFB).

- Re-accumulation of pleural effusion.

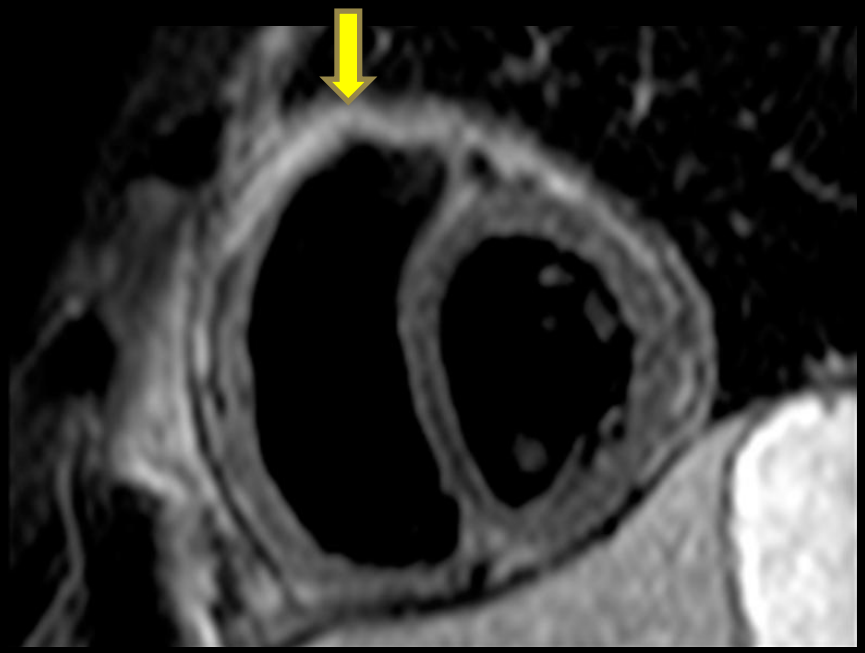
TB Constrictive Pericarditis

CMR was recommended

CMR scan 1

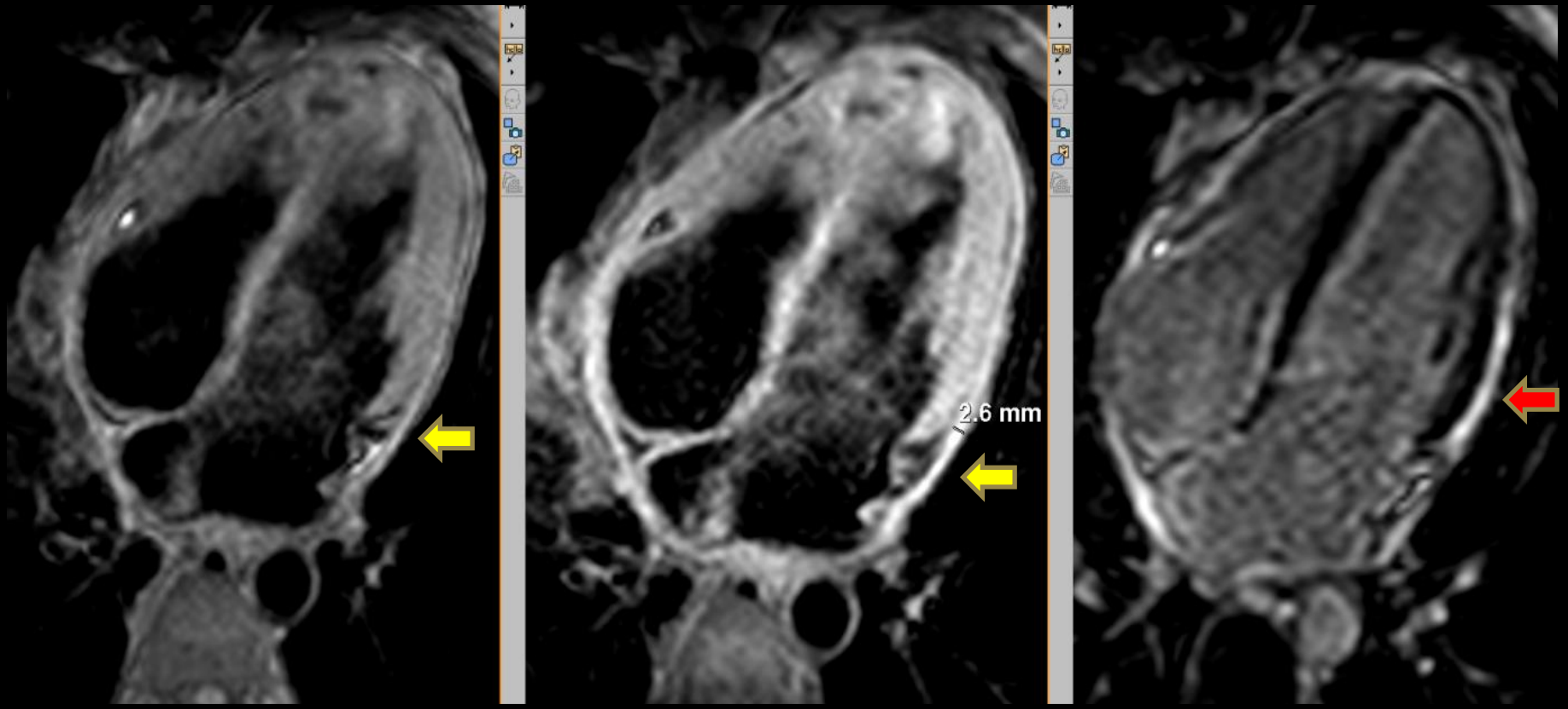


Right Pleural Effusion



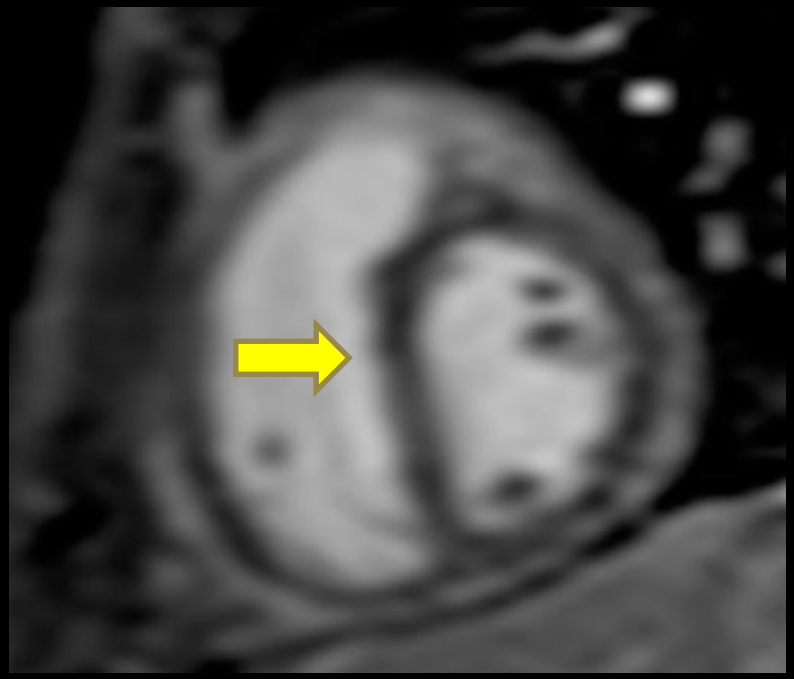
Increased Pericardial Signal (T2-STIR)

Pre and post fat saturation T1 weighted FSE **LGE**



- Pericardial thickening (<4mm)
- Delayed gadolinium imaging (LGE) showed pericardial but no myocardial enhancement

Real-time cine imaging



Septal bounce and
exaggerated ventricular interdependence

CMR Findings

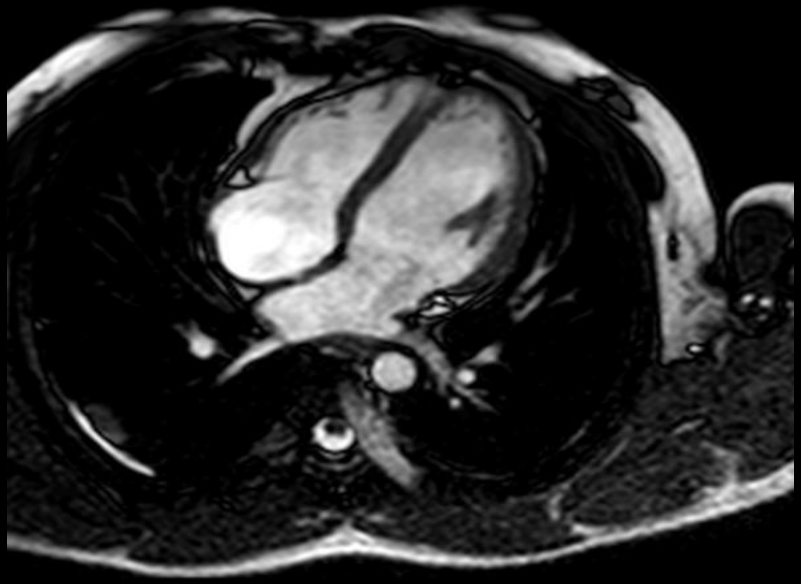
- Consistent with Constrictive Pericarditis .
- TB being the most likely aetiology , given clinical presentation.
- Absence of significant pericardial thickening & calcification – disease process was early.

Trial of conservative treatment was suggested

Constrictive Pericarditis - Management

- Conservative
  - Anti-tuberculous therapy (ATT)
  - Prednisolone – tapering dose
  - Colchicine 500mcg BD PO
  - Close monitoring in CCU
- Regular follow up

Repeat CMR
- 6 months later



- Resolution of pleural effusion

- Reduction in
  - Pericardial thickening
  - Ventricular interdependence
  - Pericardial delayed gadolinium enhancement

Tuberculous Constrictive Pericarditis

- Incidence 1-2% in Pulmonary TB[1]
- May present with signs of right heart failure, as in this case.
- Diagnoses usually relies upon invasive investigations to obtain pericardial tissue or fluid for culture and microscopy (sensitivity ranges 10-64%)

1. Larrieu AJ, Tyers GF, Williams EH, Derrick JR. Recent experience with tuberculous pericarditis. Ann Thorac Surg 1980; 29:464.

Case Summary

- Demonstrates the clinical utility of MRI

  - diagnosing Constrictive Pericarditis.

  - avoiding invasive diagnostic and therapeutic procedures.

  - monitoring the anatomical and physiological effects of the condition.

CMR evaluation of the pericardium should be considered in patients with suspected pericardial disease[2].

2. Maisch B et al. Guidelines on the diagnosis and management of pericardial disease. Eur Heart J 2004; 1-28

Thank you