

ATRIAL TUBERCULOMA

TUBERCULOSIS OF HEART:

- TB pericarditis
- TB myocardium
- TB Endocarditis

Myocardial TB:

- Mode of Spread :
 - Secondary to hematogenous spread from a remote tuberculous focus
 - Lymphatic spread from mediastinal lymph nodes
 - Direct involvement from the adjacent pericardium

Forms of Myocardial TB:

- Three distinct forms:
 1. Miliary type
 2. Diffuse infiltrating
 3. Nodular with central caseation
(Tuberculoma)

CLINICAL SIGNIFICANCE:

- Cardiac tuberculomas may be asymptomatic
- Symptomatic
 1. Pulmonary vein obstruction due to left atrial mass lesion
 2. Left ventricular aneurysm
 3. Right ventricular outflow tract obstruction
 4. SUC or coronary artery occlusion
 5. Impairment of ventricular contractility
 6. Ventricular rupture
 7. Aortic insufficiency
 8. Cardiac arrhythmias and sudden death

Disseminated tuberculosis – diagnostic challenges of atrial tuberculoma masquerading as atrial myxoma

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Abstract

A 47-year-old female, with multiple comorbidities, presented with a cough of two months, loss of weight and appetite. She was treated for pneumonia. A chest X-ray showed bilateral reticulonodular opacities. She was noted to have a vague central abdominal mass and a systolic murmur over the mitral region. Ultrasonography and computed tomography of the abdomen showed an omental mass and loculated ascites. Oesophagoduodenoscopy showed antral gastritis and during colonoscopy the surgical team was unable to advance the scope beyond 40 cm due to external compression. An echocardiogram showed a right atrial mass and a pericardial effusion over the posterior wall. A possible diagnosis of atrial myxoma was made. Sputum acid-fast bacillus was negative. The patient was treated empirically for disseminated tuberculosis and scheduled for bronchoscopy by the pulmonology team.

The patient showed remarkable improvement after day 7 of anti-tuberculosis medication. GeneXpert study came back as positive. CT abdomen and echocardiogram repeated after 2 weeks of treatment showed reduction in the mass.

Keywords: disseminated tuberculosis, right atrial mass

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(*Mycobacterium tuberculosis* detected, rifampicin resistance not detected). Subsequently azithromycin was changed to pyrazinamide (1000 mg three times a week). She was then started on prednisolone 60 mg once daily, which was tapered over 2 months. The dosages of anti-tuberculosis treatment were started based on her body weight on admission which was 33 kg.

The patient showed remarkable improvement after day 7 of the anti-tuberculosis medications. Her fever subsided and she became less tachypnoeic. Bronchial washings grew *Mycobacterium tuberculosis* which was sensitive to all first line anti-tuberculosis medication. Repeat CT abdomen and echocardiogram after 2 weeks showed reduction of mass size. A CT brain to exclude asymptomatic central nervous

involvement showed only small vessel ischaemic disease. A plan for year-long therapy was made, with 10 months of maintenance therapy (HR – isoniazide and rifampicin). The latest echocardiogram showed resolution of the atrial mass and pericardial effusion. CT thorax, abdomen and pelvis showed resolving reticulonodular opacities with septal thickening involving both lungs. The omental mass at the anterior upper abdomen appeared smaller. Currently she is well and her weight has improved significantly.

Discussion

Disseminated tuberculosis is a fatal disease if not diagnosed and treated early. Diagnosing it can be a challenging task. Clinical manifestations are non-specific and often a high

index of suspicion is required to avoid unwarranted invasive investigations.

In this case, typical chest X-ray findings were absent and the sputum was negative for acid-fast bacilli, which created a dilemma when diagnosing tuberculosis. The vague abdominal mass, right atrial mass and poor response on broad spectrum antibiotics did raise the suspicion of tuberculosis. Therefore additional tests including GeneXpert and mycobacterial cultures from bronchial washing were requested; they confirmed the diagnosis of tuberculosis.

Tuberculosis that presents as a cardiac mass is extremely rare. A cardiac mass often masquerades as a thrombus or myxoma. So far, three subtypes of myocardial tuberculosis have been reported, (i) nodular tubercles of myocardium, (ii) military tubercles of myocardium complicating the generalised military disease and (iii) diffuse infiltrative type

which is usually associated with tuberculous pericarditis.^{3,4} Pericarditis is the most common manifestation of cardiac tuberculosis.⁴ Endocarditis caused by tuberculosis can affect any valve, together with military tuberculosis.

Bronchoscopy and a GeneXpert test confirmed the diagnosis of disseminated tuberculosis. A standard anti-tuberculosis therapy with regular follow up successfully treated the patient's condition.

Conclusion

This case illustrates the importance of interventional pulmonology and a high index of suspicion for disseminated tuberculosis, especially as atrial tuberculoma can mimic other diseases such as atrial myxoma. This case reinforces the importance of nucleic acid amplification test in the diagnosis of this potentially fatal disease. ①

CASE REPORT

Open Access

Intracardiac left atrial tuberculoma in an eleven-month-old infant: case report

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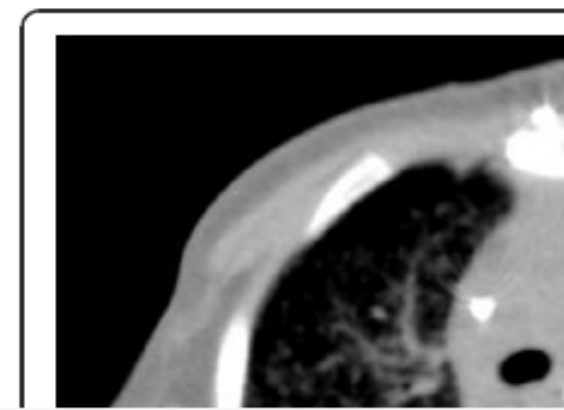
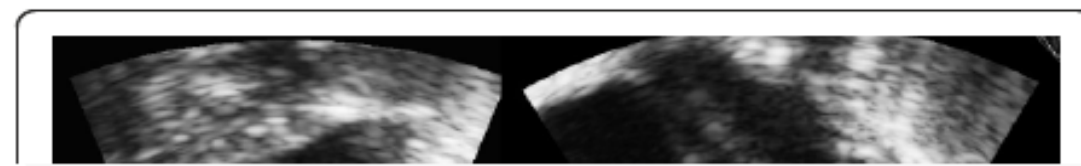
and revealed a voluminous left atrial intracavitary pedunculated mass prolapsing during the diastole from the right lower pulmonary vein into the left ventricle through the mitral valve (Figure 2). No mitral stenosis and only trivial mitral regurgitation were noted. The patient was immediately transferred to the cardio-surgical unit and complete excision of an homogeneous and yellowish in color mass was performed through median sternotomy, under cardiopulmonary bypass. Histopathological examination of the removed mass revealed fibrotic tissue with mixed inflammatory cells and necrotic debris with a vaguely granulomatous appearance and AFBs were found. PCR for *Mycobacterium tuberculosis complex* was positive on the removed mass and on previous gastric aspirates.

recovered completely, and uneventful follow-up.

Discussion

To our knowledge, this is the first case of an endocardial tuberculoma in an infant, successfully treated.

Cardiac TB is a rare disease that can affect other parts of the heart is usually



ATRIAL MYXOMA

Arise mostly from inter-atrial septum but can arise elsewhere

Histology shows abundant myxoid stroma composed of acid mucopolysaccharides and tumor cells that are typically stellate shaped and mildly pleomorphic

Myxomas can be sessile or pedunculated

MRI- Single sequence from cardiac MRI shows the mass to be of intermediate intensity on T1 weighted imaging

ATRIAL TUBERCULOMA

Arise near the vascular orifice but can arise elsewhere

Histology shows central necrotic foci surrounded by mixed inflammatory cells and epithelioid cells with vaguely granulomatous appearance and occasionally AFB's found

Sessile or pedunculated

MRI- tuberculoma is usually isointense to hypointense to myocardium on T1 and T2 weighted images with a heterogeneous late

THANK YOU