

Letter to the Editor

Bi-fascicular block on EKG as the initial presenting sign of cardiac sarcoidosis

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A 41-year-old commercial painter with a history of tobacco use presented to the emergency department with complaints of cough, pleuritic chest pain and worsening dyspnea with exertion beginning 3 days prior to arrival. He had not responded to an outpatient regimen of bronchodilators and antibiotics. The patient denied any constitutional symptoms.

On initial examination, the patient was afebrile with a room air oxygen saturation of 82%. Pulmonary examination revealed tachypnea with accessory muscle use and the presence of dry crackles in the posterior lung bases bilaterally and diffuse expiratory wheezing. Cardiovascular examination revealed mild jugular venous distention suggestive of right-sided heart failure. The rest of the patient's physical exam was normal.

A chest X-ray done did not show any evidence of air-space disease. Electrocardiogram (EKG) revealed sinus tachycardia with a rate of 110 and evidence of right bundle branch block and left anterior fascicular block (Fig. 1a). This was not seen on a prior EKG from 1 year ago. Initial laboratory studies were unrevealing and serial sets of troponin I and CKMB showed no evidence of myocardial necrosis.

The presence of bi-fascicular block on ECG in absence of any signs of myocardial ischemia prompted to consider the diagnosis of infiltrative myocardial disease. A cardiac MRI was obtained. Gadolinium-enhanced cardiac MRI (Fig. 1b) revealed abnormal signals seen in the right ventricular

wall and inferior septum consistent with infiltrative disease and inconsistent with myocardial ischemic injury. Cine motion images demonstrated a septal bounce consistent with right ventricular overload and the pulmonary artery was enlarged indicative of pulmonary arterial hypertension. The left ventricular ejection fraction was within normal limits (>55%). High-resolution chest CT scan (Fig. 1c) revealed extensive fibrosis consistent with advanced stage sarcoidosis and was negative for pulmonary thrombo-embolic or air space disease.

Infiltrative diseases of the myocardium must be considered in the differential diagnosis when patients present with new conduction abnormalities on EKG. Sarcoidosis, amyloidosis, hemochromatosis and lymphoma and are among the most common [1]. Clinical presentation of infiltrative heart disease may vary from asymptomatic conduction abnormalities, severe hemodynamic instability usually due to brady- or tachy-arrhythmias, or sudden death [1–3]. The early identification and treatment of patients is essential to change the natural course of the disease. The recent literature promotes the use of gadolinium-enhanced cardiac MRI as a rapid, high resolution, non-invasive means of detecting myocardial involvement in sarcoidosis [4]. Also, appropriate specific treatment and, potentially, the use of cardiac pacemaker/automatic implantable cardioverter-defibrillators may be useful in the prevention of sudden death in patients at high risk [5].

References

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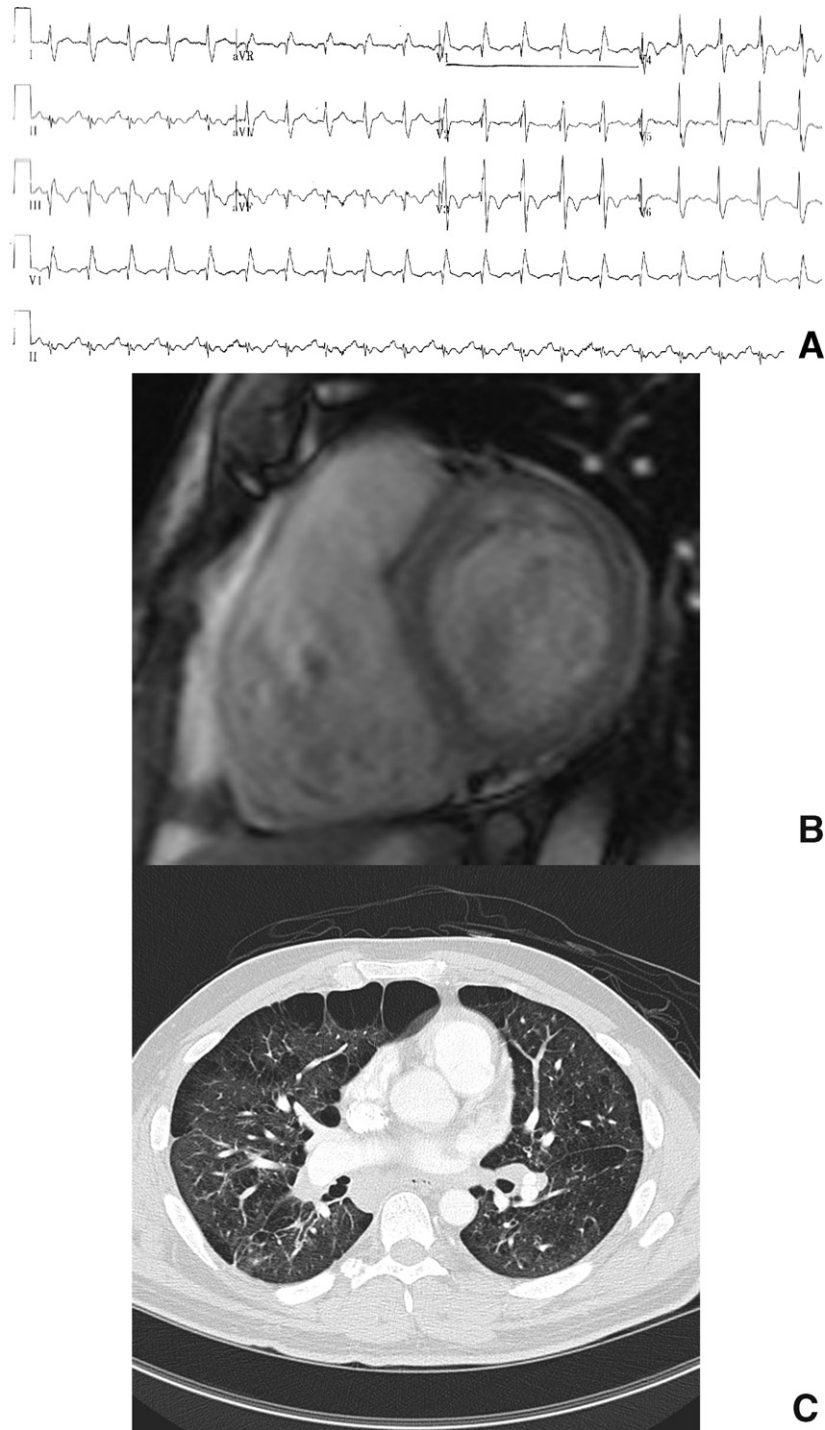


Fig. 1. Panel A shows a 12 lead EKG. There is evidence of Right bundle branch block (RBBB) and Left anterior fascicular block (LAFB). Panel B shows the gadolinium enhanced cardiac MRI image. The arrow indicates abnormal hyperenhancement seen in the inferior septum consistent with myocardial infiltration of sarcoid granulomas. A high-resolution chest CT scan image is shown in panel C. Extensive mediastinal and hilar lymphadenopathy, scarring fibrosis and bronchiectasis consistent with advanced stage pulmonary sarcoidosis is evident.

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