Cardiac FDG/PET imaging mimicking sarcoidosis

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INTRODUCTION

There has been significant interest in the role of imaging in the diagnosis of cardiac sarcoid,[1,2] with FDG/PET imaging a recommended modality. There are however pitfalls.

CASE SUMMARY

64-year-old male presented for investigation of a left ventricular mass in the setting of recent stroke.

Echocardiogram showed an apical mass with impaired distal anterior and apical systolic function and preserved perfusion, secondary to noncompaction. Cardiac MRI showed the mass to have signal characteristics of thrombus (Figure 1) and a small transmural area of delayed myocardial enhancement in the mid-inferior wall (Figure 2). FDG/PET with cardiac preparation (per protocol)[1] showed no uptake in the mass but focal uptake in the apex (SUVmax 6.7) and mid-inferior wall (SUVmax 6.4), the latter concordant with the abnormal enhancement on MRI. FDG/PET also showed extracardiac uptake in enlarged mediastinal and bilateral hilar lymph nodes (SUVmax 5.1) (Figure 3). CTCA showed no significant coronary artery disease.

The focal myocardial and mediastinal lymph node uptake raised consideration of cardiac sarcoidosis.[1,2]

Inflammatory markers were elevated (CRP 47, N < 5.0), but ACE (36, *N* = 8 to 52) and calcium levels (2.52, N = 2.10 to 2.60) were within the normal range.

Surgical resection confirmed the left ventricular mass as bland thrombus and multiple nodal and cardiac biopsies showed no granulomatous changes. No steroid or immunosuppressive therapy was administered and FDG/PET 4 months later showed complete resolution of the myocardial and lymph node uptake (Figure 3).

DISCUSSION

The diagnostic dilemma in this instance is whether the cardiac and mediastinal nodal uptakes were secondary to sarcoidosis or the result of myocarditis with reactive lymphadenopathy, illustrating the challenges diagnosing cardiac sarcoidosis even with advanced multimodality imaging.

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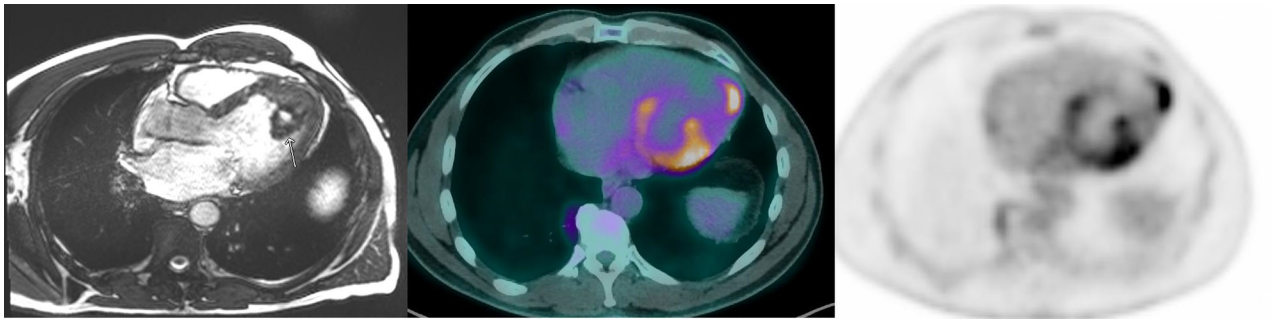

Figure 1. Left ventricular thrombus. Cardiac MRI (left) demonstrates an irregular nonenhancing 3 cm apical mass (arrow) in the left ventricle consistent with thrombus. FDG PET/CT (center) and PET (right) confirms no uptake within the mass. However, note the patchy uptake at the apex (SUVmax 6.7) on the background of suppressed physiological cardiac uptake (ratio to aortic blood pool 4.2).

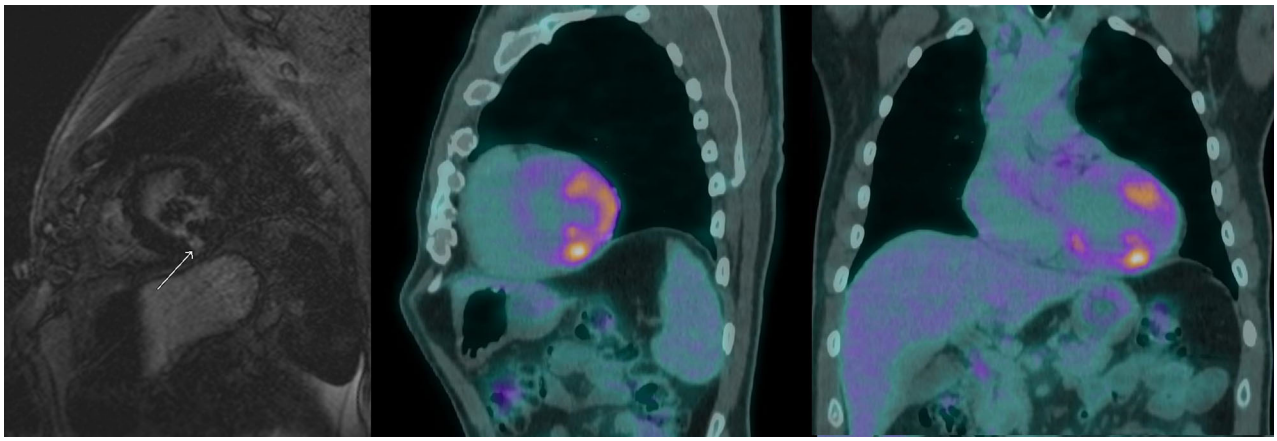

Figure 2. Left ventricular myocardial abnormality. Post contrast MRI (left) demonstrates a transmural area of delayed enhancement within the mid-inferior wall (arrow) with no other myocardial abnormality. Focal uptake (SUVmax 6.4) is seen within the corresponding area on initial FDG PET/CT (sagittal, middle, and coronal, right) although the patchy uptake on PET is more extensive than the abnormality seen on MRI. Appearances are nonspecific but could represent infiltrative disease such a sarcoidosis, infarct, or endomyocardial fibrosis. On MRI imaging, the focal changes make myocarditis unlikely.

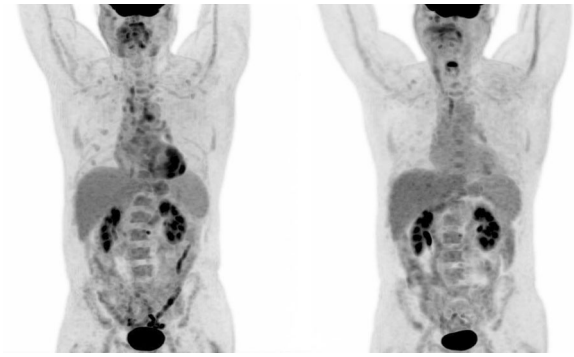

Figure 3. Initial (left) and follow-up (right) 18-FDG/PET. Initial images demonstrate patchy focal cardiac uptake, particularly within the apex and inferior wall. There is also uptake within enlarged paratracheal and bilateral hilar lymph nodes. The presence of extracardiac mediastinal nodal uptake is more suggestive of sarcoidosis on imaging. Follow-up at 4 months without intervening treatment demonstrates complete resolution of cardiac and lymph node uptakes.

Disclosure

The authors have nothing to disclose.

References

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