



Hybrid positron emission tomography-Magnetic resonance imaging for cardiac sarcoid

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In this issue of the Journal of Nuclear Cardiology, Ahluwalia et al. present a case of a 49-year-old African American woman with pulmonary sarcoidosis and severe mitral regurgitation found to have cardiac sarcoid from tissue biopsy at time of valve replacement.¹ Left ventricular systolic function was poor by echocardiography and cardiac magnetic resonance imaging (CMR). There was no late gadolinium enhancement on CMR but on positron emission tomography (PET), which was obtained simultaneously with CMR (hybrid PET-CMR), and there was significant uptake of ¹⁸F-FDG indicating active cardiac sarcoid. After treatment with prednisone and methotrexate, a follow-up PET-CMR obtained 6 months later demonstrated significant improvement in cardiac inflammation.

Cardiac involvement in patients with extracardiac sarcoid is common and has multiple manifestations and therefore suspicion for cardiac sarcoid should be high—if we do not suspect it and look for it, we will not find it. Recent position statement and expert consensus document by the American Society of Nuclear Cardiology and partnering societies detail the roles of different imaging modalities, including PET and CMR, for the diagnosis and management of cardiac sarcoid.^{2,3} As illustrated in this case,¹ there may be active cardiac sarcoid involvement which can be detected by PET,

despite the absence of late gadolinium enhancement and even T2-weighted signal on CMR. It is therefore prudent to proceed with PET imaging if there is high clinical suspicion even if CMR is not diagnostic. On the other hand, if CMR is diagnostic for cardiac sarcoid, PET is usually performed to guide management and subsequently to assess response to treatment. A role is therefore emerging for hybrid PET-CMR for imaging patients suspected of having cardiac sarcoid and its utilization is surely going to increase as more centers acquire these hybrid scanners.

The main challenge for PET imaging for cardiac inflammation is suppression of background myocardial glucose uptake. Prolonged fasting, high fat—low carbohydrate diet, and low-dose adjunct heparin have been shown to be useful in some studies, but lack of suppression is still seen in clinical practice despite these interventions. Newer agents for imaging cardiac sarcoid, which do not require dietary manipulation may help circumvent this issue in the future.⁴

Disclosure

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