SARCOIDOSIS VASCULITIS AND DIFFUSE LUNG DISEASES 2013; 30; 143-145

Detection of sarcoidosis associated fasciitis by uptake on a FDG PET scan: a novel finding

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Abstract. We report a case of a sarcoidosis patient with bilateral calf and thigh stiffness who was noted to ha ve intense linear FDG uptake on a PET scan that localized to the fascia of his calves and theighs. His serum creatine kinase level was normal. Fasciitis has rarely been reported to be detected on FDG PET scans, and, to our knowledge, never in a sarcoidosis patient. FDG PET may have a role in identifying fasciitis or myositis when a patient has muscular complaints and no clinical or laboratory evidence of muscle injury. *(Sarcoidosis Vasc Diffuse Lung Dis 2013; 30: 143-145)*

Key words: sarcoidosis, PET scan, fasciitis

A 59 year old man presented with an exacerbation of pulmonary sarcoidosis. He also complained of occasional stiffness and numbness in both his calves after mild exercise.

Physical examination of his lower extremities showed no signs of inflammation. His serum creatine kinase level was normal, serum angiotensin converting enzyme was elevated (90 U/L, upper limits of normal = 57 U/L), C-reactive protein was elevated (8.7 mg/L, upper limits of normal = 6mg/L), soluble interleukin 2 receptor level was elevated (2492 U/ml, upper limits of normal = 970u/ml)

A whole-body fluorodeoxyglucose positron emission tomography / computed tomography scan (18F -FDG PET/CT) was performed as part of prospective clinical study at our institution (Sismanogleion General Hospital Athens, IRB21767 04/10/2011). Significant FDG uptake was detected in multiple lymph node groups and the lung parenchyma. Additionally, intense linear FDG uptake was demonstrated in the muscle fasciae of both calves and thighs (figure 1), corresponding to the location of the patient's discomfort. Magnetic resonance imaging (MRI) of the lower limbs demonstrated no abnormal findings.

The patient was treated with oral prednisone for an acute pulmonary exacerbation of sarcoidosis. Both his pulmonary and lower extremity symptoms resolved completely.

Fasciitis has rarely been described in sarcoidosis patients. Two biopsy confirmed cases have been reported, one of granulomatous fasciitis (1) and one of eosinophilic fasciitis (2). Corticosteroid therapy was effective in both these cases.

Fasciitis has rarely been reported to be detected on FDG PET scans, and, to our knowledge, never in a sarcoidosis patient. Three cases of fasciitis that were detected on PET scanning have been reported; two with nodular fasciitis (3, 4) and one with eosinophilic fasciitis (5).

Sarcoidosis more commonly causes a myositis than an isolated fasciitis (6, 7) This may be detected by the presence of elevated serum muscle enzymes

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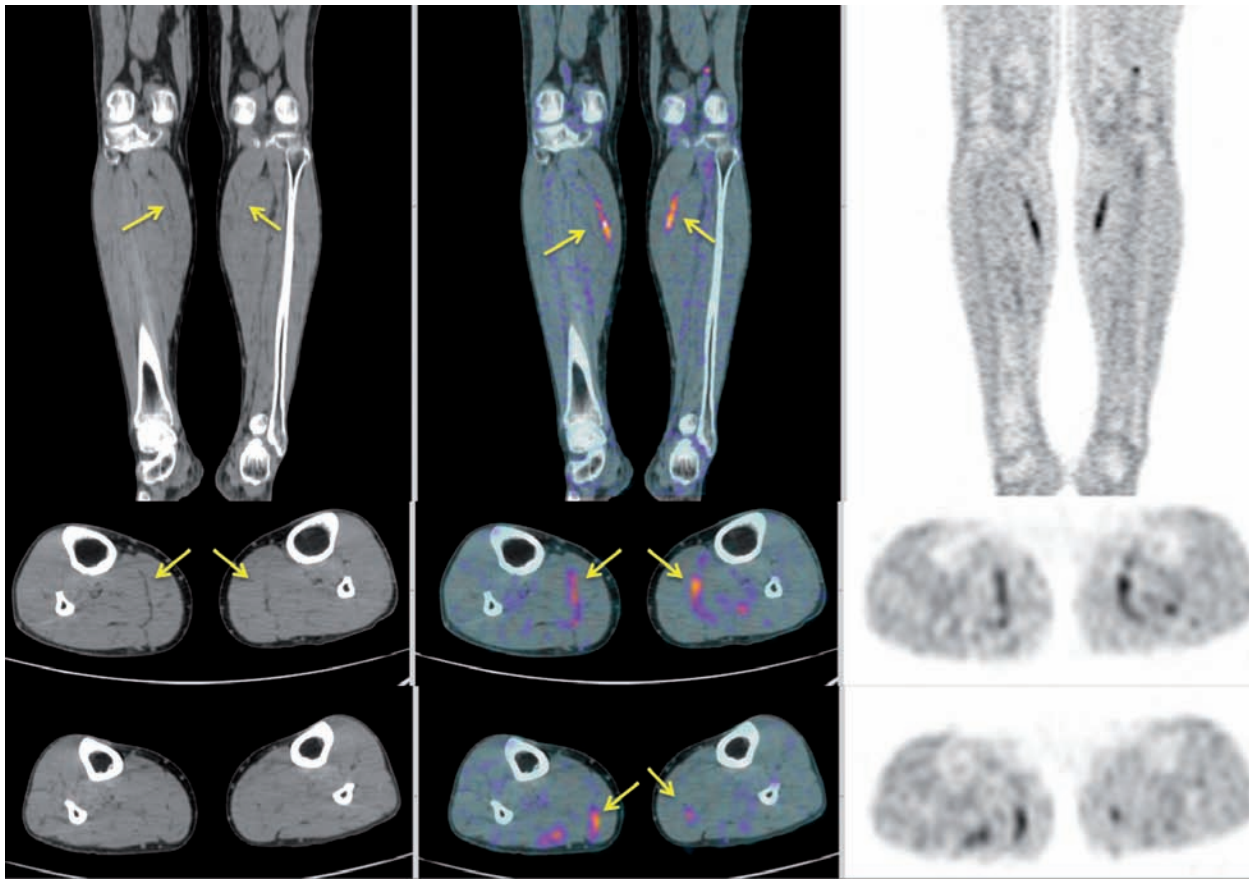

Fig. 1. Combined FDG PET/CT images of the lower limbs. PET (right column), fused PET/CT (middle column) and corresponding CT (left column) images of the lower limbs demonstrate linear increased FDG uptake extending along the fascia between the gastrocnemius muscle and the soleus muscle bilaterally (left and middle columns: arrows, right column: no arrows)

(8) and can be confirmed via Gallium-67 scanning (9), MRI (10) and even nuclear imaging (11).

It is unlikely that our patient's fasciitis would have been identified by an alternative non-invasive method. Although we acknowledge that the diagnosis of sarcoidosis-associated fasciitis was not biopsy confirmed, we believe that the clinical diagnosis is secure because of the specific PET scan findings, correlation of these findings to the clinical presentation, and response to therapy.

Our report demonstrates that FDG PET scanning is capable of identifying sarcoidosis related fasciitis. Although we are not advocating the routine use of FDG PET scans to evaluate musculoskeletal complaints of sarcoidosis patients, FDG PET scanning may have a role in the assessment of such problems, such as identifying fasciitis or myositis when a patient has muscular complaints and no clinical or laboratory evidence of muscle injury. While biopsy remains the gold standard to diagnose this phenotype of sarcoidosis and would be needed to confirm the accuracy of FDG PET, FDG PET is an alternative diagnostic consideration when tissue biopsy not possible or deemed excessively invasive. Possibly, combined PET/MRI scanning (12) would be superior in identifying sarcoid fasciitis and sarcoid myositis.

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