

A UNIQUE CASE OF EXTRAPULMONARY SARCOIDOSIS ON F18 FDG PET/CT: “TIGER MAN”

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ABSTRACT. Sarcoidosis is a systemic granulomatous disease in which muscle involvement is a rare extrapulmonary manifestation. We present the case of a 34-year-old man with shortness of breath lasting for three months. We conducted an F-18 FDG PET CT scan because the clinicians suspected a cancer. PET/CT scan demonstrated hypermetabolism in both lung parenchyma, multiple lymph nodes, spleen, muscles, and cutaneus/subcutaneus lesions. With the guidance of PET/CT with a suspicion of lymphoproliferative diseases, an axillary lymph node biopsy revealed granulomas; sarcoidosis was assumed, and corticosteroids were started. This case shows rarely seen muscle involvement of sarcoidosis by emphasizing the ability of PET/CT in detecting extrapulmonary involvements of the disease.

CASE PRESENTATION

We present the case of a 34-year-old man with shortness of breath lasting for three months. Both lungs' perihilar consolidations and intrathoracic lymph nodes were visible on computerized tomography. She was hospitalized for one week at an external center and received treatment for pneumonia, but because of insufficient regression, she was referred to our hospital's chest diseases department for further examination. He had no relevant past medical or surgical history, no usual medication, and no family history of any rheumatological or hereditary disease. He was a smoker for 15 years, as 1 packet/day. He was evaluated in a chest disease medicine consultation. In physical examination, decreased breath sounds in both hemithoraces were detected. Laboratory analysis showed an increase in the erythrocyte sedimentation rate (ESR) (20mm /hr). Serum calcium was higher (12.80/dl), but creatine kinase (CK) was under lower limits (22 mg/dl). Serial blood counts revealed anemia

(11.6 g/dL), lymphopenia (0.53x10³ u/L), but no leukocyte count deviation. Arterial blood gas analysis revealed a metabolic acidosis with elevated deoxy Hb (50.9%). Fibrinogen was also increased (463,46 mg/dl). Serum angiotensin-converting enzyme level was not measured. We conducted an F-18 FDG PET CT scan because the clinicians suspected a malignancy. There were metabolically active symmetrical consolidative lesions in the peribronchovascular and perihilar areas of both lung fields, as seen on the FDG PET CT scan. It also showed hypermetabolic lymph nodes in the neck, armpit, mediastinum, and abdominopelvic area (Figure 1 b, c). In addition to the lymph nodes, numerous linear and scattered hypermetabolic lesions were detected in skeletal muscles as well as in cutaneous and subcutaneous tissues particularly in the lower extremities (Figure 1a, d). Heterogeneous increased metabolism was also detected in the spleen and the parotid glands (Figure 1b). With the guidance of PET/CT with a suspicion of lymphoproliferative diseases, the histological analysis of the axillary lymph node biopsy specimens revealed non-caseating granulomas. We knew for sure that the patient had multisystemic sarcoidosis because of the histopathologic features and the pattern on the F-18 FDG PET CT scan. The patient was diagnosed with stage 2 sarcoidosis, and he started on methylprednisolone at a daily dosage of 32 mg, be gradually reduced. Sarcoidosis is a persistent granulomatous condition of

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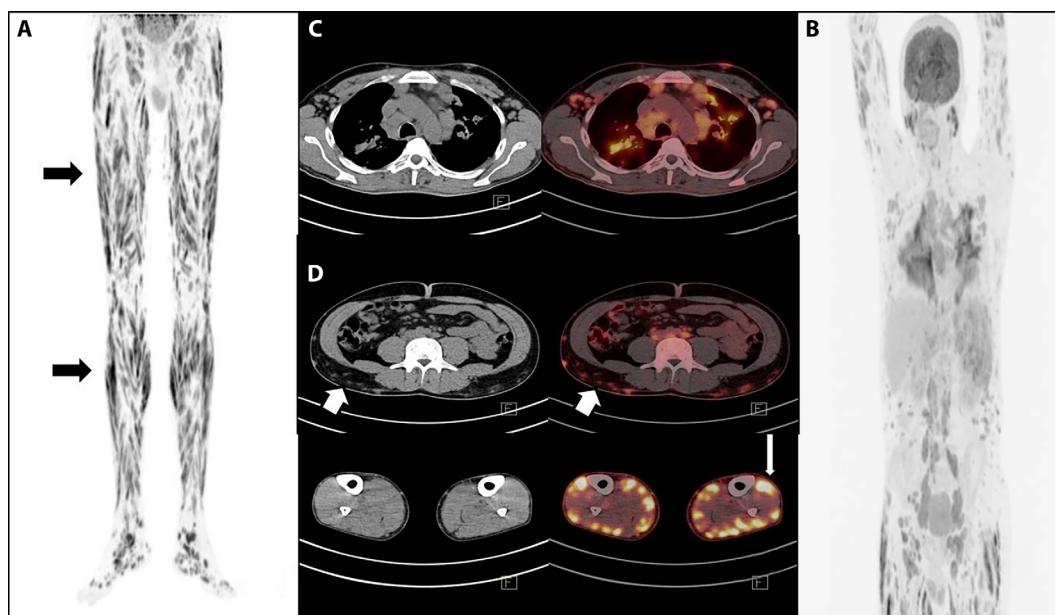


Figure 1. (a) Maximal Intensity Projection (MIP) view of the 18F FDG PET CT scan displaying several regions of linear and patchy fluorodeoxyglucose (FDG) uptake in bilateral lower extremities akin to a tiger's pelage, referred to as "Tiger Man" (black arrow); (b) Furthermore, perihilar consolidative lesions with abnormal FDG uptake in both lungs and hypermetabolism in multiple lymph nodes and spleen are seen; (c) axial CT and fused PET/CT images demonstrate hypermetabolic enlarged lymph nodes in bilateral armpits and mediastinum; (d) Axial CT and fused PET CT images demonstrating multiple focal hypermetabolic lesions in skeletal muscles (white arrow) and multiple hypermetabolic subcutaneous foci (thickened White arrows).

indeterminate origin. The lungs are the organs most commonly affected. Patients with sarcoidosis rarely exhibit muscular involvement (1-5). FDG PET is useful for finding hidden diseases, figuring out the extent, and deciding where to do biopsies because it can very accurately find active inflammation all over the body (6,7). This case highlights F18 FDG PET/CT imaging findings of a notable instance of the unusual involvement pattern in the limb muscles, known as the tiger man sign. First identified in 2012, the tiger man sign is considered a distinctive indicator of sarcoidosis (8). Despite being a distinctive hallmark of muscular sarcoidosis, the 'tiger man' sign on PET-CT has not received much documentation. Nuclear medicine professionals must promptly recognize this manifestation to assist physicians in making a prompt and precise diagnosis of muscular involvement of sarcoidosis. As this case illustrates, F-18 FDG PET CT scans are critical for recognizing sarcoidosis due to their capability to detect previously unidentified disease regions.

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