

Spontaneous Resolution of Idiopathic Panniculitis: Role of ¹⁸F-Fluorodeoxyglucose Positron Emission Tomography/Computed Tomography in Diagnosis and follow-up

Abstract

We present the case of a 55-year-old female patient who presented with dry cough. High-resolution computed tomography chest revealed multiple nodules in both lungs. ¹⁸F-fluorodeoxyglucose positron emission tomography/computed tomography (PET/CT) was done to look for the unknown primary. It showed hypermetabolic bilateral lung nodules, subcutaneous nodules involving lower limbs, an intramuscular nodule, enlarged paratracheal, and right axillary nodes. There was no primary tumor seen. The biopsy of subcutaneous nodule revealed panniculitis with the foreign body granuloma. Follow-up scans after 6 and 9 months showed spontaneous resolution of all lesions except for few right axillary nodes. There was no active treatment given, and the patient remains asymptomatic on follow-up. Here, PET/CT played a role in excluding a primary tumor, guiding the biopsy, and follow-up.

Keywords: ¹⁸F-fluorodeoxyglucose positron emission tomography/computed tomography, panniculitis, subcutaneous nodules

As the clinical use of fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET-CT) is increasing, nuclear medicine physicians are encountering a myriad of cutaneous and subcutaneous lesions, the most common cause being inflammation.^[1] We present the case of a 55-year-old female who presented with a dry cough for 2 the past months. High-resolution computed tomography chest showed multiple bilateral pulmonary nodules which were suspected to be metastatic. ¹⁸F-FDG PET/CT was done to look for unknown primary tumor. The FDG PET/CT [Figure 1] showed FDG-avid bilateral multiple lung nodules (standardized uptake value [SUV_{max}] in the nodule in lower lobe of left lung 18.35), multiple subcutaneous nodules (SUV_{max} between 6 and 16.21) involving both lower limbs, an intermuscular nodule in right thigh, left paratracheal node, and right axillary nodes (SUV_{max} 10.3). No primary tumor was found. Painless nonpruritic cutaneous nodules involving both lower limbs were observed on physical examination. The biopsy of subcutaneous inguinal nodule [Figure 2] showed subcutaneous soft

tissues and adipose tissue showing acute and chronic inflammation with septal as well as the lobular pattern of inflammation, epithelioid cell granulomas with the foreign body type giant cell and fat necrosis and focal areas of necrosis. The findings were suggestive of panniculitis with the foreign body granuloma. Immunohistochemistry for lymphoma and special stains for microorganisms were negative. Panniculitis is a benign inflammatory process. It is a general term for a group of pathologic processes consisting of adipocyte necrosis with surrounding inflammatory cells.^[1] Immunologic, traumatic, metabolic, paraneoplastic, and infectious causes have been implicated, and in some cases, the condition is idiopathic.^[2,3] No causative history was elucidated, and so this was diagnosed with idiopathic panniculitis with the foreign body granuloma.

Two consecutive follow-up ¹⁸F-FDG PET/CT scans performed 6 months and 9 months later [Figure 3] showed complete resolution of bilateral lung nodules, subcutaneous nodules involving both lower limbs, the intermuscular nodule in the right thigh and left paratracheal node. Few subcentimeter-sized FDG-avid

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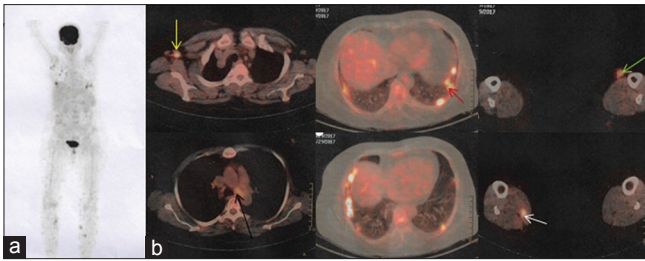


Figure 1: ¹⁸F-fluorodeoxyglucose positron emission tomography/computed tomography maximum intensity projection image (a) and axial images (b) showing fluorodeoxyglucose avid bilateral multiple lung (red arrow), multiple subcutaneous nodules involving both lower limbs (green arrow), an intermuscular nodule in right thigh (white arrow), left paratracheal node (black arrow) and right axillary nodes

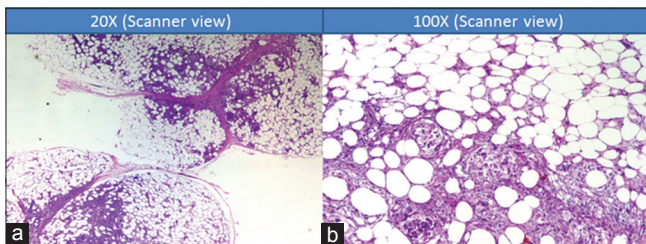


Figure 2: (a) The biopsy of subcutaneous inguinal nodule showing subcutaneous soft tissues and adipose tissue showing acute and chronic inflammation. (b) Epithelioid cell granulomas with the foreign body type giant cells seen. Panniculitis with the foreign body granuloma



Figure 3: (a) Maximum intensity projection and (b) (axial images) show follow-up positron emission tomography/computed tomography scan at 9 months showing right axillary node (arrow) and resolution of lung nodules

right axillary nodes were persistent on both follow-up scans. The SUVmax of the right axillary node was

9.2 in the second follow-up scan. There was no active treatment given and the patient remains asymptomatic on follow-up. Therefore, ¹⁸F-FDG PET/CT is not only helpful in the diagnosis of panniculitis but also allows follow-up evaluation. There are few case reports revealing the role of ¹⁸F-FDG PET/CT in panniculitis.^[4] Although immunosuppressive therapy is given for the treatment, spontaneous resolution, as in our case, is also seen.^[5] At times, as the lesions are ¹⁸F-FDG-avid, they could be misinterpreted as metastatic involvement. Therefore, biopsy is advisable to confirm the uncertain diagnosis.^[6,7] Panniculitis-like T-cell lymphoma is an important differential diagnosis.^[1,8]

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Conflicts of interest

There are no conflicts of interest.

References

1. Metser U, Tau N. Benign cutaneous and subcutaneous lesions on FDG-PET/CT. *Semin Nucl Med* 2017;47:352-61.
2. Waki A, Fujibayashi Y, Yonekura Y, Sadato N, Ishii Y, Yokoyama A. Reassessment of FDG uptake in tumor cells: High FDG uptake as a reflection of oxygen-independent glycolysis dominant energy production. *Nucl Med Biol.* 1997;24:665-70.
3. Diaz Cascajo C, Borghi S, Weyers W. Panniculitis: Definition of terms and diagnostic strategy. *Am J Dermatopathol* 2000;22:530-49.
4. Jiang B, Patino MM, Gross AJ, Leong SPL, Moretto JC, Kashani-Sabet M, *et al.* Diffuse granulomatous panniculitis associated with anti PD-1 antibody therapy. *JAAD Case Rep* 2018;4:13-6.
5. Dumas A, Agostini S, Villeret J, Ah-Soune P, Emungania O, Granel B, *et al.* Spontaneous resolution of severe, symptomatic mesocolic panniculitis: A case report. *BMC Gastroenterol* 2012;12:59.
6. Martínez-Rodríguez I, García-Castaño A, Quirce R, Jiménez-Bonilla J, Banzo I. Erythema nodosum-like panniculitis as a false-positive ¹⁸F-FDG PET/CT in advanced melanoma treated with dabrafenib and trametinib. *Clin Nucl Med* 2017;42:44-6.
7. Jung SM, Park KS, Cho SG, Park SH, Ju JH. Positron emission tomography of chronic panniculitis mimicking extranodal lymphoma. *Arthritis Rheumatol* 2014;66:3250.
8. Nair RA, Arunkumar N, Jacob PM, Nayak N. Subcutaneous panniculitis-like T-cell lymphoma: A report of five cases with review of literature. *Indian J Cancer* 2015;52:675-6.