

A case of Tietze's syndrome visualized on PET/CT-FDG

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Abstract

We report an interesting image of a 49-year-old woman revealed with Tietze's syndrome (TS) by ¹⁸F-FDG PET/CT. She presented with right upper sternum pain with a hard and fixed palpable mass. Chest radiograph and CT-Scanner revealed no abnormalities. PET/CT-FDG showed a hypermetabolic activity around right sternoclavicular joint, which was the correct symptomatic lesion. Hence, FDG PET/CT may be useful for diagnosing TS and to accurately detect the symptomatic lesion.

KEY words: Tietze's syndrome, sternoclavicular joints, PET/CT, FDG

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A 49-year-old woman suffered for one month from intermittent pain over the upper sternum, radiating occasionally towards the right arm. The pain was exacerbated by work. She noticed a tender swelling, the size of a plum, on her chest. There was no history of trauma to the area.

Examination found a hard, fixed, and fusiform swelling measuring approximately 3 x 2 cm, over the right sternoclavicular joint. There was no local inflammation or ecchymosis. Chest radiograph and CT scan revealed no abnormalities; the erythrocyte sedimentation rate was 7 mm/1hr, and the leukocyte count 3,500.

Tietze's syndrome (TS) was the first diagnosis admitted. To eliminate other possibilities, particularly malignant disease, PET/CT-FDG was performed and showed a hypermetabolic activity around right sternoclavicular joint with $SUV_{max} = 3.4$ visualized only under the cartilage and periarticular structures circumscribing the joint (Fig. 1). No other focal hypermetabolism was noted on bone material of chest, one focal hypermetabolism in right large intestine was noted, malignancy causes was eliminated by colonoscopy. Finally, TS was found and adequate treatment was established based on non-steroidal anti-inflammatory drugs.

TS was described for the first time in 1921 by the German surgeon Alexander Tietze [1]. It can be defined as benign, painful, non-suppurative, with localized swelling of the costosternal, costochondral, and/or sternoclavicular joints (Tietze's area), in the absence of other causes which could be responsible for this disorder [1, 2]. Diagnosis of TS is not very easy because variability of characteristics of chest pain and nonspecific radiological and laboratory tests. It can be confused with many rheumatic and non-rheumatic diseases [3]. Thus, accurate diagnosis of TS

is important, as it mimics malignant tumor and acute coronary syndrome [4]. In this situation, PET/CT-FDG is the elective method to explore total body with a high sensitivity and demonstrated hypermetabolic area to affirmed diagnosis of TS.

In this syndrome, costochondritis is not suppurative and the histological examinations of the swellings showed non-specific findings in the hyaline cartilage, consisting of an increased vascularity and degenerative changes with patchy loss of ground substance leading to a fibrillar appearance [5], explicating moderate hypermetabolism under the cartilage in PET/CT-FDG.

FDG PET/CT is a hybrid imaging that has well-established usefulness for inflammatory disease and provides detailed anatomic information. Hence, FDG PET/CT may be useful for diagnosing TS and accurate detection of the symptomatic lesion [4].

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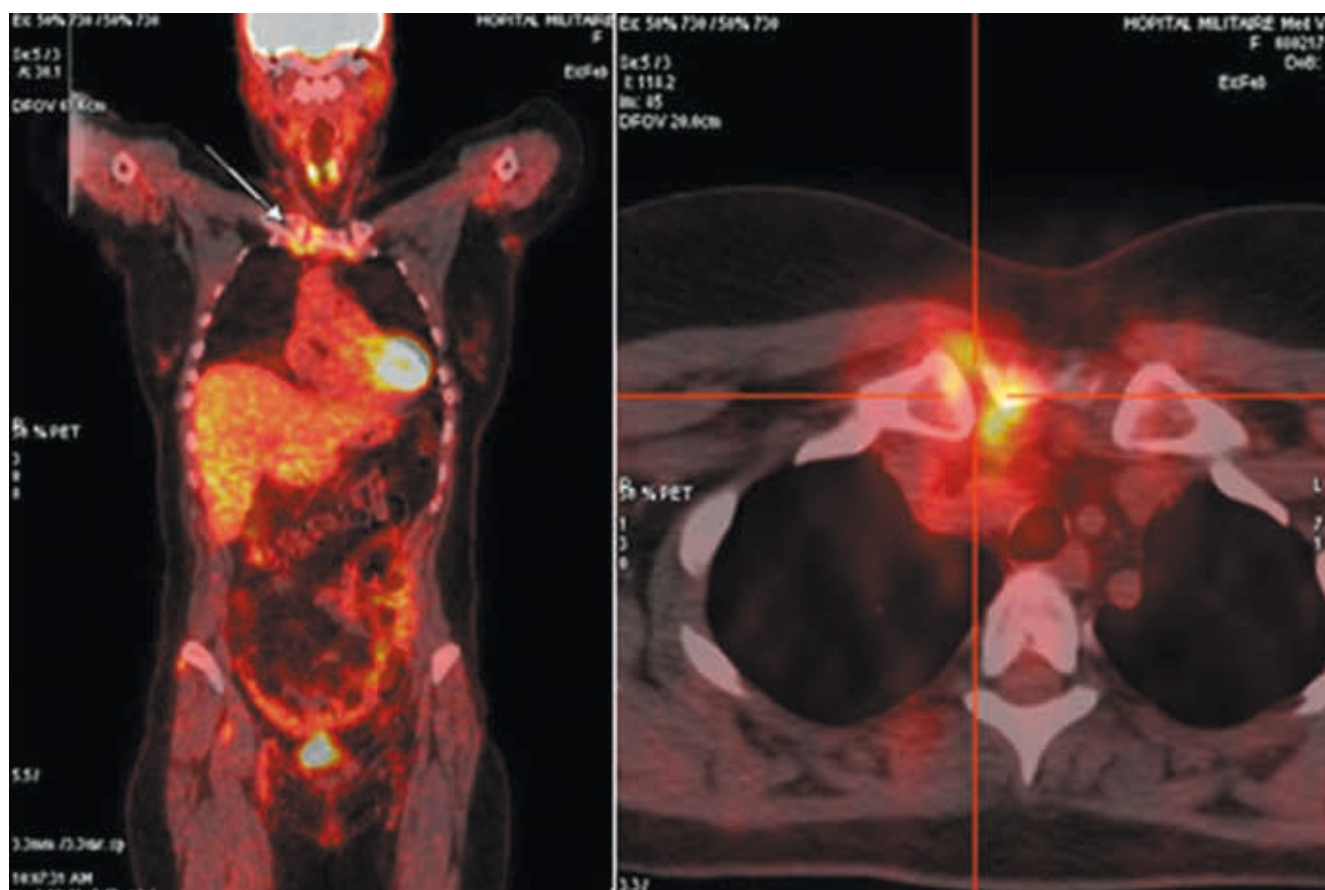


Figure 1. Coronal whole-body (left) and transaxial (right) fusion images showed ^{18}F -FDG accumulation in the cartilage and periarticular structures of right sternoclavicular joint (SUVmax = 3.4)

FDG — fluorodeoxyglucose, ^{18}F — Fluor-18; PET — positron emission tomography; TS — Tietze's syndrome; SUV — standardized uptake value