^{18}F-FDG-PET/CT findings in a patient with tuberculosis Hodgkin's disease and lupus vulgaris

To the Editor: Tuberculosis (TB) has been extensively described in association with various malignancies, especially Hodgkin's disease (HD) [1]. When TB is accompanying malignant lymphomas is often characterized by an atypical clinical course, with unusual extrapulmonary localizations [2]. Clinical forms of cutaneous TB have been described: These are: the primary TB inoculation, lupus vulgaris (LV), TB verrucosa cutis, scrofuloderma, orofacial TB and miliary TB [1, 3, 4]. A common form of cutaneous TB is LV [4]. Fluorine-18 fluorodeoxyglucose (^{18}F-FDG) whole-body PET scanning has been used for monitoring disseminated TB [5, 6]. ^{18}F-FDG accumulates not only in malignant tumors but also in inflammatory lesions of both infectious and non-infectious origins [7]. We present the^{18}F-FDG-PET/CT findings in a case of HD who also developed LV lesions after chemotherapy.

A 25 years old man with a history of mediastinal lymphadenopathy that was diagnosed as HD 11 months ago, received 6 cycles of chemotherapy with adriamycin, bleomycin, vinblastine and dacarbazine. The last chemotherapy treatment was 20 days before he was examined by a ^{18}F-FDG-PET/CT scan. One month ago he was clinically diagnosed as having LV with granulomatous and ulcerative lesions on left hand and the right pretibial region and received anti-TB treatment with isoniazid, rifampin and ethambutol for one month. The scan was performed from the thighs to the skull base. There were nodular lesions of slightly increased ^{18}F-FDG uptake at the lower parenchymal zones of both lungs, which did not reach the form of typical malignancy but were compatible with inflammatory lesions. Increased ^{18}F-FDG uptake was also detected on bilateral inguinal lymphadenopathy. There was no pathologic uptake on cervical, mediastinal, axillary and intraabdominal lymph notes bilaterally. Increased uptake with cutaneous and subcutaneous hypermetabolic lesions was detected on the left hand (Fig. 1), and on the right leg zones referring to the LV lesions (Fig. 2).

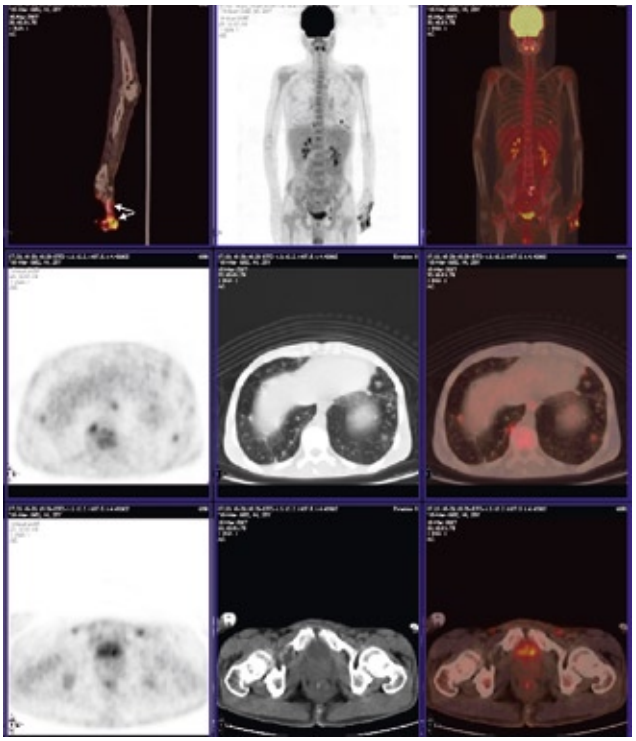


Figure 1. Nodular lesions of slightly increased ^{18}F-FDG uptake at the lower parenchymal zones of both lungs, not reached to typical malignancy but were compatible with inflammatory processes and also increased ^{18}F-FDG uptake on inguinal lymphadenopathies, and cutaneous and subcutaneous bilaterally hypermetabolic lesions on the left hand.

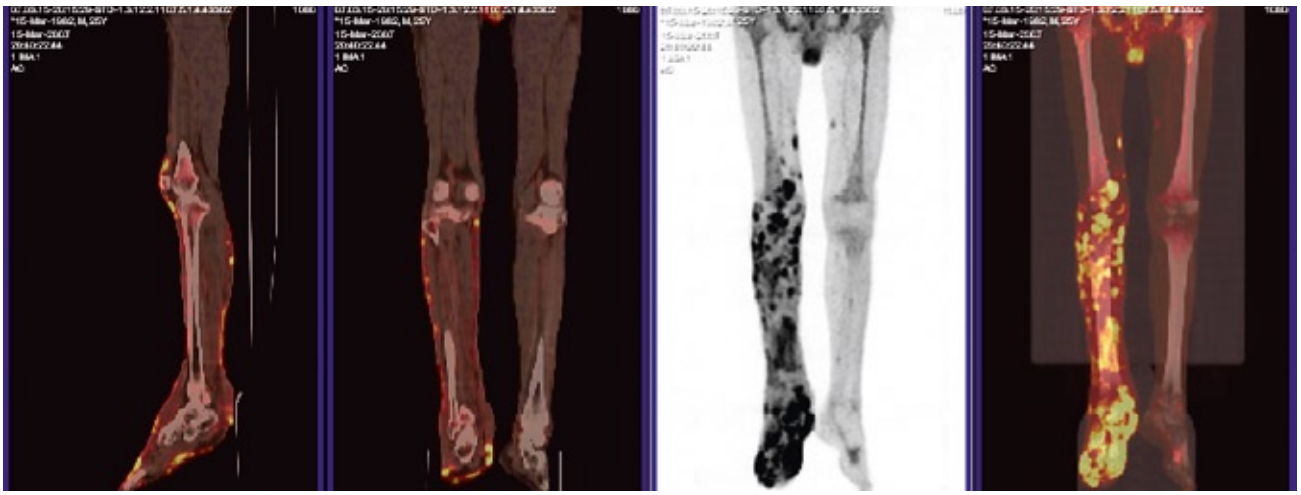
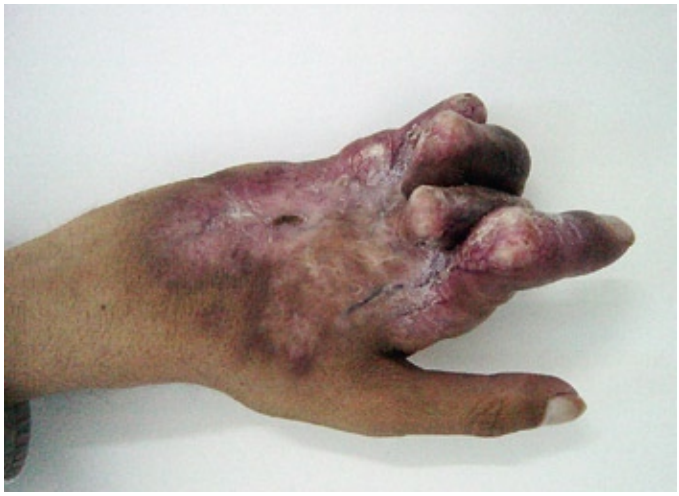


Figure 2. Increased ^{18}F-FDG uptake with cutaneous and subcutaneous hypermetabolic lesions on the right leg zones.



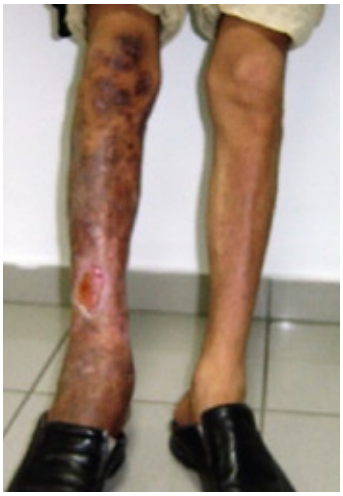


Figure 3. (a): Cicatricial and granulomatous lesions with sharp edges on the dorsum of the left hand, and (b): extensive lesions with an ulcer located on the right pretibial region and the dorsum of the foot.

Immunodeficiency in HD is a well-known and cell-mediated condition, which may result in infections including those by mycobacterium species [2]. Occurrence of TB and reactivation is higher in HD when compared with other malignancies [1]. Tuberculosis causing infections during or after chemotherapy for HD can also make differential diagnosis between resistant and relapsed malignancy difficult [2]. The clinical diversity of cutaneous TB depends on the route of acquisition of infection and on the patient's immune status [8].

Lupus vulgaris can appear after inoculation or haematogenously on the head and neck particularly around the nose and the lobes of the ears and typically as reddish brown plaques [3, 5]. Our case is an unusual example of the presence of LV at the hand and the foot in a patient with HD (Fig. 3a, 3b). For staging HD [9] and for inflammatory or infectious diseases, ^{18}F-FDG-PET/CT has been widely used because increased ^{18}F-FDG concentration representing increased cell glycolysis is demonstrated in activated macrophages, lymphocytes and granulocytes as well as neoplastic cells [10]. Therefore, increased ^{18}F-FDG uptake might be expected in TB infections [11]. However, we believe this is the first report of intense multifocal ^{18}F-FDG uptake in LV.

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