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Case Report

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Complete Metabolic Response of Kaposi Sarcoma as Shown by Follow up F-18 Fluorodeoxyglucose Positron Emission Tomography/Computed Tomography

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Abstract

HIV virus infection is associated with several malignancies including Kaposi's sarcoma (KS), non-Hodgkin's lymphoma and cervical carcinoma. In AIDS patients Kaposi sarcoma might be aggressive and thus indication of aggressive diseases and visceral involvement is required for the management of the patients. F-18 fluorodeoxyglucose (FDG) Positron Emission Tomography/Computed Tomography (PET/CT) might show the disease severity and visceral organ involvement. There is previous case reports of the AIDS patients with KS presented with FDG PET/CT images in the literature however this is the first case with complete response shown by FDG PET/CT as far as we know in the literature.

Keywords: HIV; Kaposi sarcoma; fdg; PET/CT

Introduction

Acquired immunodeficiency syndrome (AIDS) is associated with several opportunistic infections as well as malignant tumors [1-3]. The infections and malignancies are usually aggressive and mortal in the immunocompromised host. However antiviral treatment options might provide better survival.

Kaposi's sarcoma (KS) is the endothelial connective tissue tumor with indolent disease course. This malignancy is frequently observed in the patients with AIDS which may be presented in as high as half of the homosexual male patients during the disease [4]. The KS associated with AIDs is usually presented with HSV-8 as well [5]. KS associated with HIV positivity is usually presented with visceral organ involvement and an aggressive disease course. The nodules associated with KS are small volume lesions with difficulties in imaging by means of morphologic imaging methods. However metabolic imaging has advantages over morphologic images due to high contrast between lesion/non-lesion tissues.

Non-hodgkins lymphoma (NHL) another frequent malignancy in the patients with AIDS. It is usually problematic to differentiate the clinical and even imaging findings of the KS and NHL and virus associated lymphadenopathies [1].

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Previous reports demonstrated the F-18 FDG PET/CT images of the patients with KS however this case report demonstrates the follow up F-18 FDG PET/CT images of a patient with HIV positive KS firstly in the literature as far as we know.

Case Report

Thirty years old male patient with history of HIV positivity presented with multiple lymph node enlargements in the mediastinum referred with suspicion of lymphoma to F-18 FDG PET/CT. The patients' physical examination revealed nothing special but laboratory results showed significant increase in sedimentation (36 mm/hour) and CRP levels (24.88mg/L).



2b: Immune staining images of the same sections showing HHV-8 virus positivity

Imaging

The imaging was performed after a fasting period of 12 hours and the blood glucose level was 111mg/dl; 60 minutes after intravenous administration of 7,7 mCi F-18 FDG in craniocaudal direction in 3D acquisition mode for 1 min per bed position with nondiagnostic CT scan for attenuation correction and oral contrast administration.

The PET/CT imaging revealed multiple hypermetabolic lymph nodes in bilateral servical, supraclavicular, axillary and mediastinoabdominal regions and multiple hypermetabolic abdominal implants (Figure 1). The pathology results revealed KS involvement of the supraclavicular lymph node (Figure 2).

Four months after the initial scan and three sickles of Doxorubicine treatment at the dose of 20 mg/m² the CRP level decreased to 1.87mg/L and follow up FDG PET/CT imaging was performed revealed no pathologic activity accumulation (Figure 3).

Discussion

Metabolic imaging has great contribution towards the diagnosis

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Figure 3a: Corresponding same images of four months follow up PET/CT for treatment response evaluation.



of malignant tumors as well as infectious diseases. In especially complicated cases such as HIV positive patients with challenging diagnostic features FDG PET/CT aid in the determination of the primary site, biopsy site or determination of the disease.

KS generally is presented with multiple nodular lesions all over the body as well as lymphadenopathy. This presentation usually misinterpreted as lymphoma and also the HIV infection itself is a disease presented with multiple lymph nodes. Iyengar et al. showed the lymph node magnitude and dissemination of the patients with HIV positivity by means of FDG-PET [6,7]. KS is associated with HHV8 virus in both HIV positive and negative patients [6,8]. Jeong et al., reported a case with classical KS mimicking appearance of the malignant lymphoma in FDG PET/CT [9]. In this case the FDG PET/ CT imaging showed multiple lymph nodes all over the body thus the patient was suspected to have lymphoma. However the lymph node biopsy revealed malignant metastatic involvement of the node by KS. In case of limited disease the treatment modality of the KS might include radiation, excision of the local disease [10], however in case of disseminated disease systemic chemotherapy treatment options exists [11-14]. This case received chemotreaphy due to diagnosis of disseminated disease and showed complete response.

This case report presents follow up imaging of the complete remission of disseminated KS in a patient with HIV positivity by means of F-18 FDG PET/CT.

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