Disseminated histoplasmosis demonstrated on F18-fluorodeoxyglucose positron emission tomography/computed tomography in a renal transplant recipient

Sir,

We report a 30-year-old male recipient of an allogenic renal transplant 10 years back who presented with signs and symptoms of pneumonia and pleural effusion. High resolution computed tomography (CT) of chest revealed features of miliary tuberculosis and patient was started on anti-tubercular medication, despite which his clinical condition did not improve. Keeping in mind the possibility of posttransplant lymphoproliferative disorder (PTLD) patient was referred for F-18 fluorodeoxyglucose (F-18 FDG) positron emission tomography/CT (PET/CT). PET/CT revealed increased FDG uptake over multiple cutaneous sites in the body [Figure 1a - arrow]. These corresponded to cutaneous and subcutaneous thickening with stranding [Figure 1b and c - arrow]. In addition to this, a tree in bud appearance and cavitory lesions with mild FDG uptake were noted in both lungs [Figure 1d and e]. On examining the patient he had macular skin lesions which had not been evaluated and in view of the PET findings a biopsy from the skin lesions was advised. The biopsy revealed infiltration of dermis by inflammatory granulation tissue rich in plasma cells and foamy histiocytes with fungal spores [Figure 1f], without involvement of the epidermis. Periodic acid Schiff [Figure 1g] and Gomori methanamine silver [Figure 1h] stain highlighted the fungal structures, confirming the diagnosis of histoplasmosis.

Exposure to *Histoplasma capsulatum* is exceedingly common for persons living within areas of endemicity, but symptomatic infection is uncommon. Acute self-limited pulmonary histoplasmosis is commonly presented with rheumatologic and/or dermatologic manifestations in approximately 5% of patients. Acute infection commonly manifested as myalgias and arthralgias. Patients who have hilar lymphadenopathy, arthralgias, and erythema nodosum may confuse with a diagnosis of sarcoidosis. Acute severe pulmonary infection presents as abrupt onset of illness and fever, chills, malaise, dyspnea, cough, and chest pain.

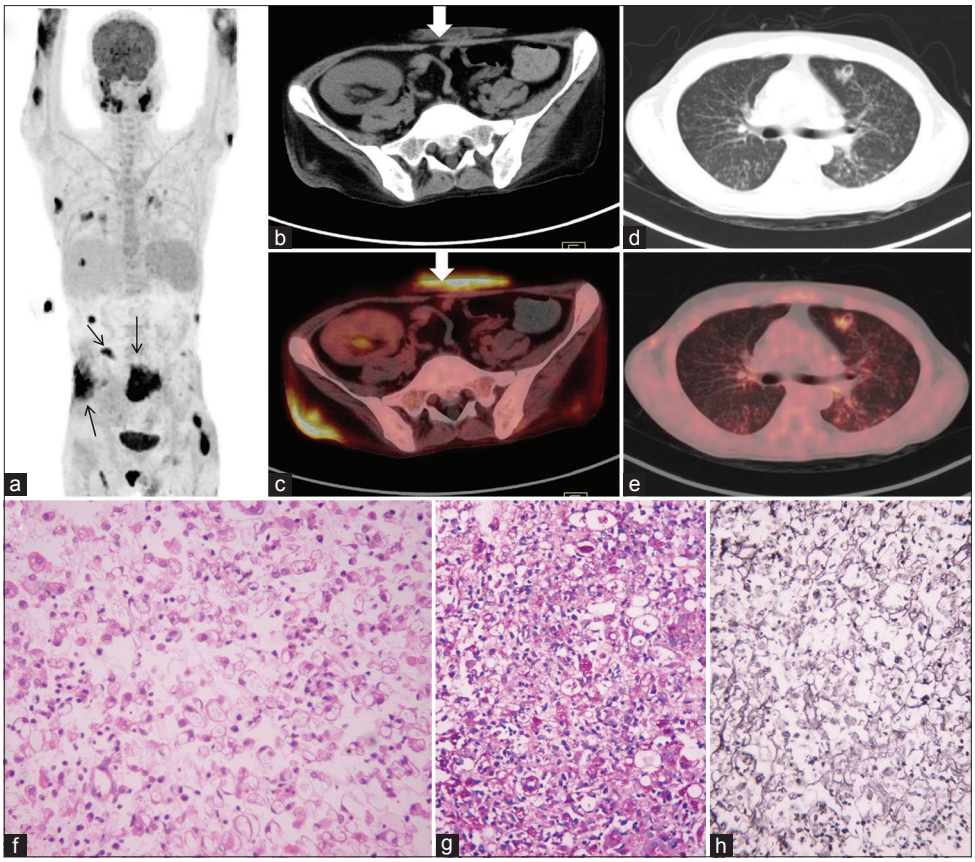

Figure 1: Positron emission tomography/computed tomography revealed increased cutaneous positron emission tomography/computed tomography uptake over multiple sites in the body (a - arrow) that corresponded to cutaneous and subcutaneous thickening with stranding (b and c - arrow). Tree in bud appearance and cavitory lesions with mild positron emission tomography/computed tomography uptake noted in both lungs (d and e). Biopsy revealed dermis infiltrated by inflammatory granulation tissue rich in plasma cells and foamy histiocytes with fungal spores (f). Periodic acid Schiff (g) and Gomori methanamine silver (h) stain highlighted the fungal structures

Chronic cavitary pulmonary histoplasmosis is seen older patients. Chronic cavitary pulmonary histoplasmosis include fatigue, fever, night sweats, anorexia, and weight loss. Specific pulmonary symptoms include cough, sputum production, hemoptysis, and dyspnea. Granulomatous mediastinitis, mediastinal fibrosis, or fibrosing mediastinitis and pericarditis may be seen as complications. Broncholithiasis occurs when a calcified node adjacent to a bronchus erodes into the bronchus, causing obstruction, inflammation, and subsequent bronchial scarring. The symptoms of disseminated histoplasmosis include fever, malaise, anorexia, and weight loss. Physical examination will often show hepatosplenomegaly, lymphadenopathy, pallor and petechiae if pancytopenia is present, and, in some patients, mucous membrane ulcerations as well as skin ulcers, nodules, or molluscum-like papules. Gastrointestinal tract involvement is common during disseminated infection as determined by autopsy studies but remains asymptomatic or with only vague abdominal symptoms in many patients histoplasmosis can involve every organ system during the course of dissemination, but symptomatic disease is rare at some sites. Osteoarticular infection, endocarditis, chronic meningitis are among the uncommon manifestations of histoplasmosis.[1] Cutaneous involvement occurs in about 17% of patients with disseminated disease and can manifest as papules, pustules, plaques, ulcers, molluscum or wart-like lesions and rarely as erythema nodosum.[2]

PET/CT is an important diagnostic tool to ascertain the exact extent of disease and help in guiding the site of biopsy for a definite diagnosis in patients with fungul infections.[3] F-18 FDG PET/CT is also an effective imaging modality in the staging and follow-up of PTLD after transplantation where in it has the ability to detect occult lesions not identified by other imaging modalities.[4] Also PET/CT have shown its efficacy in detecting mediastinal histoplasmosis and its response evaluation after starting antifungals in a known case of melanoma.[5] In the present case the identification of metabolically active skin lesions on PET/CT enabled timely diagnosis and institution of appropriate therapy for histoplasmosis.

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Conflicts of interest

There are no conflicts of interest.

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