

Fluorodeoxyglucose Positron Emission Tomography–Computed Tomography in Disseminated Cryptococcosis

Abstract

Disseminated cryptococcosis without pulmonary involvement is a very rare phenomenon. Patterns of organ involvement in cryptococcosis resemble various other infective conditions as well as malignant conditions on fluorodeoxyglucose positron emission tomography–computed tomography. We present a case of a 43-year-old male patient who had disseminated cryptococcosis. The rarity of the case being noninvolvement of lungs and meninges and resembling more like lymphoma due to the diffuse involvement of the lymph nodes on both sides of the diaphragm.

Keywords: *Cryptococcosis, fluorodeoxyglucose positron emission tomography–computed tomography, lymphoma*

A 43-year-old male patient presented to the medicine OPD with the chief complaints of fever and headache for the past 3 months. He had lost weight of around 10 kg in 3 months and complained of anorexia and fatigue. On evaluation, he was found to be retroviral positive. Physical examination revealed generalized painless nonmatted lymphadenopathy and a palpable spleen (4 cm below the left costal margin). In suspicion of lymphoma, whole body 18-F-fluorodeoxyglucose positron emission tomography–computed tomography (18-F-FDG PET-CT) was done, which revealed bulky bilateral adrenal glands with increased FDG uptake [Figure 1a and b – white arrows]. Hypermetabolic multiple discrete enlarged bilateral cervical [Figure 1c and d], bilateral supraclavicular, bilateral axillary, multiple mediastinal, abdominal, retroperitoneal [Figure 1e and f], and pelvic lymph nodes. Splenomegaly (13 cm) was seen with increased FDG uptake [Figure 1a and b]. Diffusely increased FDG uptake was also seen in both the kidneys [Figure 1a, b and f]. Lymph node biopsy from the cervical region was done which revealed sheets of Gram-positive budding encapsulated yeast cells [Figure 1g] and positive for methenamine silver stain [Figure 1h].

Cryptococcal infections mostly affect the immunocompromised hosts such as those with acquired immune deficiency

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syndrome, organ transplant recipients or patients with hematologic malignancy and long-standing diabetes mellitus.^[1] It occurs most commonly by the inhalation of the organism with the pulmonary system being affected earliest and subsequent dissemination to the other systems.^[2] Usually, inhalation of *Cryptococcus* causes focal pneumonitis and the infection is generally detected as single or multiple pulmonary nodules.^[3] Disseminated cryptococcosis most commonly affects the lung, central nervous system, followed by skin, adrenal glands, prostate, and bones. Involvement of lymph nodes is very rare although it has been previously reported in the literature.^[4-6] FDG PET-CT has slowly but steadily established itself as an infection imaging agent and has been used to delineate the extent of the disease on many occasions. FDG accumulation in infectious tissue can be attributed to migratory inflammatory cells, microorganisms, and granulation tissues.^[7-10] Hot *et al.* emphasized on the use of FDG PET in initial diagnosis and staging of fungal infections.^[11] Hence, cryptococcosis can very well mimic lymphoma on 18-F-FDG PET-CT and treatment algorithm should be started only after biopsy from the concerned lesion. This case reiterates the fact that FDG PET-CT has been unreliable in differentiating inflammation/infection from malignancy based on the standardized uptake value values and such cases warrants

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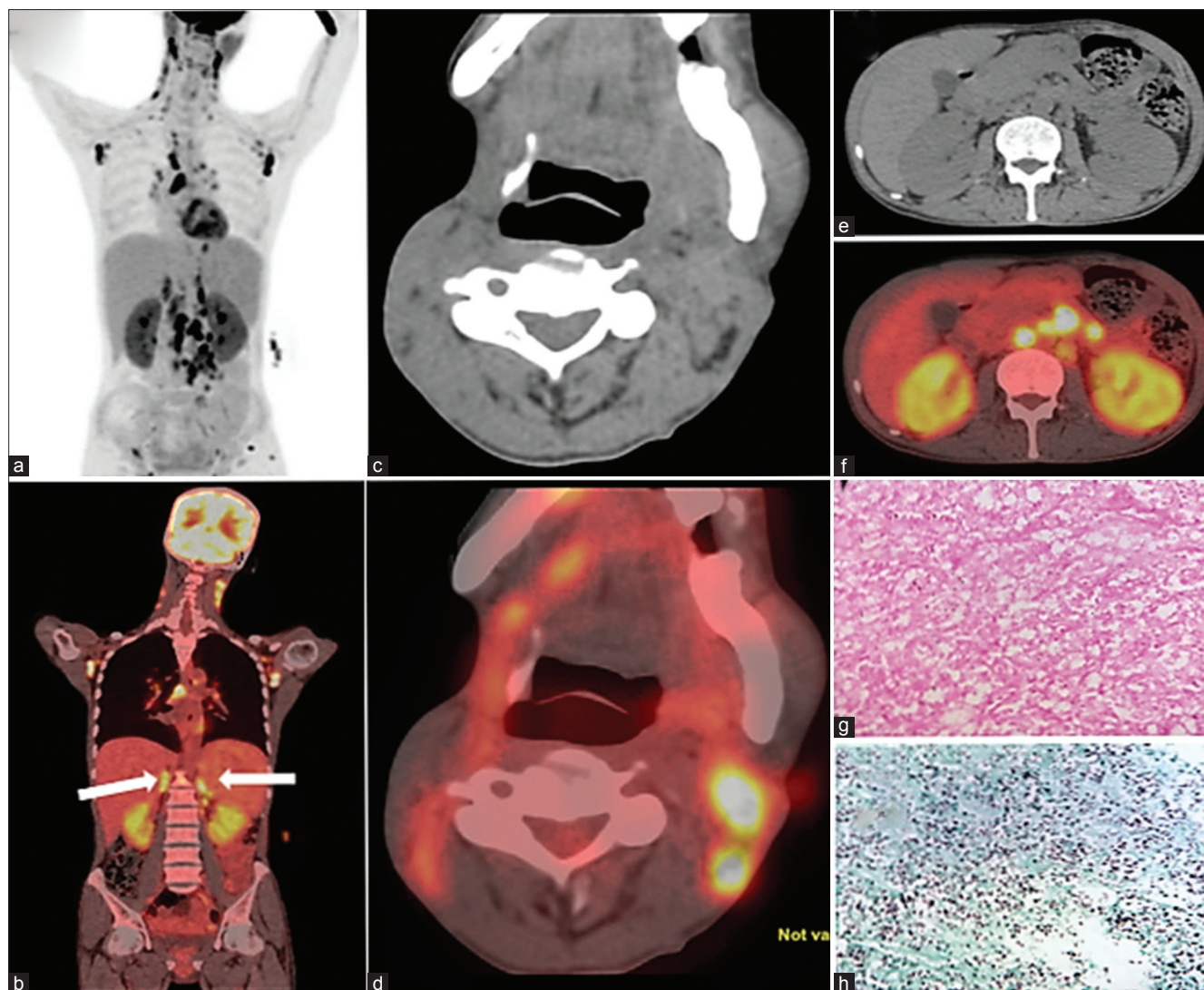


Figure 1: FDG PET-CT shows hypermetabolic bulky bilateral adrenal glands (a and b – white arrows). Multiple FDG-avid discrete enlarged bilateral cervical (c and d), supraclavicular, axillary, mediastinal, abdomino-pelvic, retroperitoneal (e and f) lymph nodes. Splenomegaly is seen with increased FDG uptake (a and b). Diffusely increased FDG uptake is seen in both the kidneys with loss of cortico-medullary differentiation (a, b, and f). Biopsy from the cervical lymph node revealed sheets of gram positive budding encapsulated yeast cells (g) and positive for silver methenamine stain (h). FDG PET-CT: Fluorodeoxyglucose positron emission tomography–computed tomography

histopathological correlation. However, it can very well describe the extent of the disease and organ involvement.

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Conflicts of interest

There are no conflicts of interest.

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