

## Granulomatous Lung Nodule Mimicking as Metastasis on F18 Fluorodeoxyglucose Positron Emission Tomography/Computed Tomography in a Case of Adrenocortical Carcinoma

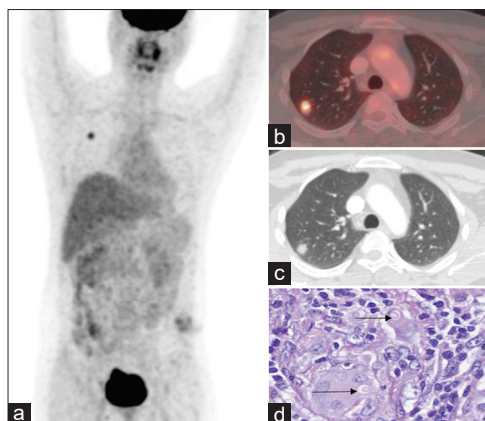
### Abstract

A variety of fungal pulmonary infections can produce radiologic findings that mimic malignancy. Distinguishing these infectious lesions from malignancy remains challenging for physicians. We describe one such case where fungal lung nodule mimicked metastasis on fluorodeoxyglucose positron emission tomography/computed tomography scan.

**Keywords:** Fluorodeoxyglucose positron emission tomography-computed tomography, fungal granuloma, lung nodule

### Explanation

A 25-year-old male, presented with complaints of abdominal pain, fever, and vomiting. Computed tomography (CT) scan revealed 6 cm sized left adrenal mass, underwent left adrenal mass excision, histopathology revealed adrenocortical carcinoma. Postoperative 18F Fluorodeoxyglucose positron emission tomography (FDG PET/ CT) revealed focal increased FDG uptake in the right lung, upper lobe nodule and on axial images, with SUV max-7.08 [Figure 1]. The imaging findings were suspicious for a metastatic



**Figure 1:** Focal increased FDG uptake in the right lung seen on MIP (Image a) and well defined, peripheral, solitary and round shaped nodule is seen on axial fused PET/CT and CT images (Image b and c). Histopathology slides confirmed yeast-like organisms suggestive of Cryptococcus (Image d)

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nodule. Video-assisted-thoracoscopic metastatectomy of the nodule with completion adrenalectomy was done. Histopathology from lung nodules revealed necrotic granulomatous inflammation with giant cells suggestive of fungal infection with no evidence of malignancy. Special stain photomicrographs revealed yeast-like organisms suggestive of Cryptococcus [Figure 1d]. The infectious agents that mimic malignancy or metastases in the lung include bacteria (*Fusobacterium*, *Pseudomonas*, *Streptococcus*), mycobacterium (*Mycobacterium tuberculosis*, *Mycobacterium kansasii*), parasites (*Dirofilaria*), fungi, and rarely, viruses (*Cytomegalovirus*).<sup>[1]</sup> Fungal infections that mimic malignancy include coccidioidomycosis, histoplasmosis, aspergillosis, North American blastomycosis, and cryptococcosis.<sup>[2]</sup> An SUV of 2.5 has been traditionally used as a cut-off value for differentiating malignancy from infection; but in pulmonary cryptococcosis, the SUV may vary widely, from mild to marked uptake and thus these findings indicate that FDG PET/CT is of limited value in differentiating cryptococcosis from malignancy.<sup>[3]</sup> In conclusion, such FDG-avid lung nodules pose quite a diagnostic challenge in a known case of malignancy and thus should always be correlated with a proper histopathological and microbiological evaluation.

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### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### **Conflicts of interest**

There are no conflicts of interest.

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