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Lung Cancer Mimicking As Fungal Infection Radiologically – A Case Report

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ABSTRACT

There are varieties of pulmonary infections such as fungal and nocardia which can produce radiologic findings that mimic lung cancers. To differentiate lung cancer from these infectious lesions remains challenging for clinicians and radiologists. In such cases, clinical manifestations and radiographic features can be highly suggestive of infectious diseases such as fungal and nocardia and misdiagnosis can be made leading to significantly delay in the initiation of appropriate treatment and causing increasing in the morbidity and mortality. To diagnose the malignant nature of the lesions, a biopsy is usually required. A detailed history, clinical examination, radiological examination, and histological tests helped in the diagnosis of the patient. We highlight the importance of suspicion, careful general examination, radiological assessment and histological tests to confirm the diagnosis of lung cancer mimicking as fungal infection radiologically.

Keywords: Fungal mass, lung cancer, biopsy, computed tomography **INTRODUCTION**

Fungal infection is the one of the most common pulmonary lesions that mimics neoplasia. The main tool used for the diagnosis and staging of lung cancer is the radiology. In this context, the important thing is the knowledge of the main radiologic mimickers of cancer.[1] The main radiologic features the suggestive of lung cancer include a parenchymal nodule or mass with irregular margins, lobulations, a thick-walled cavity and chest wall invasion However, several pulmonary infectious diseases occasionally cause inflammatory lung lesions resembling pulmonary carcinoma.[2] Despite improvements in imaging studies, serologic/microbiologic testing and interventional bronchoscopic/ radiologic procedures, accurate diagnosis remains challenging.[3]The clinical manifestations and radiographic findings are indistinguishable from those produced by infectious diseases such as fungal and nocardia. In this case, we review the clinical, histologic and radiologic features

of the lung cancer mimicking as fungal infection radiologically.

CASE REPORT

A 59 years old female presented to the Chest and Tb hospital Amritsar with the chief complaint of hemoptysis and fever. The patient was known case of DM type 2 for 10 years. The patient was non smoker and had no other significant medical history and her HIV status was negative. Additionally, patient's travel history as well as pet, home, and occupational exposures were non contributory. she had no family history of malignancy, not immunosuppressive. Her chest x ray shows a well defined inhomogeneous opacity involving right lower lobe . Her CECT chest revealed large cavitary lesion involving the right lower lobe with surrounding ground glass haze, welldefined nodular lesion involving the basal segments of the right lower lobe medially and associated calcified mediastinal lymph nodes. It also showed calcified nodular lesion involving the right middle lobe and the left lingular lobe. Based on CECT findings, possibility was made of fungal infection with differential diagnosis of Nocardia. FNAC of the mass lung was done which revealed highly cellular smear showing numerous malignant cells, the cells showed moderate to abundant cytoplasm with fine vacuoles and pinkish inclusions in some, suggestive of poorly differentiated malignancy. Biopsy with immunohistochemistry was done which showed features of adenocarcinoma.



Figure 1 chest x rays shows a well defined inhomogeneous opacity involving right lower lobe.



Figure 2 CECT revealed large cavitary lesion involving the right lower lobe with surrounding ground glass haze, well-defined nodular lesion involving the basal segments of the right lower lobe medially and associated calcified mediastinal lymph nodes. It also showed calcified nodular lesion involving the right middle lobe and the left lingular lobe

DISCUSSION

A variety of fungal pulmonary infections can produce radiologic findings that mimic lung cancers. Distinguishing these infectious lesions from lung cancer remains challenging for radiologists and clinicians. The fungus colonises an existing pulmonary cavity, bulla or ectatic bronchus, forming a mass of intertwined fungal hyphae admixed with mucus and cellular debris. The most common underlying causes of the infection are tuberculosis and sarcoidos.[4,5]

CECT chest in our case revealed large well defined cavitary lesion involving the right lower lobe with surrounding ground glass haze, well-defined nodular lesion involving the basal segments of the right lower lobe medially and associated calcified mediastinal lymph nodes. The main radiologic features suggestive of lung cancer include a parenchymal nodule or mass with irregular margins, lobulations, a thick-walled cavity and chest wall invasion. In our case, it was difficult to distinguish the mass because of its regular and well defined borders which is usually not found in malignant neoplasms. It was difficult to make an accurate diagnosis of lung cancer by imaging findings alone. After ruling out other common differentials, the final diagnosis was made only by getting CT guided biopsy which revealed adenocarcinoma. So a well defined mass may be malignant.

CONCLUSION

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This case is reported to highlight the importance to differentiate between infectious diseases such as fungal and lung malignancies and also to create the awareness regarding recognition of atypical lung cancer presentation radiologically. This may helps in early diagnosis and prevents morbidity and mortality related to false diagnosis.

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