

View Box - Case 2

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Pages with reference to book, From 45 To 47

History

A 69 year old female was referred to our hospital for the evaluation of abnormal opacity in the right lower lung field, which was incidentally detected on a routine medical examination. She underwent CT guided lung biopsy at another hospital but no definite diagnosis was established. Chest radiograph taken 4 months before presentation was normal. She was asymptomatic.

Physical examination

Unremarkable.

Laboratory findings

Blood counts, ESR, electrolytes, serum total protein, LDH, alkaline phosphatase and renal indices were normal. Tumor markers (CEA, AFP and CA19-9) levels were also normal.

Imaging

PA chest radiograph (Figure 1)

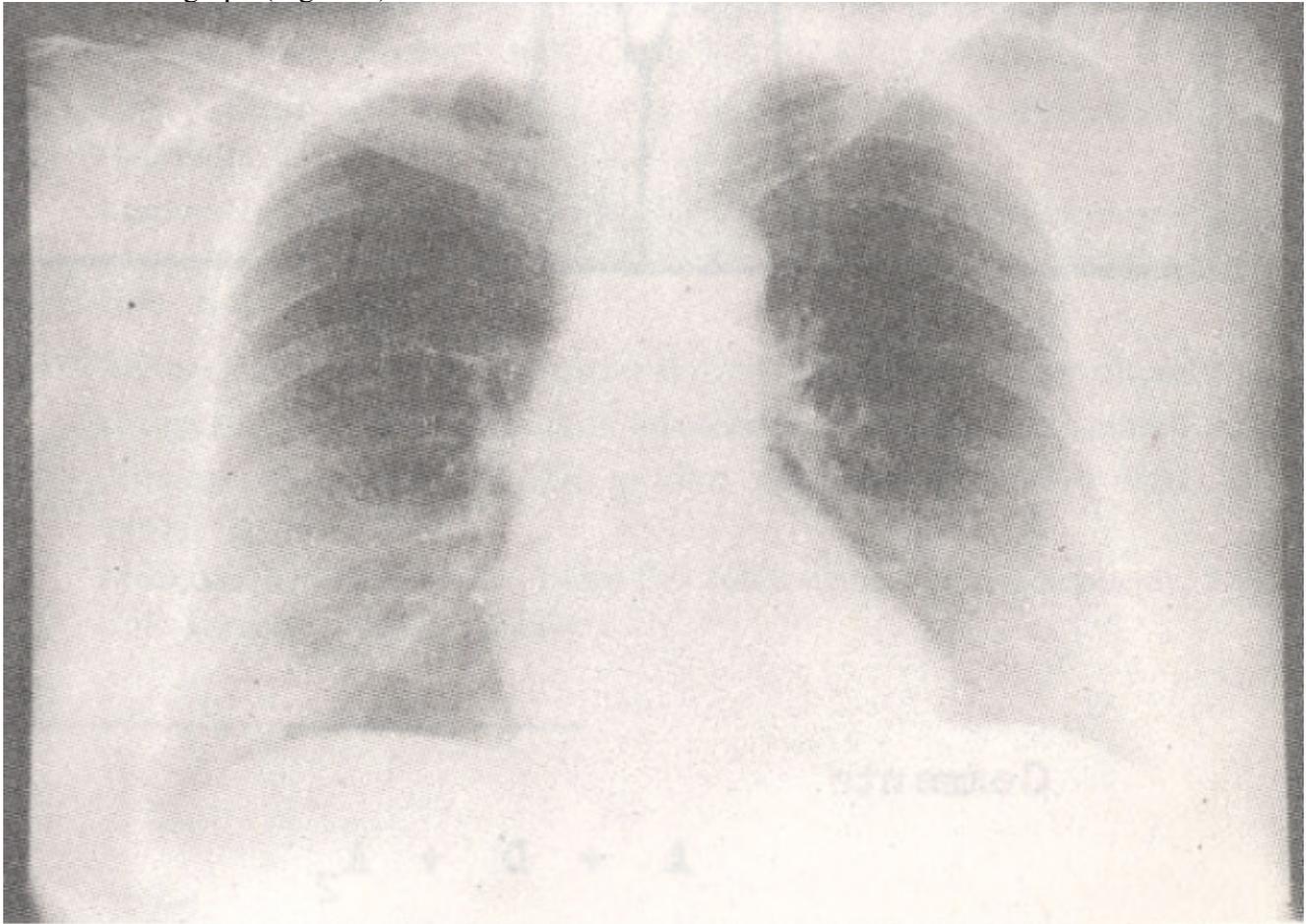


Figure 1. Nodular shadow in right lower lung field.

showed a well defined nodular shadow measuring approximately 1.5 cm in diameter in the right lower lung field. No definite calcification or cavitation was noted within the lesion. Computed tomography

(CT) of the chest (Figure 2)

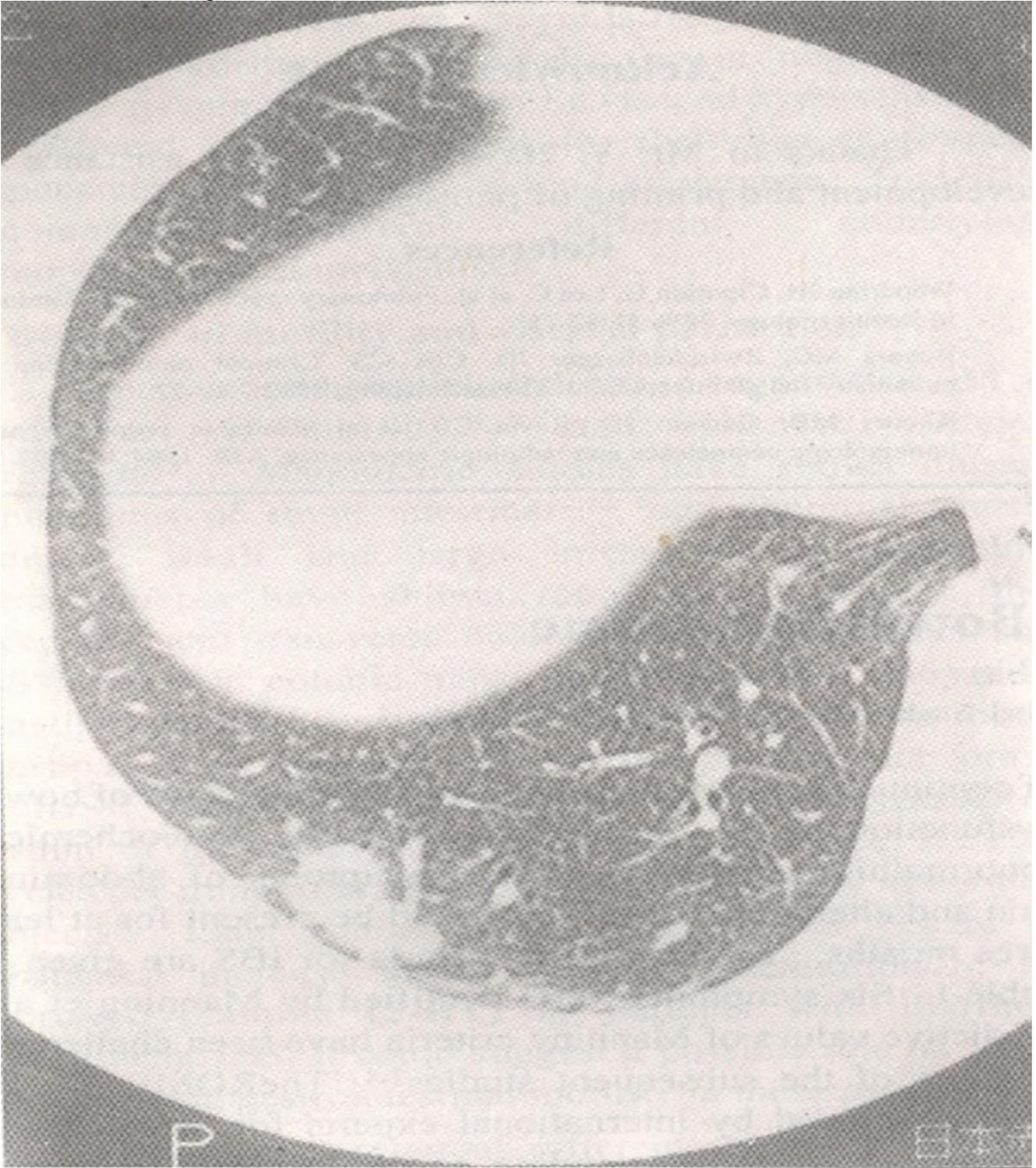


Figure 2. Sub pleural mass right lower lobe.

demonstrated a subpleural mass in the right lower lobe. Air bronchograms were seen within the lesion. The patient underwent transbronchial lung biopsy (TBLB) and a diagnosis was made.

Diagnosis

Pulmonary cryptococcosis

Discussion

Cryptococcosis, also known as torulosis or European blastomycosis, is caused by a yeast like fungus, *Cryptococcus neoformans*, which is an encapsulated, unimorphic fungus that is ubiquitous in soil and particularly abundant in pigeon excreta¹.

Cryptococcal infection can occur both in patients with normal and compromised immunity. Majority of the immunocompetent patients are asymptomatic and pulmonary lesion may heal spontaneously.

However, in patients with immunocompromised state (e.g. acquired immunodeficiency syndrome, hematological malignancies, organ transplantation, corticosteroid therapy etc.) extensive pulmonary disease is common.

In a normal host pulmonary infection with *C. neoformans* is minor and may remain unnoticed². Up to one-third of patients with definite radiological abnormalities are asymptomatic. In the remaining two-third of cases symptoms e.g. cough, sputum, chest pain, weight loss, fever etc., are present. Four main patterns of pulmonary involvement have been described in normal hosts³.

a) Cryptococcal fungal collection which radiographically appears as a lung mass. It is typically subpleural in location with no specific lobar predilection. On CT, air bronchogram can be seen within the fungus collection. This appearance must be differentiated from malignant neoplasms, either primary or metastatic, other chronic pulmonary granulomas or benign tumors.

b) Multiple pulmonary nodules are most common manifestation in normal hosts. Radiographically, nodules are typically located in a subpleural location and their size ranges from 0.5-4 cm³. Calcification within the nodules is rare.

c) Rarely patients with cryptococcosis present with signs and symptoms of acute pneumonia. Unilateral or bilateral, segmental or lobar alveolar consolidation can be seen in patients with cryptococcal pneumonia.

d) Dissemination of cryptococcosis is extremely rare in a normal host. Chest radiographs in these cases show a miliary or diffuse reticulonodular pattern.

The spectrum of clinical and radiological findings of cryptococcosis in immunocompromised hosts is often similar to that found in normal hosts. Immunocompromised patients may be asymptomatic or may have a subacute presentation of symptoms such as cough, chest pain and dyspnea that slowly worsen over a period of weeks or months. However, rapidly progressive and fulminant disease may occur. In addition, there is a greater tendency to develop cavitation, hilar and mediastinal lymphadenopathy, pleural effusion and disseminated disease e.g. meningitis and meningioencephalitis. Radiographic findings of pulmonary cryptococcosis are non-specific and distinction from entities like bronchogenic carcinoma is often difficult. Sputum culture and bronchial washing are unreliable in diagnosing cryptococcosis as *C. neoformans* may normally be present in the airway. Definite diagnosis of pulmonary disease usually requires identification of the organisms in tissue from biopsy or surgical specimen. If serum cryptococcal antigen titers are positive, disseminated disease should be suspected. Pulmonary cryptococcosis in normal host usually does not require treatment because spontaneous healing is a rule. Treatment in normal host is usually limited to those with progressive disease or evidence of disseminated disease: However, cryptococcosis in immunocompromised should be treated promptly because of high risk of dissemination.

Acknowledgement

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References

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