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Case Report

A Rare Case of Pleuroparenchymal Mucormycosis with Diabetes Mellites

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Abstract
Mucormycosis is a rare, but emerging, life-threatening, rapidly progressive, angioinvasive fungal infection that usually occurs in immunocompromised patients. Pleuropulmonary mucormycosis is relatively rare disease and maintaining a high level of suspicion is important in right clinical setting with pleuropulmonary involvement that fails to respond to antibacterial agents because early recognition of this diagnosis, along with aggressive management, is critical to effective therapy and patient survival. We present a rare case Pleuroparenchymal Mucormycosis with Diabetes.

Case Report

A 46 years old male presented with cough with scanty expectoration for two months, fever for one month and right sided chest pain for 7 days and shortness of breath for 3days. He was known diabetic since 4 years for which he was taking oral hypoglycemic drugs. There was also history of taking medication in the form of antibiotics (tab cefexime 200mg bd for 7 days) from general practioner.

There was no history of any chronic illness like hypertension, tuberculosis or asthma. There was no history of contact with tubercular pateints or antitubercular drugs intake in the past. There was no history of blood transfusion, loss of weight, history of illicit drug intake. He did not have any pets, recent travel, or substantial smoking history and also denies consuming alcohol and exposure to sex workers.

On examination, he was febrile, conscious, and oriented. His pulse rate was 110/ min, respiratory rate was 26/min, blood pressure 130/80 mm Hg and oxygen saturation was 92% on room air. There was no pallor, jaundice, oedema, clubbing

or lymphadenopathy. He was thin built with body mass index of 21.75 kg/m2.

Respiratory system examination revealed the trachea was shifted to the left , the apex beat was felt in the left hemithorax, decreased movement on right side of hemithorax, decreased vocal fremitus on right side of chest .The right chest was hyperesonant on percussion from 2nd intercostal space to 5th ics and beyond 5th ics it was stony dull and on auscultation breath sounds were decrease in right suprascapular, interscapular and mammary area and absent on right infrascapular, axillary and mammary area.

Abdominal examination, Cardiovascular and Nervous system examination were within normal limits.

Laboratory investigation showed haemoglobin 11 g/dL, white blood cells count 13000/mm3 (Polymorph 37%, Lymphocytes 63%) and Platelets 2.5 lacks/mm3. RBS 250 mg/dl, Fasting Blood Sugar 180 mg/dl and post prandial sugar was 287 mg/dl and HbA1c 9.5 %. His liver function and renal function tests were normal and Hepatitis B surface antigen, VDRL and HIV antibodies were negative. Electrocardiography (ECG) showed no abnormalities. Sputum culture for acidfast bacilli (AFB) was negative for AFB and sputum on gram stainning - numerous Neutrophils found but no organisms seen. KOH mount- no fungal hyphae/ yeast forms seen and Culture- sterile after 07 days.

A chest radiograph (figure 1) dated 01.09.2017 showed right sided lower lobe pneumonea and chest-xray (figure 2) dated 10.09.2017 showed right-sided hydropneumothorax. Hydropneumo-thorax was treated by tube thoracostomy (Figure.3). Pleural pus sent for cuture was sterile.

Patient was not improving despite of antibiotics and supportive management therfore medical thoracoscopy was planned and done on which we found soft necrotic and shaggy pleural surface. (figure. 4)

Multiple biopsies were taken. Biopsy sample were sent for histopathological examination which revealed mucormycosis.

Patient was initially treated on iv antibiotics, insulin and other supportive measures for 1 wk of hospitalisation with no response.

After getting the diagnosis of mucormycosis on pleural biopsy he was put on liposomal amphotericin and broad spectrum antibiotics continued. Patient responded after 2 weeks and became a febrile. His intercostal drainage tube was removed after 2 weeks. Liposomal amphotericin B was continued for 3 weeks at the dose of 150 mg/day.

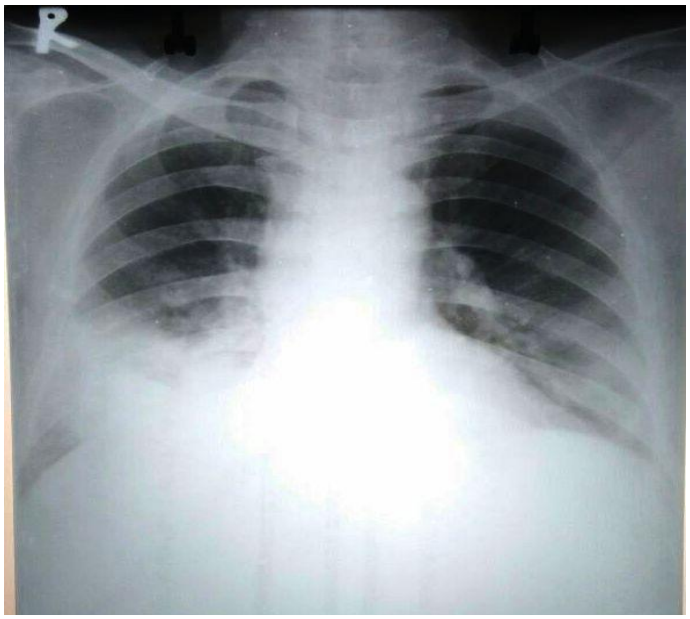

Figure : 1 Chest Xray Showing Right Lower Lobe Pneumonitis

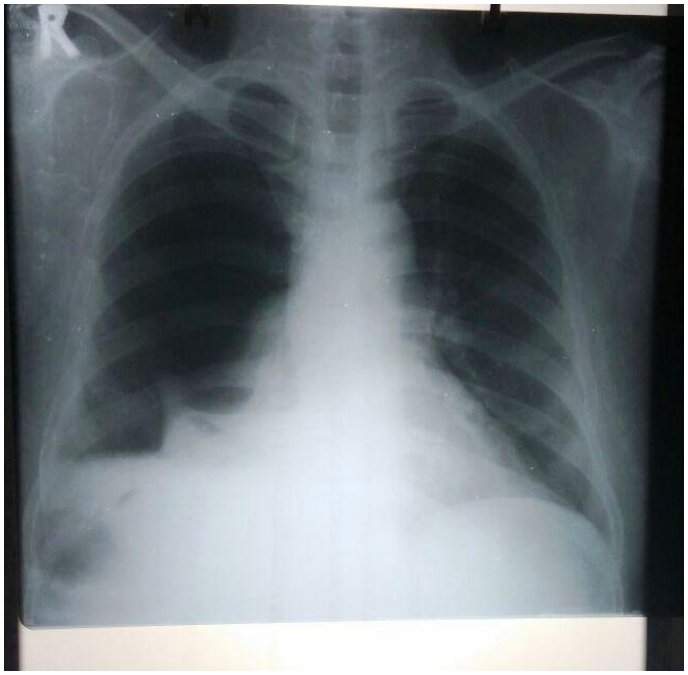

Figure 2 Chest Xray Showing Right Hydropneumothorax

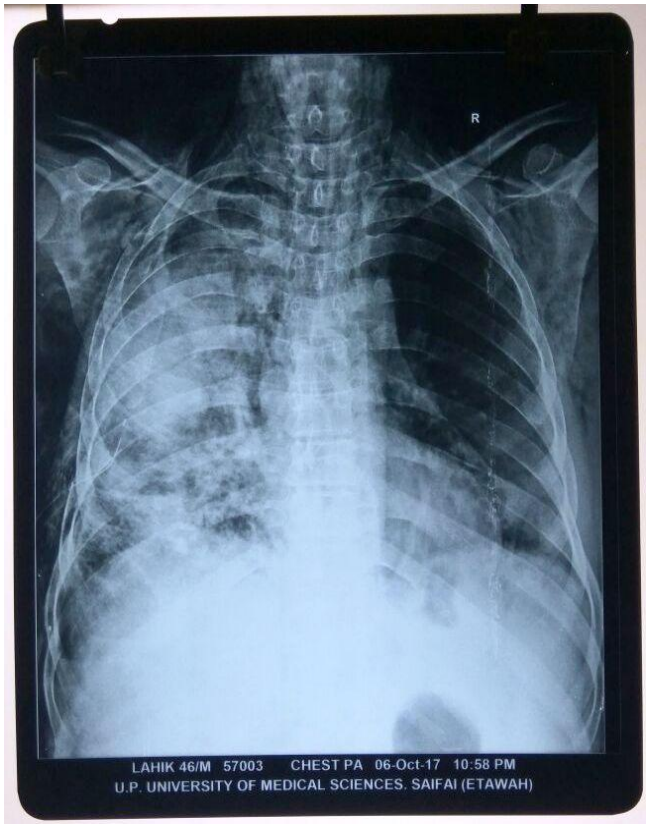

Figure: 3 Chest Xray Showing Right Sided Intercostal Drainage

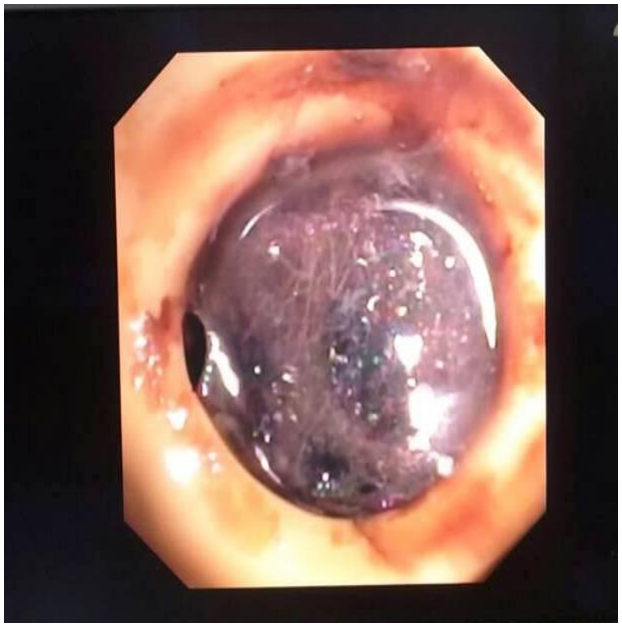

Figure 4 Thoracoscopic picture showing necrosis and shaggy pleural surface

Discussion

Fungi from the order Mucorales are the aetiologic agents of mucormycosis. Despite the name of this infection, mucor is not the most common genus recovered from patients.[1] In the normal human lung, mucorales spores are inhibited from germinating into hyphae by alveolar macrophages. However, in immunocomprised the spores germinate, hyphae develop and invades blood vessels and surrounding tissues.

Radiographic findings include focal consolidation, pulmonary nodules, Cavitary lesions with the "air crescent sign" have been described, but are rare.[2,3] The high mortality observed in pulmonary mucormycosis may be related to delays in the diagnosis, poor host response (eg, neutropenia), and limited available therapy.[4,5] Fever, hemoptysis, and tissue infarction are characteristic of pulmonary mucormycosis.[3,6]

The diagnosis of mucormycosis is based on both histopathological findings of tissue invasion by hyphae and cultures isolating pathogens of the order Mucorales, most commonly Rhizopus, Mucor, and Rhizomucor species.[2] The prognosis and outcomes of this infection have improved over the last several years as a result of early diagnosis, surgical debridement, and newer antifungal agents.[5] Use of lipid formulations at doses of 15–20 mg/kg per day maximises the amount of amphotericin B delivered to the tissues as well as the speed of its delivery. [7] Posaconazole, triazole antifungal agent, has been shown to be active against mucormycosis. The optimal duration of therapy for mucormycosis is not known precisely.[8] If possible, antifungal administration should be continued for at least 3 months after clinical and radiological cure.

Conclusion

Nonetheless, the diagnosis of fungal lung infection is most often delayed because of a simple lack of consideration of these entities by attending and consulting clinicians. The clinician must maintain a high index of suspicion during evaluation of any lung infiltration without ready explanation for which fungi may be implicated. In india tubrculosis is quite common, Therfore immunocopromised patients with pulmonary fungal infections Which were not improved On Antibiotics usually put on Antitubercular

treatment without being investigated for fungal infections by clinicians . This case evidences a positive clinical outcome in a poorly controlled diabetic treated with antifungal agents (amphotericin B). It highlights the importance of the early diagnosis, treatment, and consideration of fungal infection before making a clinical diagnosis of pulmonary tuberculosis in immunocompromised patients so that timely intervention can be done for the management of pulmonary fungal infections.

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