

Case Report**Polymicrobial Fungal lung abscess**

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Article Received: 10-08-2022**Revised: 30-08-2022****Accepted: 20-09-2022****INTRODUCTION:**

Pneumonia is an acute respiratory infection of the lung which is a leading cause of mortality in the world. According to WHO statistics of 2019 pneumonia accounts for 14 percent of all deaths in children under the age of 5 years worldwide. Pneumonia is the most common infectious cause of death worldwide. Pneumonia affects children and families all over the world with increased incidence in South Asian and Sub Saharan Africa. Reliable data about burden of pneumonia in adult populations are not readily available in view of sparse data. The incidence of pneumonia increases as the age advances.¹ Pneumonia is caused by number of infectious organisms that include viruses, bacteria and fungal. The most common cause is bacterial and the organism is streptococcus pneumonia followed by Haemophilus influenza. Among viral causes respiratory syncytial virus is the common cause. Fungi account for a very small portion of pneumonia causes.² Fungal pneumonia is caused by opportunistic or endemic fungi either due to inhalation of spores or reactivation of latent infection. Endemic fungi like histoplasma, coccidioides, blastomycosis can cause infection in healthy or immunocompromised hosts. Opportunistic fungi like aspergillus species, candida species, Mucor species tend to cause infection in patients with defects in immune system that are either congenital or acquired.³

CASE PRESENTATION:

A 53-year-old male farmer who was alcoholic came to the hospital with complaints of hemoptysis for 15 days, cough with expectoration for 3 months, low grade fever since 2 months and shortness of breath for one month. Patient was a diabetic for 3 years not on regular treatment. Patient was not a smoker. On examination the patient was conscious, oriented, febrile with grade 2 clubbing and pedal edema. Decreased breath sounds and crepts were present on right side. CT chest: Right upper lobe consolidation with cavitary lesions with bilateral pleural effusion. Patient was started on Anti Tubercular Treatment(ATT) from outside hospital for which patient was not responding. At our centre initial diagnosis of community acquired pneumonia with sepsis was made. Patient was started on INJ meropenem and INJ linezolid and repeat x ray showed increase in consolidation and development of pleural effusion. INJ linezolid was stopped and INJ clindamycin was started and pleural tapping was done and sent for analysis. Pleural fluid culture sensitivity had growth of Aspergillus Niger species. KOH mount showed septate fungal hyphae. Procalcitonin was elevated and serum galactomannan was elevated. Patient was diagnosed as polymicrobial fungal lung abscess. Intercoastal drainage tube(ICD) was inserted to drain the fluid.



Areas of consolidation with few irregular and thick walled cavitary lesions in the right upper lobe and middle lobe with few air fluid levels within. Mild surrounding ground glass opacities with bilateral pleural effusion. Mild pericardial effusion.

Patient was started on tablet voriconazole 200 mg bd, Fever subsided for 1 day. After 2 days patient started deteriorating further Patient was started on INJ

liposomal amphotericin b and meropenem were given for 2 weeks. Pleural fluid was sent for culture sensitivity again and showed growth of aspergillus and Rhizopus. Bronchial artery embolization was done in view of persistent hemoptysis. Subsequently patient improved clinically and was discharged eventually after 2 weeks.

DISCUSSION:

Necrotizing lung infections range from lung abscess to necrotizing pneumonia and pulmonary gangrene. Necrotizing pneumonia is a severe complication of community acquired pneumonia. It refers to very nonspecific process seen in various infective conditions. Most commonly caused by bacteria and rarely by fungi. Necrotizing pneumonia commonly arises due to aspiration but has various other risk factors like type 2 DM, GERD, Sinusitis, Alcoholism, Immunosuppression and preexisting lung conditions. In our case patient is a chronic alcoholic and has uncontrolled diabetes mellitus.⁴ The clinical picture in case of simple lung abscess will generally be indolent with productive cough and fever for several weeks that will fail to resolve with course of antibiotics on an outpatient basis. Radiologically it presents as a single cavity within a pulmonary infiltrate. We report a case of polymicrobial lung abscess in our patient whose culture showed *Aspergillus Niger* and *Rhizopus*. *Aspergillus* is a common fungi in the environment out of the 200 species reported only 20 are pathogenic. In healthy individuals *aspergillus* does not cause pathological lung infections due to neutrophilic killing activity against the conidia of *aspergillus*. In immunocompromised patients *aspergillus* can cause invasive pulmonary aspergillosis characterized by consolidation leading to cavitation. *Aspergillus fumigatus* is the most common pathological species. *Aspergillus Niger* have been very rarely reported to be causing IPA. In our case *Aspergillus Niger* was isolated in culture.⁵ Mucormycosis is a very rare fatal fungal infection caused by inhalation or inoculation of spores of a group of molds from *Mucor* species, *Rhizopus* species, *Rhizomucor* species. It most commonly affects immunocompromised patients and can manifest in various locations like sinuses, orbits, brain and lungs and it tends to invade vasculature hence necrosis is common feature. Consolidation and masses may show relative paucity of air bronchogram at imaging. Prompt initiation of antifungal

treatment(liposomal amphotericin B) is essential to reduce the risk of mortality as in our case.⁶ Our patient had empyema which was drained by intercostal drainage. We considered surgical management but since the patient started improving on medical therapy surgery was deferred.

CONCLUSION:

Prompt diagnosis and initiation of antifungal therapy is very important in patients with lung abscess who fail to respond to initial antibiotic therapy. Fungal etiology should always be kept in mind in patients of uncontrolled diabetes mellitus with non resolving consolidation progressing to lung abscess.

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