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SCEDOSPORIUM SPECIES IN A CASE OF ASPERGILLOMA- CASE REPORT

Respiratory Medicine

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ABSTRACT

A 50 year old female presented with complaints of cough with blood streaked sputum along with evening rise of temperature of 3 months duration in august 2019. On evaluation, sputum culture showed heavy growth of klebsiella species. Sputum AFB smear (2 samples) were negative. CT Chest showed well defined hyperdense mass lesion over posterior segment of right upper lobe and bronchiectatic changes over right upper lobe. Fibre optic bronchoscopy was done, and bronchial wash taken from right upper lobe. Bronchial wash AFB smear was negative and GeneXpert showed Mycobacterium tuberculosis not detected. Bronchial wash galactomannan (aspergillus antigen) was positive. She was provisionally diagnosed as aspergilloma and was started on oral Itraconazole. Patient also had peripheral eosinophilia and was advised diethylcarbamazine for 3 weeks. Patient improved symptomatically during treatment with antifungal but had mild hemoptysis on & off. Due to covid pandemic, she couldn't follow up regularly and had stopped antifungal drugs on her own after a period of 1 year.In the current visit, she came with complaints of dry cough for 1 month with mild hemoptysis on & off. There was no history of shortness of breath, wheezing, fever, chest pain, loss of appetite or any other symptoms. She is not a known diabetic or hypertensive. She is a farmer by occupation and had no significant family history.Her general and respiratory system examination were normal. Laboratory investigations showed serum total IgE 1632 IU/ml (normal <100), aspergillus specific IgE 10.21 kUA/l (normal- <0.35), aspergillus specific IgG 14.75 U/ml (normal <12) and had peripheral eosinophilia. Other lab parameters were within normal limits. Sputum sample was sent for fungal culture and plated onto SDA (sabourands dextrose agar) in duplicate and incubated at 25 and 37 degrees C. Culture grew a greyish white fast growing mold with a greyish-black reverse. LPCB (lactophenol cotton blue) tease mount was performed that revealed hyaline septate hyphae with oval shaped single conidia which was rounded above with truncate bases, typical of Scedosporium species. The conidia were borne in small groups or singly mostly, on elongate conidiophores which are simple or branched. Slide culture demonstrated the undisturbed morphology showing annelidic conidiation and ring like scars below the tapering end of the conidia. A repeat sample was asked for which also grew the same mould along with A.niger. AFST (antifungal susceptiblity testing) was performed by disc diffusion method. It was found to be sensitive to Voriconazole and resistant to Fluconazole. BAL Galactomannan assay was performed, which was positive confirming fungal infection. Repeat Plain CT chest was done which showed well defined hyperdense mass lesion over posterior segment of right upper lobe and bronchiectatic changes over right upper lobe (same as previous CT) . She was started on oral voriconazole based on culture reports and her symptoms subsided gradually. She was referred to cardiothoracic surgery for opinion regarding surgical resection of aspergilloma, but patient not willing for surgery.

KEYWORDS

aspergillus, scedosporium, hemoptysis.

INTRODUCTION

There are two species in genus *Scedosporium, namely Scedosporium apiospermum* and *Scedosporium prolificans. Scedosporium species are* filamentous fungi commonly present in polluted waters, sewage and soil. *Scedosporium species are present as* coloniers in previously damaged lung parenchyma as in old pulmonary tuberculosis. Scedosporium causes broad spectrum of clinical diseases called Scedosporiosis. The involvement can be as mild as transient colonisation of the respiratory tract to more severe involvement such as allergic bronchopulmonary reaction, invasive localized or disseminated disease. Extrapulmonary manifestations like osteomyelitis, endocarditis, septic arthritis, skin and soft tissue infections with extension to bone (mycetoma); peritonitis; neural involvement like meningoencephalitis; meningitis and brain abscess are also caused by *Scedosporium species*.[1]

Clinicoradiological features of pulmonary *Scedosporium* and *aspergillus* species are similar in most of the cases. As Scedosporium shows resistance to most of the antifungal drugs, the antifungal spectrum varies between these species. Hence, it is essential to distinguish between these fungal infections to allow for appropriate treatment[2].

Case Report

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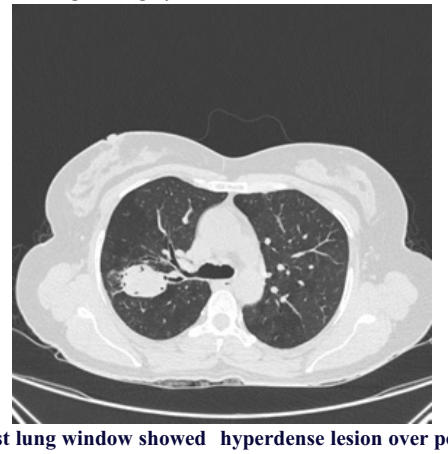
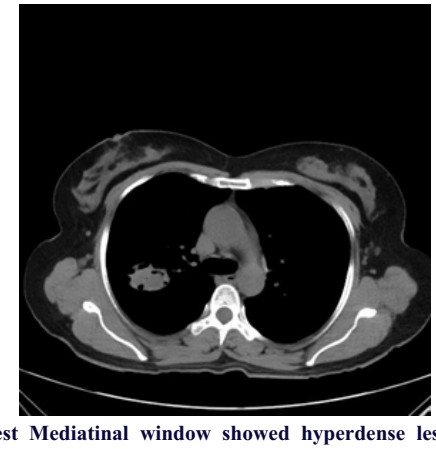
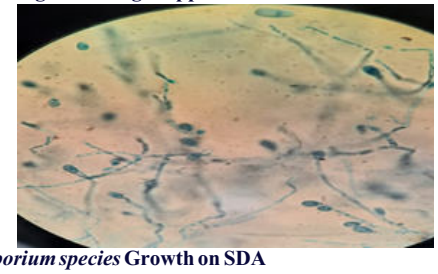


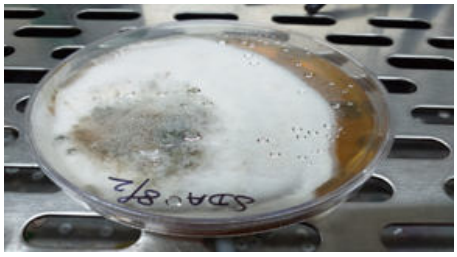
CT chest lung window showed hyperdense lesion over posterior segment of right upper lobe with bronchiectatic changes



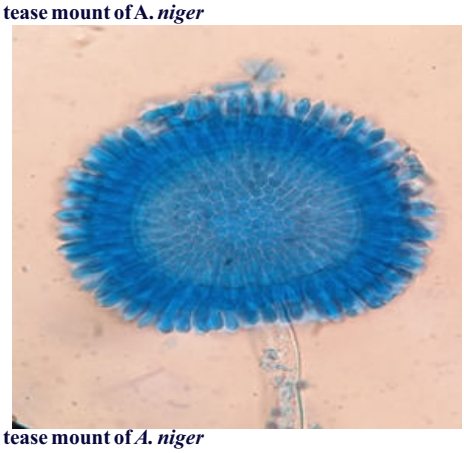
CT chest Mediatinal window showed hyperdense lesion over posterior segment of right upperlobe.



***Scedosporium species* Growth on SDA**



LPCB tease mount of A. *niger*



LPCB tease mount of *A. niger*

DISCUSSION

Pulmonary mycetoma is characterised by presence of cavitary lesions containing fungal balls. Pulmonary mycetoma or aspergilloma due to *Aspergillus* spp. infection is frequently associated with tuberculosis or NTM infection[1]

Aspergilloma has been reported in about 25% of patients with chronic pulmonary aspergillosis. The estimated global 5-year period prevalence of aspergilloma is 18/100000.[3] In patients without preexisting parenchymal disease , aspergilloma is rare, reported as 0.13%. In patients with immunodeficiency, invasive aspergillus disease is more common but aspergilloma is uncommon in HIV infected patients.[4]

Also aspergilloma is reported in 24.3% of cases of *S. apiospermum* infection with pulmonary involvement. It was found to occur more frequently in individuals with tuberculosis or in those with an immunocompromised condition such as solid organ transplantation, haematological malignancy, or chronic corticosteroid use [1]. Coinfection between scedosporium and NTM has also been reported in few cases[5].

The predominant symptom of pulmonary *Scedosporium* mycetoma is haemoptysis as was present in this case, which is also the most common symptom in pulmonary aspergilloma. Secondly the radiological findings of pulmonary *Scedosporium* mycetoma mimic those of aspergilloma [1]. As the clinical features of both species remains the same , it is of utmost importance to distinguish between both species as clinical management differs [2]. *Scedosporium spp* is resistant to many antifungal agents including amphotericin B and thus poses a great challenge in deciding the treatment options[2]

Voriconazole remains the first-line antifungal agent for the treatment of scedosporiosis species [2], but the exact duration of this therapy is not known. [1, 2]. This patient was started on voriconazole based on culture reports. Previous studies observed that out of 75 patients that suffered from pulmonary intracavitary colonization due to scedosporium, 18 patients were managed surgically, and all survived and mortality was about 12% , suggesting that surgery remains the treatment of choice for pulmonary mycetoma due to scedosporium.[7] Our patient was referred to cardiothoracic surgery for further management.

CONCLUSION

Scedosporium infection is a deadly disease which is often difficult to diagnose and treat. The incidence of scedosporium infections in immunosuppressive patients have increased. As scedosporium is one of the agents causing pulmonary mycetoma, clinicians should be aware of the possibility even in patients who are immunocompetent.

Identification of pathogen is critical for accurate diagnosis of *Scedosporium* infection, and also for further management of the disease.

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