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Case Report

Case report of pulmonary nocardiosis in a patient of right renal transplantation

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ABSTRACT

Nocardiosis results from infection with bacteria of genus Nocardia, which are saprophytic aerobic actinomycetes that commonly reside in soil relatively and are inactive on standard biochemical tests. Pulmonary and systemic nocardiosis is common in adult males, almost all being sporadic, common in tuberculosis endemic regions and usually seen in individuals with deficient cell mediated immunity. It may present as pneumonia, empyema, pericarditis, mediastinitis, laryngitis, peritonitis, and meningitis. Diagnosed with sputum or pus for branching beaded gram positive filaments which are 1 micron meter wide and 50 micron meter long.

A male immunocompromised patient presented with respiratory symptoms. Patient was evaluated elsewhere and received multiple courses of antibiotics. On admission in our facility HRCT thorax followed by fibre optic bronchoscopy was done. Bronchoalveolar lavage was sent for microbiological analysis. Acid-fast in kinyoun and Ziehl Neelsen stain came positive for Nocardia and was managed with trimethoprim-sulfamethoxazole which is the treatment of choice.

1. Introduction

Nocardia is a rare disease with mortality <20% in isolated pulmonary disease. Commonly seen in immunocompromised like – AIDS, graft recipient, lymphoma, and on glucocorticoid therapy.[1] Since the year 2000, molecular phylogenetic techniques, based on 16S rRNA gene sequences, have identified more than 100 Nocardia species, many of which are implicated in human disease. Nocardia most commonly associated with human disease are of 9 species N. abscessus, N. bravicatena, N. nova comlex, N. transvalensis, N. farcinica, and others.[2,3] Nocardiosis follows inhalation of fragmented bacterial mycelia. Histological feature being absent with extensive neutrophilic infiltrates and prominent necrosis. Mortality rate were 41% for pulmonary nocardiosis and 64% for disseminated nocardiosis; central nervous system dissemination had 100% mortality.[4]

2. Case Report

A 41 years old male presented with complaints of productive cough, streaky haemoptysis, exertional breathlessness, and intermittent fever for 10 days. He had right renal transplantation, was on maintenance tacrolimus, mycophenolate mofetil, and prednisolone.

Patient had attended a medical facility, where he was admitted and relevant investigations were done. High Resolution CT thorax showed right lower lobe pleural collection with 'bronchus cutoff'. CT guided biopsy was done and histopathological examination suggested organizing pneumonia.

Patient thereafter attended our facility, where on general examination; the patient was alert conscious cooperative.

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Pulse rate- 86/min, blood pressure- 140/70mmHg, oxygen saturation- 96% in room air. On auscultation – Bilateral vesicular breath sounds with basal crepitation [right more than left].

On admission blood investigations were suggestive of procalcitonin 12.9 ng/mL, C-reactive proteins 125 mg/dL, urea 64 mmol/L, creatinine 2.1 mg/dL, haemoglobin 13.5 g/dl, total WBC count 30.4 × 10^9/L, and tacrolimus levels 20.9 ng/mL.

Patient commenced on IV antibiotics, nebulized bronchodilators and proton pump inhibitors. CT thorax showed right lower lobe and left upper lobe consolidation. Sputum AFB stain and Gram stain came negative. Given his immunocompromised status, bronchoscopy was performed under aseptic precautions and bronchoalveolar lavage (BAL) samples were sent for analysis. BAL came negative for cytology, fungal stain and geneXpert for Mycobacterium tuberculosis. AFB stain showed beaded branching filaments. Gram Stain and AFB stain by kinyoun method confirmed Nocardia Species. Patient was commenced on sulfamethoxazole- trimethoprim and routine medicines tacrolimus and prednisolone continued. Patient's clinical condition improved and infective markers reduced with total WBC count 9.13 × 10^9/L, and C-Reactive proteins 2.0 mg/dL on the day of discharge. Patient reviewed in OPD after 10 days. He was relieved of his symptoms.

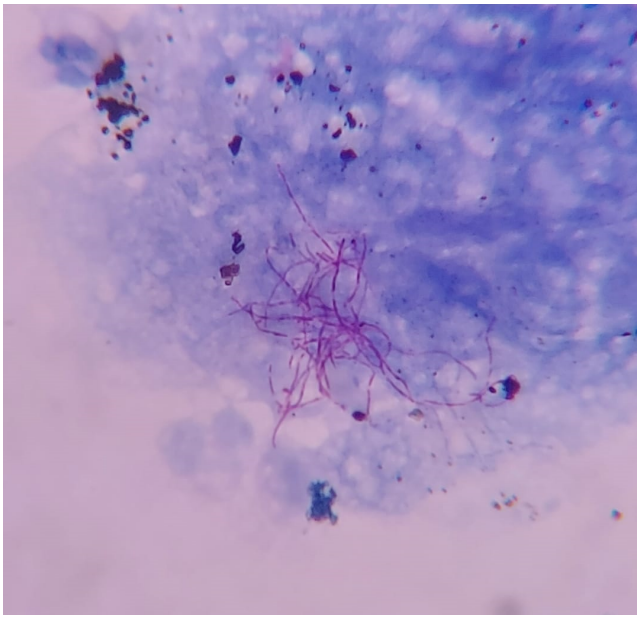

Fig. 1:

3. Discussion

Pulmonary nocardiosis may have acute, subacute or chronic presentation with isolated bronchopneumonia or lobar consolidation, nodules, abscess, cavitation or pleural effusion in imaging.[5,6] CNS imaging should be considered due to the possibility of developing brain abscess. It can be cultivated in blood agar or sabourauds media under aerobic conditions. PCR is increasingly used in diagnosis.

Trimethoprim-sulfamethoxazole is usually the drug of choice along with other options like minocycline, amikacin, ceftriaxone, cefotaxime, imipenem, tigecycline, fluoroquinolone, and linezolid.[7] Continuation phase of oral therapy should be done to prevent relapse. Immunocompetent individuals should receive six months of therapy.[8]

4. Conflicts of Interests

None declared.

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None.

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