

Correspondence

***Nocardia* pyopneumothorax in an immunocompetent patient**

Sir,

Pulmonary nocardiosis is an uncommon disease that usually occurs in patients with underlying chronic debilitating diseases or immunodeficiency. Pleural involvement in nocardiosis is rarely reported from India¹⁻³. Nocardiosis is most commonly (80%) caused by *Nocardia asteroides*⁴. The majority of pulmonary nocardiosis caused by *N. asteroides* occurs in patients with impaired cell mediated immunity. It usually occurs in HIV positive patients, patients receiving immunosuppressive therapy and those taking long-term high dose corticosteroid therapy⁴. Mostly pulmonary nocardiosis is present as consolidation, though literature reveals 50 per cent cases with pleural involvement and 25 per cent cases with associated empyema⁵. Very rarely pyopneumothorax has been reported with pulmonary nocardiosis from India³. We present here a case of pyopneumothorax due to *N. asteroides* in an immunocompetent patient.

A 32-yr-old previously healthy man was admitted to All India Institute of Medical Sciences, New Delhi, a tertiary care hospital with one month history of cough with expectoration, low-grade fever and dyspnoea. The patient was a known case of rheumatic heart disease (RHD) with severe mitral valve stenosis (MS) that was diagnosed one year back. He had no history of chest pain, wheezing, haemoptysis or exposure to tuberculosis. There was no past history suggestive of diabetes mellitus or any other immunocompromised state. Tests for human

immunodeficiency virus (HIV) types 1 and 2 antibodies were negative. Physical examination of the chest revealed diminished breath sounds and dullness to percussion on the right lung region. Examination of the other systems was unremarkable. A diagnosis of community-acquired pneumonia was made on the basis of raised total lymphocytic count (11,800/ mm³) and contrast enhanced CT (CECT) scan of the chest, that revealed loculated right sided hydropneumothorax with consolidation. On the basis of clinical and radiological examination empirical therapy including ceftriaxone 2 g i.v. twice daily and azithromycin 500 mg i.v. once daily, was started.

CT scan guided aspiration was done and pus samples were sent to the Microbiology laboratory. Gram's stain, Ziehl-Neelsen (ZN) stain, modified ZN stain and 10 per cent potassium hydroxide (KOH) stain did not reveal any bacteria, mycobacteria or fungus. This may be due to the presence of very few organisms in the clinical material. Sample was cultured on blood agar, chocolate agar, Lowenstein-Jensen (LJ) and Sabouraud's dextrose agar (SDA) media and incubated at 37°C. Dry, wrinkled, white coloured folded colonies appeared on chocolate agar after 4 days of incubation and then subsequently on other media, suggesting *Nocardia* spp. This was further supported by the observation of Gram-positive beaded branching filaments seen in the microscopic examination on Gram stain of the secondary smears prepared from these colonies. They were acid fast on modified ZN stain. The organism

was further identified as *N. aesteroides* on the basis of colonial morphology and biochemical tests⁶. Therapy was switched to trimethoprim-sulphamethoxazole (TMP-SMX) (1:5) tablets and the patient was discharged with the same therapy for another 6 months.

Our case was a rare case of pulmonary nocardiosis with pyopneumothorax in a previously healthy immunocompetent adult with RHD. Such cases are often misdiagnosed as tuberculosis, lung malignancy or invasive fungal infection. Thus, our findings highlight that pulmonary nocardiosis should also be considered in the differential diagnosis of refractory community acquired pneumonia presenting with empyema and hydropneumothorax, even in an immunocompetent patient. Definitive diagnosis of *Nocardia* requires the isolation and identification of the organism from a clinical specimen. Since, *Nocardia* spp. are slow growing organisms, the microbiology laboratories should be alerted to enhance the recovery of this organism. If the clinical suspicion is not there, the cultures in the routine microbiology laboratory are discarded after a couple of days hence the diagnosis may be missed. High index of suspicion by the clinician and the laboratory personnel would help in proper diagnosis, and thus delay in starting the appropriate antibiotics could be prevented.

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