Case Report

Unusual presentation of pulmonary nocardiosis as pyopneumothorax in case of pemphigus vulgaris

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Abstract

Nocardia is a partially acid fast, gram positive bacteria. Its microbiological appearance mimicks that of mycobacterium tuberculosis, hence it gets misdiagnosed on many occasions. It very commonly inflicts immunocompromised hosts. We are reposting a case of a 48 yr old female, a known case of pemphigus vulgaris and Diabetes Mellitus on treatment with steroids, Oral hypoglycemic agents and immunosup presants since past 15yrs who presented to us with right sided pyopneumothorax. she was treated by inserting PCNL catheter on the right side posteriorly and about 200ml of pus was drained. The culture and sensitivity report of the pus showed the growth of Nocardia species. She was treated with intravenous antibiotics and discharged with a long course of oral antibiotics sensitive to nocardia. On follow up visit she was symptomatically much better and chest CT showed almost complete resolution. The aim of this case report is to keep the possibility of nocardia in mind while treating any pyogenic lung infection, especially in a immunocompromised host.

Key Word: pulmonary nocardiosis, pyopneumothorax.

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INTRODUCTION

CASE: A 48 year old female known case of Phemphigus Vulgaris on immunosuppressive therapy with Tab Prednisone and tab Azathiopyrine in varying doses since last 12 years, also a known case of Diabetes Mellitus on oral hypoglycemic agents. Patient had sudden onset breathlessness and right sided chest and back pain on 1st July 2015 for which she was admitted in a private hospital at Jalna, Maharashtra India. Patient was detected to have right sided spontaneous pneumo-thorax, treated with inter-coastal drain (fig 1 and fig 2). She was treated with antibiotics and was discharged. She presented to us on 18 July 2015 for complain of persistent right sided chest and back pain, fever and exertional breathlessness. On examination vitals were pulse: 96/min; BP: 130/90 mm hg; RR: 28/ min; on auscultation crepitations were present in right infra-scapular and infra-axillary area. Chest xray done on 18/7/15 was suggestive of right sided hydropneumothorax (fig 3).

Patient was further investigated further with CECT chest, which also confirmed the presence of multiloculated fluid filled cavity situated posteriorly(fig 4). As the lesion was loculated and situated posteriorly,decision was taken to put pigtail (PCN)catheter instead of ICD.Around 200 ml of pus was drained after insertion of pigtail catheter (fig 5 and 6).

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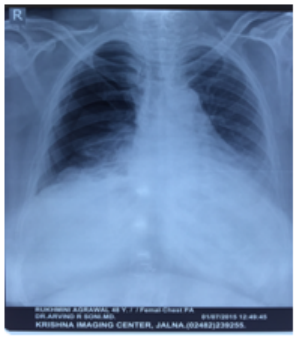
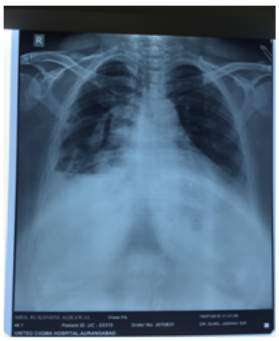


Figure 1


Figure 2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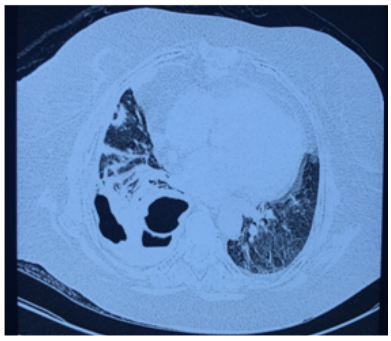
Figure 4

Figure 5

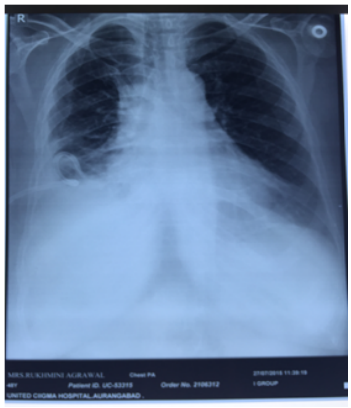
Figure 6

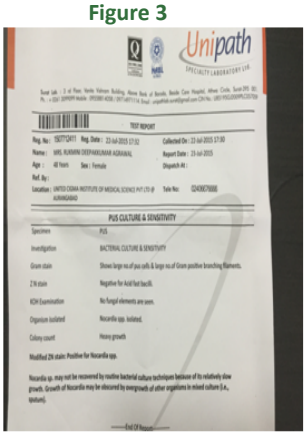

Figure 7


Figure 8

Legend

Figure 1: showing right sided PNEUMOTHORAX

Figure 2: Post ICD insertion

Figure 3: Right sided hydro-pneumothorax

Figure 4: CECT chest multiloculated fluid filled cavity situated posteriorly

Figure 5: Post pig tail catheter day 1

Figure 6: Post pig tail catheter day 7

Figure 7: The pus culture and sensitivity report

Figure 8: CECT chestsignificant improvement and resolution of parenchymal lesions

The pus culture and sensitivity report was suggestive of nocardia species (fig 7). The patient was treated with injection Meropenum and Linezolid for 12 days and then discharged with tab feronem 200mg tds and tab septran ds bd for 45 days. On follow up, patient was symptomatically much better and repeat CECT chest showed significant improvement and resolution of parenchymal lesions than previous (fig 8). This is a unusual presentation of pulmonary nocardiosis which we confirmed bacteriologically and treated with proper antibiotics leading to almost complete resolution of the infection.

DISCUSSION

Nocardia is a genus of weakly staining **Gram-positive,** catalase-positive, rod-shaped bacteria. It forms **partially acid-fast** beaded branching filaments (acting as fungi, but being truly bacteria). It has a total of 85 species. Some species are non-pathogenic while others are responsible for nocardiosis.

Genus : aerobic Actinomyctes G+ branching filamentous bacteria

Subgroup: aerobic nocardiform actinomycetes - *Mycobacterium*; *Corynebacterium*; ***Nocardia***; *Rhodococcus*; *Gordona*; *Tsukamurella* Pulmonary nocardiosis is an important cause of opportunistic infection in immunosuppressed patients, and the incidence of this infection is increasing. Pulmonary nocardiosis manifests as an acute, subacute or chronic infection. It is caused by bacterium of the genus Nocardia, most commonly caused by *Nocardia asteroides* which is a gram positive bacterium. Other less common strains include *Nocardia farcinica* and *Nocardia otitidiscaviarum*. It is usually acquired by direct inhalation of contaminated soil.

Risk Factors

most Commonly people who have weakned immune system for example : long term steroids, Malignancy, HIV, Cushing disease, An organ transplant, Having pre existing lung disease(copd).

Pulmonary presentation

Pulmonary event may be self limiting and transient or may progress to acute,subacute, or chronic process which mimics TB, mycotic infection, malignancy. Fever, fatigue, anorexia, weight loss, productive cough, dyspnea, occ hemoptysis. Confluent bronchopneumonia may progress to total consolidation with or without abscess formation and pleural involvement, Empyema recorded in 25% Cases. organism can disseminate to virtually any organ especially the central nervous system (CNS) (about 33% of patients)

General approach to Diagnose the Infection with Nocardia

Bronchial wash specimens sent to laboratory were to be examined microscopically by gram stain. If numerous gram positive branching bacilli were observed raising suspicion of Nocardia. A partial acid-fast stain will confirm suspicions that the organism was indeed partially acid-fast and consistent with **Nocardia.** Gram stain results and presumptive diagnosis were to be reported

Investigations

Radiological evaluation

Lung consolidation- peribronchial distribution, mediastinal and hilar lymphadenopathy, Cavitations. Nodules and masses- solitary/multiple nodules associated with bronchial wall thickening and endobronchial debris. Disseminated Pulm nocardiosis consists of nodules of various sizes. Pleural effusion, Chest wall extension-abscess or empyema necessitans.

Other Investigations

Bronchoscopy- BAL and washings, Lung biopsy, Sputum culture, No Serological tests are available for the clinical use.

Diagnosis

The diagnosis of *Nocardia* requires isolation and identification of the organism from a clinical specimen like bronchial washings, bronchial lavage fluids, sputum samples, abscesses.

Treatment

Sulphonamides- sulphamethoxazole and trimethoprim are the treatment of choice. Other drugs- cycloserine, clindamycin, ampicillin, amikacin, levofloxacin, linezolid, imipenem Duration- 6-12 months.

CONCLUSION

In a country like ours where mycobacterium tuberculosis is one of the commonest pathogen giving rise to lung infections like pyopneumothorax,pulmonary nocardiosis, although rare, should always be thought of as a causative organism of pyogenic lung infections specially in immunocompromised hosts. Microbiological appearance of Nocardia mimicks that of Mycobacterium Tuberculosis bacilli. So there are chances of misdiagnosis of nocardiosis as Pulmonart TB. Hence, it is very important to suspect and diagnose nocardiosis as it is more often than not a completely treatable condition.

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