Nocardia in psoas abscess: A rare presentation

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ABSTRACT

We report a case of primary psoas abscess caused by *Nocardia* in an immunocompetent patient who presented with low back ache with pain radiating to both legs. A suspicion of nocardiosis was made based on Gram's staining and modified acid fast stain of material obtained by ultrasound guided aspiration. The patient showed remarkable recovery after treatment with co-trimoxazole. Quick identification by simple Gram's staining and modified acid fast staining helped in timely diagnosis and treatment of the patient.

Keywords: Immunocompetent, *Nocardia*, Psoas abscess

INTRODUCTION

Infections caused by *Nocardia* spp. are infrequent but challenging to the clinicians. They cause a variety of diseases in both the normal and immunocompromised patients.[1] In a state like Punjab where agriculture is the main occupation of the majority of the population, infections by soil saprophytes must always be considered.

CASE REPORT

A 60 yrs old female patient was admitted to Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, in November 2012, with history of severe low back ache for last 15 days. The pain was radiating to both legs and more to the right one. Pain was so severe that the patient was unable to stand. There was no history of hypertension, diabetes mellitus and asthma. On local examination, a swelling was present on lower back region.

Laboratory investigations showed haemoglobin of 8.9 g/dl, WBC count of 16000 cells/µl with neutrophilic leukocytosis (86% neutrophils, 10% lymphocytes, 1% monocytes, 3% eosinophils). Erythrocyte sedimentation rate was 136 mm/Hg and Mantoux test was negative. Renal function and liver function tests were within normal limits. Chest radiographs showed no abnormalities. Ultrasound guided FNAC was performed and the aspirate was sent to the departments of Microbiology and Pathology. Cytology report showed mainly neutrophils with a necrotic background. Gram's stain of the smear from the aspirate showed presence of slender, weakly Gram positive, branching filamentous bacilli. Modified Ziehl Neelsen (ZN) (1% suphuric acid as decolourizer) stained smear showed numerous acid fast branching filamentous organisms morphologically resembling *Nocardia* species. (Figure I) Based on the findings of Gram's stain, modified ZN stain and cytology, a provisional diagnosis of Nocardial infection was made. The micro-organism was later confirmed as *Nocardia* spps by its growth on LJ medium (Figure II). Accordingly

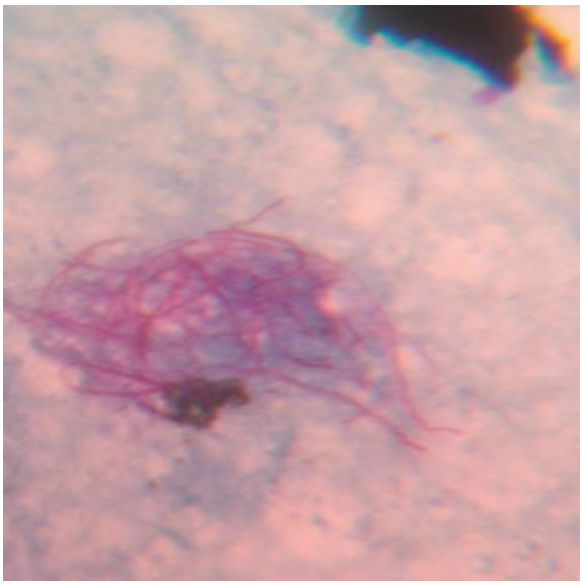

Figure I: Modified Ziehl Neelsen stained smear showing thin branching filamentous acid fast bacilli

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Figure-II: Growth of Nocardia on LJ medium

the patient was started on high dose of intravenous cotrimoxazole.

Meanwhile MRI imaging of the lumbosacral region of the patient was done which showed multifocal abscess involving paravertebral, psoas, posterior paraspinal, presacral and right gluteal region without significant vertebral marrow oedema. CT scan of thorax and abdomen did not reveal any other focus of infection. These findings pointed towards a primary psoas abscess by *Nocardia* spp. in an immunocompetent patient which is a rare possibility.

Being multiloculated, therapeutic aspiration could not be performed. So the patient was continued on parenteral therapy for one month after which some improvement was noticed. She was discharged after six weeks on oral treatment but the patient was lost to follow up.

DISCUSSION

Nocardia species are ubiquitous in the environment as saprophytic components in water, soil, dust, decaying vegetation and faecal matter.[2] *Nocardia* usually is an opportunistic pathogen with majority of infections occurring in patients with immunosuppressive conditions. However, upto one third of patients with nocardiosis are immunocompetent.[3] In this case the patient is immunocompetent without any associated illness and the source of infection could not be traced.

The clinical forms include pulmonary involvement, skin or soft tissue infection and disseminated forms with brain and pulmonary lesion. Primary nocardial infection includes pulmonary and cutaneous and/or subcutaneous lesion. Disseminated disease is defined by the identification of nocardial infection in two or more organs. Less frequent clinical presentations include peritonitis, epididymo-orchitis, iliopsoas & perirectal abscesses, pericarditis, endocarditis, septic arthritis and osteomyelitis.[1] *Nocardia* as the causative agent for a primary psoas abscess, as reported in this paper is an uncommon finding reported only in few studies.[4] The tendency for the initial pulmonary focus of nocardiosis to clear spontaneously may obscure the source of subsequent metastatic infection and thus make it appear that primary nocardial infection is taking place.[5]

Clinical and radiological features are not pathognomic for nocardial infection, thus smear and culture remains the principal mode of diagnosis.[6] Microscopy involves Gram's stain and modified acid fast staining of specimen. Gram's stain is extremely important because the organism is usually missed with routine acid fast staining and culture may require prolonged incubation before appearance of typical colonies. *Nocardia* spp. appear as beaded gram positive, thin, branching, filamentous organism. In modified acid fast stain they usually appear as partially acid fast filamentous bacilli.[6]

Successful therapy requires the use of antimicrobials in combination with appropriate surgical drainage. Sulfonamides have been the antibiotics of choice either alone or in combination with other antimicrobials.[2] Susceptibility testing should especially be considered in refractory cases.[6] Therapeutic aspiration is generally inadequate in patients with thick walled multiloculated abscesses, which contain free flowing pus including patients with mycetoma.

In a tuberculosis endemic country like India, nocardiosis is often misdiagnosed as tuberculosis. Lack of laboratory support or failure to communicate the clinical suspicion of nocardiosis to the microbiology laboratory could be other reasons for the under diagnosis of this condition. This case exemplifies the need to know the clinico-epidemiological profile of nocardial diseases and the importance of correct microbiological diagnosis for the appropriate treatment of the condition.

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