CASE REPORT

Primary Cutaneous Nocardiosis with Epidural Abscess Caused by Nocardia brasiliensis: A Case Report


Departments of Microbiology, Pathology* and Neurology**
Nizam’s Institute of Medical Sciences,
Hyderabad - 500 082, India.

Summary

Dissemination of primary cutaneous nocardiosis is a rare event. An interesting case of a 20 year old female labourer with progressive weakness in both the lower limbs and large multiple subcutaneous abscesses over the back, since 4 years, is presented. MRI showed an epidural abscess compressing the cord. Histopathology of skin lesions suggested a chronic suppurative lesion. Microbiological tests on the aspirate from the skin lesion identified the causative organism as Nocardia brasiliensis.

Key words: Nocardiosis, Mycetoma, Trauma.

Introduction

Nocardial infection or nocardiosis in humans, often considered infrequent, is being increasingly encountered in clinical practice. The clinical manifestations and the severity of the disease and the prognosis in an infected patient are extremely variable. These are mostly determined by certain factors such as the route of infection and the immune status of the patient. Although, the lungs are the primary organs affected by the nocardia species, cutaneous nocardiosis also occurs as a primary disease seen in an apparently immunocompetent individual. The commonest predisposing event in all the reported cases of primary cutaneous nocardiosis has been a local trauma caused by thorns or splinters, resulting in implantation of the soil saprophytes, such as the members of the genus nocardia, in the skin.

The authors report an interesting case of primary cutaneous nocardiosis involving the back and presenting with signs of cord compression due to an epidural abscess caused by Nocardia brasiliensis that probably metastasized from the primary lesion.

Case Report

A 20 year old female, presented with weakness of both lower limbs of 3 weeks duration. She had become bedridden for the past 5 days. Three weeks
before admission, her 32 week old pregnancy had to be terminated because of severe pre eclampsia. Three days prior to the termination of pregnancy, she experienced weakness and heaviness of both the lower limbs. Since then, she had difficulty in initiating micturition. She noticed numbness of both the lower limbs with the upper level at the nipples. She was unable to get up from bed and stand without support at the time of admission. She also gave a history of intermittent fever.

A labourer by occupation, the patient remembered to have often been pricked or pierced by twigs from the bundles of firewood that she used to carry regularly over her shoulder. Over the past 4 years, she had developed large, multiple subcutaneous abscesses over the back that temporarily regressed with incision and drainage of pus or total excision of the lesions, on several occasions. There were frequent relapses and remissions of the lesions inspite of the therapy. Over the years, multiple sinuses developed over the back, which increased in number with pregnancy.

On examination, the patient was conscious, coherent and afebrile. Pulse rate was 84/minute and blood pressure was 170 /110 mm Hg. Multiple healed and also discharging sinuses were present over the upper 2/3rd of her back (Fig. 1). The healed sinuses were depressed and folded. There was wasting of the small muscles of the hand and the peroneal muscle of both the lower limbs. There was complete loss of power in the distal muscles of both the lower limbs and in the hip muscles. The upper limbs had 3/5 power. There was generalised hyper-reflexia with ankle and knee clonus and extensor plantars. There was sensory deficit till T 7 level.

A diagnosis of actinomycosis and myeloradiculopathy was made. She was started on injection crystalline penicillin, 20 lakh units 4 times per day along with supportive therapy. She had hemoglobin of 6.5 g% and erythrocyte sedimentation rate of 150 mm in the first hour. All the other laboratory parameters including peripheral smear and biochemistry were within normal limits. ELISA for HIV was negative. A radiograph of the chest did not reveal any abnormality in the lung fields. MRI of the spine showed multiple areas of cord compression with a massive para vertebral shadow (Fig. 2) that had features suggestive of an abscess. A biopsy from the skin lesions showed features consistent with actinomycosis of the skin along with suppurative inflammation. Aspirate from the open sinuses was processed as per standard protocols used for microbiologic studies. After 15 days of incubation, scanty pale and dry colonies began to appear on the culture slants. These were identified as N. brasiliensis. She was put on trimethoprim – sulfamethoxazole therapy. However, she refused further hospitalization and was discharged on request.

Discussion

This case is being reported for the rare manifestation of a primary cutaneous nocardiosis disseminating to the epidural space. The incidence of primary cutaneous nocardiosis was thought to be relatively uncommon, with case reports appearing in literature sporadically. However, this form of nocardiosis is now considered to be the commonly encountered form of nocardiosis. The lesions are indolent and slowly progressive. There are four clinical types of cutaneous nocardiosis – mycetoma, lymphocutaneous infection, suppurative skin infection and secondary cutaneous infection with disseminated disease. Among the several species of nocardia causing cutaneous...
infections, N. brasiliensis is the commonest species isolated.8-10

The infective process is initiated by local trauma, such as a puncture wound caused by a thorn or a splinter, during a variety of outdoor activities.2,5,10-13 The saprophytic nocardia species, present on these materials, are implanted in the puncture and initiate the infection.2,3,5 The typical pathologic feature is a chronic granulomatous inflammatory reaction, which may progress with formation of abscesses.4 In our patient, the organisms probably would have gained entry into the skin through the multiple splinter wounds that she sustained while carrying wood on her shoulders. Beaman et al reported a similar case.5 Their patient, too, was infected through firewood that she used to carry on her shoulders, resulting in similar kind of skin lesions, as in the present case.

Dissemination is often a late event in nocardiosis and is most frequently seen in pulmonary nocardiosis.5 However, dissemination may occur very rarely from primary cutaneous lesions to anatomic distant sites. In such cases, the central nervous system is the most common site of involvement resulting in cerebritis or abscess formation. Disseminated nocardiosis must be considered whenever the nocardial abscesses are found at two or more locations. The abscesses enlarge by direct extension of the nocardial filaments through the tissues.5 In our patient, the organisms probably spread hematogenously from the primary skin lesion to the cord. This case is being reported for the rare manifestation of a primary cutaneous nocardiosis disseminating to the epidural space and para spinal (epidural) region, resulting in an abscess and subsequently cord compression.

With the varied clinical manifestations of nocardiosis being frequently encountered, a heightened awareness among the clinicians and clinical microbiologists will help in early diagnosis and initiation of early and definite therapy for these infections.3 As the organisms grow slowly, it is important to hold the cultures for about 2-3 weeks, before they are declared sterile.

References

2. Rippon JW: Medical mycology; the pathogenic fungi and pathogenic Actinomycetes, 3rd edn. WB Saunders Co; Philadelphia. 1988; 53-68.

Accepted for publication: 21st October, 2000.