

# Nocardia Infection of the Mastoid in an Immunocompromised Patient

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## Summary

A rare case of Nocardia infection of mastoid is presented in an immunocompromised patient.

**Key Words:** Nocardiosis, Mastoiditis, Immunocompromised patient

## Introduction

Nocardia species are opportunistic pathogens found in immuno compromised patients<sup>1,2</sup>. Acute suppurative otitis media caused by this microorganism have been reported<sup>3,4</sup> but however no report of mastoiditis was found in the English literature. We report a rare case of mastoiditis with petrous apex abscess caused by Nocardia in a HIV infected patient.

## Case report

A 38 year male presented to the clinic with almost three weeks history of right ear discharge, ear ache and swelling in the temporal area. On examination he was febrile, having purulent ear discharge and mastoid tenderness. There was fluctuant swelling in the right temporal region with a diffuse swelling in the mastoid area. His tympanic membrane was intact and there was a fistulous opening in the superior part of ear canal at the bony cartilaginous junction. There was no neurological deficit. He was admitted for further investigations and treatment. Broad spectrum antibiotics was commenced. CT scan showed an abscess superficial to temporal bone with right mastoiditis and petrous apex abscess. Subsequently a mastoid exploration and drainage of abscess was

performed. Intraoperatively there was a defect with granulation tissue superior to temporal line and pulsatile mass with granulation tissue adjacent to sigmoid sinus. Dura was exposed superiorly. Mean while serology for HIV was positive and highly reactive. The ear swab culture obtained during operation was identified as nocardia species. The strain was sensitive to cotrimoxazole and the patient was treated successfully with Trimethoprim/sulfmethoxazole for 2 months. The patient has been reviewed in the out patient clinic for 2 months and subsequently he defaulted to follow up.

## Discussion

Nocardia species are gram positive bacteria which grow in filaments that readily break into rods. Nocardia are morphologically similar to actinomyces but are aerobic organisms<sup>5</sup>. Majority are soil saprophytes and a few are pathogenic to man. Generally these microorganism cause chronic granulomatous suppurative infection. Nocardiosis remains an important opportunistic infection in immunocompromised patients. HIV infection has become a common predisposing condition. Pulmonary nocardiosis is the most common form of clinical presentation<sup>5</sup>. Nocardiosis although infrequent, is an important cause of morbidity and

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mortality in immuno compromised patients<sup>2</sup>. It has pleomorphic manifestation and can be seen as a break through infection. All cases are difficult to diagnose. The diagnosis is made by pure culture growth, repeated isolation and visualization of the micro organisms in gram stained specimens of ear exudate<sup>2</sup>.

Differentiation of nocardiosis from actinomycosis is crucial to the selection of appropriate antimicrobial

therapy<sup>5</sup>. Most strains are sensitive to sulphonamides and cotrimoxazole but resistant to practically all other antibiotics<sup>2,5</sup>. Therapy for nocardiosis is mainly concurrent trimethoprim/sulfmethoxazole. Treatment may have to be continued for few months<sup>1,5</sup>. Many patients may remain free of nocardial disease for a prolonged period. Physicians have to be alert to suspect nocardiosis so that appropriate therapy can be commenced early.

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## References

1. Pintardo V. Infection with *Nocardia* species-Clinical spectrum of disease and species distribution in Madrid Spain 1978-2001. *Infection* 2002; 30: 338-40.
2. Koibuchi T, Takahashi T, Nakamura T et al. The first isolation of *Nocardia nova* from an individual in Japan. *J Infect Chemother* 2002; 8: 358-60.
3. Salvo Gonzalo S, Grijalba Uche M, Mazon Ramos et al. Acute otitis media caused by *Nocardia asteroides*. *Acta Otorrinolaringol Esp* 1996; 47: 314.
4. Forrett Kaminsky MC, Scherer C, Berner M, Robert V et al. *Nocardia asteroides* otitis media in AIDS. *Press Med* 1991; 20: 1512-3.
5. J. Douglas Sleigh and Morag C Timbury. *Actinomyces and niocardia*. *Medical bacteriology*; fourth edition. 1994; 119-123.