

Comment on a Primary Cutaneous *Nocardiosis* of the Hand

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Abstract

Citation: Keikha M. Comment on a Primary Cutaneous Nocardiosis of the Hand. Open Access Maced J Med Sci. 2018 Jan 25; 6(1):226-227. <https://doi.org/10.3889/oamjms.2018.091>

Keywords: *Nocardia* spp.; 16S rRNA; hsp65; rpoB

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Received: 13-Nov-2017; **Revised:** 09-Dec-2017; **Accepted:** 02-Jan-2018; **Online first:** 03-Jan-2018

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Funding: This research did not receive any financial support

Competing Interests: The authors have declared that no competing interests exist

Nocardia spp. are gram-positive, partially acid-fast bacteria which are lives in environmental sources and cause of various infection that called nocardiosis in animals and humans. Identification of this group of bacteria was important due to accurate diagnosis, patient management and prevention of antibiotic resistant among of bacteria. Molecular methods including PCR-RFLP and sequencing using housekeeping genes such as 16S rRNA, hsp65, rpoB and gyrB are recommended to accurate and reliable identification of nocardiosis.

Dear Editor,

Camozzota et al., recently published their report on A Primary Cutaneous Nocardiosis of the Hand [1]. *Nocardia* spp. is opportunistic environmental bacteria which are saprophytic lives in hospital environmental resources that through to the human body via inhalation of environment aerosols and cutaneous traumatic inclusion which cause of nocardiosis in immune disorder patients and even healthy individuals [2][3].

Nocardia species are identified using conventional test and molecular methods that phenotypic tests are laborious, time-consuming, expensive and need to expertise technicians while molecular methods such as direct sequencing of the hsp65 (using pair primers of TB11: 5'-ACCAACGATGGTGTGCCAT-3' and TB12: 5'-CTTGTCGAACCGCATAACCCT-3') and 16S rRNA (whit primers 27f (5'-AGAGTTTGATCMTGGCTCAG-3' and 1525r (5'-AAGGAGGTGWTCARCC-3') and PCR-RFLP are reliable, accurate and rapid for identification of nocardial infections especially in emergency cases for example in nocardial disseminated infections that necessary to urgent identifying *Nocardia* spp. before death of patients

[3][4][5]. Based on the literatures, antimicrobial drug susceptibility of *Nocardia* species are different.

Also in many countries, Trimethoprim-sulfamethoxazole (TMP-SXT) is first choice for treatment of nocardiosis infection whereas reports have showed that high mortality rate of patients with brain abscess and disseminated which treated with sulfonamides alone [3]. Therefore, due to final diagnosis, appropriate treatment of patients *Nocardia* should be identified to the species level [3][6].

I'm request the authors attend to the following questions.

1. According to reports other aerobic actinomycetes including *Mycobacterium tuberculosis*, *non-tuberculosis mycobacteria* (NTM), *Gordonia*, *Rhodococcus* and *Tsukamurella* are similar to *Nocardia* spp. are same phenotypic features (microscopic evaluation and colony morphology); and can cause of cutaneous infections in human [7]. Please explain the *Nocardia* isolation method, which was not mentioned in the report.

2. Please clarify how *Nocardia* was identified to the species level.

References

1. Camozzota C, Goldman A, Tchernev G, Lotti T, Wollina U. A Primary Cutaneous Nocardiosis of the Hand. Open Access Maced J Med Sci. 2017; 5(4):470-72. <https://doi.org/10.3889/oamjms.2017.106> PMID: PMC5535660
2. Keikha M. Nocardia are pathogenic environmental bacteria. J Coast Life Med. 2017; 5(11):504-506. <https://doi.org/10.12980/jclm.5.2017J7-102>
3. Brown-Elliott BA, Brown JM, Conville PS, Wallace RJ Jr. Clinical and laboratory features of the Nocardia spp. Based on current molecular taxonomy. Clin Microbiol Rev. 2006;19:259-282. <https://doi.org/10.1128/CMR.19.2.259-282.2006> PMID:16614249 PMID:PMC1471991
4. Fatahi-Bafghi M, Heidarieh P, Rasouli-nasab M, Habibnia S, Hashemi-Shahraki A, Eshraghi SS. Comparison of restriction enzyme pattern analysis and full gene sequencing of 16S rRNA gene for Nocardia species identification, the first report of Nocardia transvalensis isolated of sputum from Iran, and review of the literature. Antonie Van Leeuwenhoek. 2016;109(10):1285-98. <https://doi.org/10.1007/s10482-016-0746-x> PMID:PMC27613736
5. Madej K, Tomczak H, Karczewski M. Nocardiosis in a Patient with Acute Necrotizing Pancreatitis. Can A Simple Microscope Specimen Save a Patient's Life? A Case Report. J Clin Case Rep. 2015; 5(662):2. <https://doi.org/10.4172/2165-7920.1000662>
6. Wauters G, Avesani V, Charlier J, Janssens M, Vaneechoutte M, Delmée M. Distribution of Nocardia species in clinical samples and their routine rapid identification in the laboratory. J Clin Microbiol. 2005;43(6):2624-8. <http://doi:10.1128/JCM.43.6.2624-2628.2005> PMID:PMC151960
7. Song JY, Sohn JW, Jeong HW, Cheong HJ, Kim WJ, Kim MJ. An outbreak of post-acupuncture cutaneous infection due to Mycobacterium abscessus. BMC Infect Dis. 2006;6(1):6-12. <http://doi:10.1186/1471-2334-6-6> PMID:PMC1361796

Authors reply

We very much appreciate the interest of Masoud Keikha in our recent case report on *Nocardiosis* of the hand. We are aware of high standard diagnostic procedures as described in your letter. However, the diagnostic opportunities are not easily available in daily practise. In our case the final diagnosis was obtained by culture.

In order to exclude *Mycobacteria tuberculosis*, Ziehl-Neelsen (acid fast stain) coloration was used. In addition we used Kinyoun stain, an acid-fast procedure used to detect species of the genus *Mycobacterium*, *Nocardia* and other species.

Unfortunately, it was not possible to identify the exact *Nocardia* specimen.

With kind regards,

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