Letter to Editor

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The Importance of Determination and Isolation of Nocardia in Patients with Breast Abbcess

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Abstract

Nocardia are aerobic, branching, gram-positive bacterium, acid-fast and slow-growing bacteria which are lives in widely environmental resources such as water, soil, dust particles and decaying plants. This group of bacteria can enter the human body through inhalation of dust particles or traumatic inoculation, and can cause nocardiosis infection in immune-compromised patients and even healthy people (1). Patients with immune deficiency such as cancer patients, chronic granulomatous inflammation, rheumatoid arthritis, Behcet's syndrome, diabetes, systemic lupus erythematosus, pemphigus vulgaris, and transplant recipients due to use of drugs that suppress the immune system, are prone to Nocardial opportunistic infections, Trypanosoma cruzi, Giardia lamblia, Pneumocystis jiroveci, Moraxella catarrhalis, Cytomegalovirus, and Coxsackie virus B (1,2). In these cases, infections in these individuals are reported to be 70% (3).

Breast abscesses in developed countries have been reported to be 11%; breast abscesses are commonly caused by infection with Staphylococcus aureus, Streptococcus agalactia, negative coagulase staphylococci, Enterobacteriaceae and, rarely aerobic actinomycetes (for example *Nocardia*, *Mycobacterium* and *Gordonia*) (4,5). The prevalence of Nocardial infections is increasing worldwide (6,1). Although the statistics of Breast Nocardial abscesses are low but according to the death rates of Nocardial infections, lack of diagnosis and the long-term treatment period of this infection, it is necessary to recognize Nocardial infections (5,1). Given that Nocardial infection cannot be detected based on clinical manifestations and radiological findings; Therefore, laboratory techniques such as cultivation, gram and Kinyoun staining are still considered standard methods for detecting and diagnosing the *Nocardia* infections (7,1). Gram and kinyoun stains, and growth in broth lysozyme are one of the important tests for identification of the *Nocardia* genus (1). According to available reports, Nocardia infections can be isolated from the pus (100%), Bronchial secretions (41%), tissue samples (63%); blood and urine samples less frequently (7). The lack of proper diagnosis of *Nocardia* infections has caused death in over 30% of cases, which indicates the importance of identifying the genus of *Nocardia* at the species level (8). Studies have also shown that *Nocardia* spp. have a different and specific drug susceptibility patterns; in addition, The inappropriate administration of trimethoprim-sulfamethoxazole has caused some Nocardia species to be resistant to this drug; Therefore, isolation, detection of the species and determination of the antibiotic resistance pattern is great importance (9,1).