

A Rare Case of Tracheobronchitis Alternariosis in a Renal Transplant Recipient

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Invasive filamentous fungal infections are an important source of morbidity and mortality among the immunocompromised population. Due to long-term immunosuppressive therapy, in organ transplant recipients have a highly increased risk of acquiring unusual opportunistic infections¹. *Alternaria alternata* is an uncommon cause of invasive fungal infection and the majority of cases of phaeohyphomycosis due to *Alternaria* species have been encountered in immunocompromised individuals². In the immunocompromised patient, *Alternaria* is recognised as a source of sinus, nail, palatal, and ocular infections, especially *Alternaria alternata*^{3,4}. We report a rare case of tracheobronchitis *Alternaria* species in an immunocompromised patient.

A 53-year-old female from Tabriz, Iran was referred to a central Hospital in Tabriz on June 24, 2014 (day 0). The patient presented with recurrent cough from 3 years ago, without sputum and blood that did cause dysphonia in this patient. She had a clinical history of 6 years (in April 2008) kidney transplantation and she was treated by immunosuppressive therapy consisting of tacrolimus (1 mg twice a day orally), and mycophenolate mofetil (500 mg triple a day orally). Her post-transplantation course was uneventful, but 3 years after the transplantation in 2011 year she had some times recurrent

cough until 2014. On day 3, chest X-ray was performed, with negative results and did not show any opacity in right and left side chest. Bronchoscopy revealed of the left bronchus thick purulent secretions that on day 5, sent to the Bacteriology Laboratory of the hospital, no bacteria were identified by Gram stain, but in modified Ziehl-Neelsen stain showed macroconidia of *Alternaria* (Figure 1). In bronchial washings sample, did not bacterial growth on blood agar and MacConkey agar, where it remained negative after 48 hours of incubation on day 7. The final diagnosis was tracheobronchitis alternariosis. The patient started antifungal therapy on day 12 with voriconazole (400 mg daily) and patient was relieved of symptoms within 6 weeks (on day +54).

Alternaria has worldwide distribution and is a large and complex genus that encompasses hundreds of species and several species being common saprophytes in soil⁵. *Alter-*



Figure 1. This figure shows a macroconidium on microscopy of bronchial washings stained with a modified Ziehl-Neelsen technique (×400).

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naria can be isolated from nature normal human skin or as a laboratory contaminant therefore, its involvement in human infection must be equires cautious evaluation⁶. *Alternaria* has been associated with several types of infections such as paranasitis, ocular infections, onychomycosis, and cutaneous and subcutaneous infections also granulomatous pulmonary disease and majority of the reported cases occurred in patients who either had severe underlying disease or were immunocompromised⁷.

The main clinical manifestation due to *Alternaria* is a respiratory disease such as, rhinitis, pneumonia, asthma and in more than 80% of patients the *Alternaria* infection occurs in immunosuppressed patients⁸. Secnikova et al.⁹ in a study reported a case of *Alternaria* cutaneous and pulmonary infection in immunosuppressed man after heart transplantation that treatment with posaconazole. We report a case of tracheobronchitis infection due to *Alternaria* spp. in a renal transplant recipient woman that is immunocompromised patient and treated with voriconazole. We report a rare case of tracheobronchitis with *Alternaria* spp. after renal transplantation. Hence, it seems identifying *Alternaria* spp. as the pathogen in an immunocompromised patient is necessary.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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References

1. Leylabadlo HE, Kafil HS, Yousefi M, Aghazadeh M, Asgharzadeh M. Pulmonary tuberculosis diagnosis: where we are? *Tuberc Respir Dis* 2016;79:134-42.
2. Gilaberte M, Bartralot R, Torres JM, Reus FS, Rodriguez V, Alomar A, et al. Cutaneous alternariosis in transplant recipients: clinicopathologic review of 9 cases. *J Am Acad Dermatol* 2005;52:653-9.
3. Kpodzo DS, Calderwood MS, Ruchelsman DE, Abramson JS, Piris A, Winograd JM, et al. Primary subcutaneous *Alternaria alternata* infection of the hand in an immunocompromised host. *Med Mycol* 2011;49:543-7.
4. Leylabadlo HE, Kafil HS, Yousefi M, Aghazadeh M, Asgharzadeh M. Persistent infection with metallo-beta-lactamase and extended spectrum beta-lactamase producer *Morganella morganii* in a patient with urinary tract infection after kidney transplantation. *J Nat Sci Biol Med* 2016;7:179-81.
5. Romero ML, Siddiqui AH. Photo quiz: cutaneous alternariosis. *Clin Infect Dis* 2000;30:13, 174-5.
6. Pritchard RC, Muir DB. Black fungi: a survey of dematiaceous hyphomycetes from clinical specimens identified over a five year period in a reference laboratory. *Pathology* 1987;19:281-4.
7. Pastor FJ, Guarro J. *Alternaria* infections: laboratory diagnosis and relevant clinical features. *Clin Microbiol Infect* 2008;14:734-46.
8. Horner WE, Helbling A, Salvaggio JE, Lehrer SB. Fungal allergens. *Clin Microbiol Rev* 1995;8:161-79.
9. Secnikova Z, Juzlova K, Vojackova N, Kazakov DV, Hoskova L, Fialova J, et al. The rare case of *Alternaria alternata* cutaneous and pulmonary infection in a heart transplant recipient treated by azole antifungals. *Dermatol Ther* 2014;27:140-3.