A Case of Phaeohyphomycosis Caused by *Exophiala lecanii-corni*

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Dear Editor:

Phaeohyphomycosis refers to subcutaneous and systemic fungal infections characterized by dematiaceous septate mycelial elements¹. The most common agent of subcutaneous phaeohyphomycosis is *Exophiala jeanselmei*. Phaeohyphomycosis has been increasing in frequency because of popular immunosuppressive therapy and precise laboratory diagnosis². To the best of our knowledge, there

has been no report of subcutaneous phaeohyphomycosis due to *Exophiala lecanii-corni* in Korea.

A 76-year-old man presented with ill-defined pruritic erythematous papules and patches on right forearm for 18 months. He had a history of swimming in the sea of Egyptian pharaoh island. After then, the skin lesion was developed and gradually increased in size. Before the travel, he had a history of trauma at the site of the lesion a

Fig. 1. (A) Confluent flat-topped violaceous papules on ill-defined purpuric erythematous patches, (B) close up view of the lesion. (C) Clinical improvement of skin lesion 11 months after treatment, (D) close up view of the lesion.

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week ago. He had undergone diabetes mellitus (DM) and hyperlipidemia for several years. On physical examination, skin lesion showed confluent flat-topped violaceous papules on ill-defined purpuric erythematous patches (Fig. 1A, B). Histopathological examination showed granuloma consisting of histiocytes and lymphocytes, fungal hyphae and spores in dermis (Fig. 2A~D). Fungal culture was

done with potato dextrose agar (PDA) with corn meal agar, peptone and tween 80 for 14 days. Fungal culture showed dark brown to olivaceous black colored velvety colony (Fig. 2E). Microscopic examination using lactophenol cotton blue staining method revealed spine-like conidiophores and clusters of single celled conidia (Fig. 2F). We performed a direct sequencing analysis of the internal

Fig. 2. (A, B) Granuloma consisting of histiocytes and lymphocytes in dermis (H&E; A: ×40, B: ×400). (C, D) Fungal hyphae and spores in dermis (C: D-PAS, ×400, D: GMS, ×400). (E) Dark brown to olivaceous black-colored velvety colony on PDA. (F) Spine-like conidiophores and clusters of single celled conidia (lactophenol-cotton blue stain, ×400).

transcribed spacer (ITS) region of the ribosomal DNA (rDNA) for the identification of causative fungus. The GenBank National Center for Biotechnology Information (NCBI) database using the basic local alignment search tool (BLAST) algorithm was used. The GenBank BLAST search revealed 100% (575/575 bp) homology with a previously sequenced *E. lecanii-corni* strain (GenBank accession number: AY857528.1). The patient received oral terbinafine HCl 250 mg for 3 months and after then oral fluconazole 150 mg for 4 months. After treatment, the lesion was improved without recurrence (Fig. 1C, D).

Phaeohyphomycosis, named by Ajello et al.³ in 1974, was first defined. Phaeohyphomycosis refers to Dematiaceae infection, varying from subcutaneous mycosis to deep organ infections. Unlike chromoblastomycosis, phaeohyphomycosis shows black yeast-like cells, pseudomycelium-like fungal sections, mycelia, or their complex in tissues rather than sclerotic bodies or granulation⁴. The subcutaneous type frequently occurs in the fingers, wrists, knees, and ankles, which can be easily exposed to injury and wound infection⁵. It needs to be differentiated from fibroma, lipoma, and steatocystoma. Phaeohyphomycosis is increasing in immunocompromised patients such as solid organ transplant recipients, hemato-oncological patients, and patients on chronic exogenous steroid therapy².

The diagnosis of phaeohyphomycosis can be made by past history, clinical features, fungal culture, microscopic examination of fungal elements, histopathological exami-

nation, polymerase chain reaction and rRNA ITS sequence analyses. Our case was diagnosed as phaeohyphomycosis using all of the above methods.

In the present case, *E. lecanii-corni*, which has not yet been reported in Korea, was identified. Among the *Exophiala* species, *E. castellanii*, *E. jeanselmei*, *E. moniliae*, *E. pisciphila*, *E. salmonis*, and *E. spinifera* are common. Here we report a rare case of phaeohyphomycosis induced by *E. lecanii-corni*.

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