A Case of Chromoblastomycosis Showing a Good Response to Itraconazole

Han Uk Kim, M.D., Ge Yeong Son, M.D., Chull Wan Ihm, M.D.

Department of Dermatology, Chonbuk National University Medical School, Chonju, Chonbuk, Korea

Chromoblastomycosis, a chronic fungal infection of the skin and subcutaneous tissue, is known to be difficult to treat. Recently itraconazole has proved effective for treatment of this infection, but requires a prolonged treatment course. We experienced a case of chromoblastomycosis caused by *Fonsecaea pedrosoi* in a 68-year-old Korean man showing a complete resolution with a short course of oral itraconazole, 200 mg daily, for six weeks.
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Key Words : Chromoblastomycosis; itraconazole

Chromoblastomycosis is a chronic cutaneous and subcutaneous infection caused by traumatic inoculation of dematiaceous fungi. It occurs world-wide, but is more frequent in tropical and subtropical regions[1]. Only two cases of chromoblastomycosis have been reported from Korea to date[2, 3], although Korea is adjacent to Japan, which has many reports[4, 5]. This mycotic infection is a difficult condition to manage. Several therapeutic techniques and drugs have been tried with variable success[1]. Itraconazole is a promising systemic antifungal agent against chromoblastomycosis. However, it is known that treatment with itraconazole takes a long period[6-9]. We report a case of chromoblastomycosis caused by *Fonsecaea pedrosoi*, which showed complete healing with a short course of oral itraconazole.

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Reprint request to : Han Uk Kim, M.D., Department of Dermatology, Chonbuk National University Medical School, Chonju, Chonbuk, 560-180, Seoul-Korea.
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CASE REPORT

A 68-year-old Korean man had a verrucous plaque on the dorsum of his left hand. The lesion had begun five years earlier as an asymptomatic warty papule that slowly progressed into the verrucous plaque. The patient had received an injury to the lesional area by thorns several months before the occurrence of the lesion.

On examination, the dorsum of the left hand revealed an approximately 8 × 3 cm, irregular, brown, verrucous plaque(Fig. 1). He was otherwise healthy. The Roentgenogram of the chest was normal. Routine laboratory studies showed normal findings. Biopsy specimens were obtained from the plaque. The histopathological examination revealed pseudoepitheliomatous hyperplasia and dermal mixed inflammatory cell infiltrates with multinucleated giant cells. A cluster of sclerotic bodies was observed within the multinucleated giant cells(Fig. 2a) and in the microabscess(Fig. 2b). A specimen obtained from the left hand was cultured's on Sabouraud's dextrose agar at room temperature. Black colonies were first noticed after incubation for approximately 10 days. They were slow growing, flat to heaped, and brownish black in color, with scanty short aerial mycelia(Fig. 3). Slide cultures were made to evaluate the morphological characteristics of the fungal isolate. The

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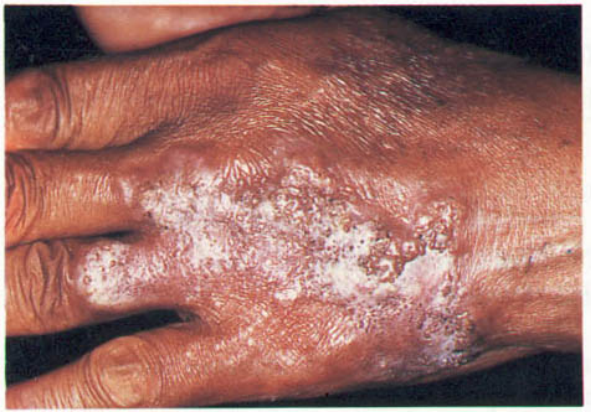

Fig. 1. A verrucous plaque on the dorsum of the left hand.

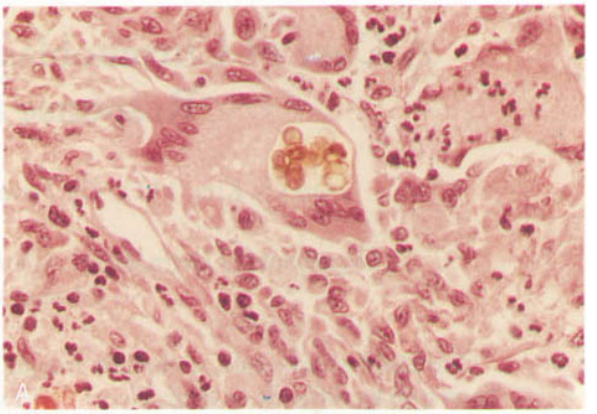

Fig. 2A. Sclerotic bodies are found within the giant cell(H.E. ×550).

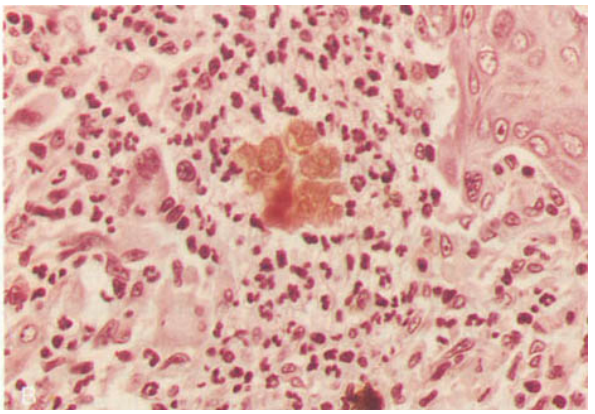

Fig. 2B. Sclerotic bodies are found within the microabscess(H.E. ×550).

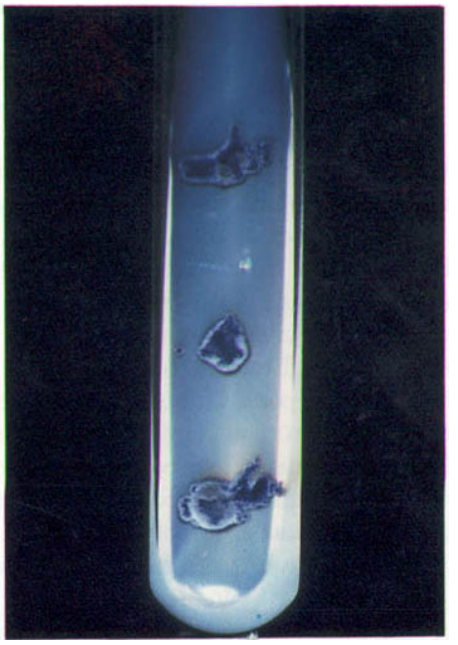

Fig. 3. Brownish black colonies grown on Sabouraud's dextrose agar after 14 days' incubation at room temperature.

Fig. 4A. Cladosporium-type sporulation of *Fonsecaea pedrosoi*. Slide culture on cornmeal agar for three weeks at room temperature(lactophenol-cotton blue, ×550).

hyphae were brown and septate branched. The Cladosporium (Fig. 4a) and Rhinocladiella types of sporulation (Fig. 4b) were seen. The former type was abundant. No Phialophora type of sporulation was observed. The colonies were identified as *Fonsecaea pedrosoi*.

Oral itraconazole at a dosage of 200 mg daily was administered. Clinical improvement was noticed after one week. Three weeks later, the plaque had remarkably resolved, and in addition, direct examinations, a histopathological examination

Fig. 4B. Rhinocladiella-type(arrow)(b) sporulation of *Fonsecaea pedrosoi*. Slide culture on cornmeal agar for three weeks at room temperature(lactophenol-cotton blue, ×550).

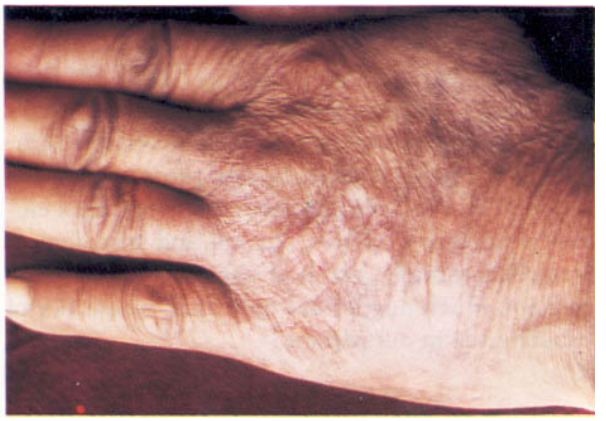

Fig. 5. The lesional site one year after the completion of six weeks of treatment with itraconazole.

and cultures revealed no fungal elements. The patient received oral itraconazole for a further three weeks without any side effects. At the time of the discontinuation of the total of six weeks of itraconazole therapy, the lesion was cured clinically and mycologically. The patient had no new lesions one year after completion of treatment(Fig. 5

DISCUSSION

Chromoblastomycosis is caused by various dematiaceous fungi that are seen as sclerotic bodies in the tissue. The main etiological agents are *Fonsecaea pedrosoi*, *Cladosporium carrionii*, *Phialophora verrucosa*, *Fonsecaea compacta*, and *Rhinocladiella aquaspersa*[10]. These agents are widely found in wood, soil and decaying vegetable matter[11]. In Asia, *Fonsecaea pedrosoi* has been shown to be the primary organism of chromoblastomycosis[4,12]. The infection usually follows the traumatic inoculation of the fungus into the skin. The lesion is usually unilateral and occurs on the lower extremities, hands, arms, face, or buttocks. In general, it begins as a small warty papule and slowly enlarges to form a verrucous plaque[1,4,10].

Patients with chromoblastomycosis must be treated because spontaneous regression has only rarely been reported[5] and the lesion gradually enlarges without therapy[1].In general, chromoblastomycosis is difficult to treat. Therefore, three kinds of therapeutic approaches, surgical excision, physical methods, and systemic medication, have been used alone or in combination with variable results. Physical methods include cryotherapy, local heat therapy, electrosurgery, radiation therapy, and laser therapy[1,13]. Surgical removal or the physical methods can be recommended for small lesions in combination with systemic antifungal agents. Systemic medications are commonly used for large lesions6. Amphotericin B, 5-fluorocytosine, thiabendazole, and ketoconazole have been employed with variable effects[1,13].

Recently, there have been reports that itraconazole is a favorable drug in the treatment of chromoblastomycosis. Itraconazole is liphophilic and preferentially accumulates in the cutaneous and subcutaneous tissues[14]. This pharmacological property probably contributed to the successful treatment of chromoblastomycosis[9]. The etiological agents of the reported cases treated with itraconazole were mainly *Fonsecaea pedrosoi*[6-8]. The ideal dose and length of itraconazole administration must be based on the clinical, histopathological and mycological findings[7,8]. Treatment usually requires several months to a few years, depending on the severity of the disease[6,9]. In the present case, the total duration of therapy and the total dose administered were only six weeks(1.5 months) and 8.4 g, respectively. This experience in itraconazole therapy was consistent with the report of Telles et al[7], who stated that itraconazole was highly effective in the mild to moderate forms caused by Fonsecaea pedrosoi[7]. In their report, two patients with mild disease were cured after itraconazole therapy of 3.2 and 5.6 months(total dose of 39.2 g and 33.6 g), respectively, and six patients with moderate disease

were cured after a mean period of 13.4 months of treatment(5.1-29.6 months).

We have no precise explanation for the excellent response of our patient to itraconazole. Our patient was noted to have the slow progression of the lesion over five years and the scarcity of fungal elements on biopsy. These clinical and mycological features may imply good host immunity to *Fonsecaea pedrosoi*, which might have increased the efficacy of itraconazole in our patient.

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