INTRODUCTION

Chromoblastomycosis is a chronic subcutaneous infection caused by various dematiaceous fungi (Hay, 2012). Infections occur primarily in immunocompetent individuals whose limbs exposed to traumatic implantation of fungal elements into the subcutaneous tissue (Hay, 2012). The fungus multiplies in the tissue producing muriform cells (Hay, 2012). The tissue proliferation results in the production of warty papules eventually leading to extensive verrucous plaques (Queiroz-Telles et al, 2009). The most common etiological agents of chromoblastomycosis are the dematiaceous fungi namely Fonsecaea pedrosoi, F.monophora, Cladophialophora carrionii and Phialophora verrucosa, all members of the ascomycete order Chaetothyriales in the family Herpotrichiellaceae (Queiroz-Telles et al, 2009).

Rhinocladiella sp is usually a saprobe in the soil. There have been reports of chromoblastomycosis caused by R. aquaspersa...
CASE REPORT

A 63-year-old Thai female farmer from Ratchaburi Province, presented to the Institute of Dermatology with a red patch on her cheek for 10 years. She gave no history of penetrating injury to her right cheek. She had been treated with several topical medications over the years without improvement. The skin lesion was slowly expanding. She reported no systemic symptoms. She has no underlying illnesses, except dyspepsia.

Her physical examination was unremarkable except for a solitary erythematous patch on her right cheek which had a slightly elevated border (Fig 1). No black dots were seen on the surface of the patch. The cutaneous sensation in the lesion was intact. A KOH preparation of the rash revealed no hyphae. A skin biopsy of the lesion was performed, and the histopathology showed a diffuse inflammatory infiltrate with lymphocytes and neutrophils, multinucleated giant cells and round pigmented fungal elements in the upper dermis (Fig 2). A KOH preparation of the lesion was repeated 3 weeks after her first visit that showed multiple sclerotic bodies. A skin tissue was inoculated onto Sabouraud’s dextrose agar supplemented with chloramphenicol (0.5 mg/l) and incubated at 27-30°C for six weeks.

The culture grew velvety, elevated colonies with olive-black upper surfaces (Fig 3). Microscopic examination of the colonies showed pale olive colored,

(Badali et al, 2010a). We report a patient with chromoblastomycosis with an atypical rash mimicking dermatophytosis of the face caused by *R.phaeophora*, a new opportunistic species originally recovered from maize field soil from Colombia (De Hoog et al, 2000).
smooth- and slightly rough-walled hyphae. The conidiophores were straight, upright, unbranched, thick-walled and dark-brown. Conidiogenous cells were terminal, cylindrical, with crowded, slightly prominent denticles and had dark scars with hyaline centers. The conidia were subhyaline, smooth- and thin-walled, and were one and occasionally two-celled, ellipsoidal to clavate (Fig 4). The mold was provisionally identified as a *Rhinocladiella* sp on the basis of morphological criteria (Badali et al., 2010a).

To identify the responsible species, a voucher strain was deposited in the culture collection of First BASE Laboratories, Malaysia (accession number 1741). The strain was subjected to DNA sequencing of the 18S small subunit rRNA gene internal transcribed spacer 1 (ITS 1), 5.8S rRNA gene, ITS 2, and 28S large subunit rRNA gene. Those sequences were then compared with selected sequences at the GenBank + EMBL + DDBJ + PDB sequences (http://blast.ncbi.nlm.nih.gov/Blast.cgi). The strain isolated was identified as *R. phaeophora* by all the genes sequences (maximal identity 99%).

The disease was not responsive to itraconazole due to taking a proton pump inhibitor along with itraconazole, reducing absorption of itraconazole. Itraconazole was then changed to terbinafine since the proton pump inhibitor had to be continued, and the treatment was successful.
DISCUSSION

Chromoblastomycosis is one of the most frequently encountered subcutaneous mycoses (Lupi et al, 2005). The organisms causing chromoblastomycosis are saprophytic fungi found in soil and decaying vegetation in high-prevalence areas (Hay, 2012). Several species of dematiaceous fungi cause chromoblastomycosis. The chaetothryialean fungus genus *Rhinocladiella* is a rare cause of chromoblastomycosis with cases generally confined to Latin America (Badali et al, 2010b). The infections caused by species of the genus *Rhinocladiella* are clinically diverse. *R.aquaspersa* is associated with subcutaneous infections (Badali et al, 2010a), while *R.mackenziei* causes brain infections in otherwise healthy individuals which are associated with high mortality (Badali et al, 2010b).

This case shows *R.phaeophora* can also cause chromoblastomycosis. This infection was probably acquired by accidental inoculation from soil or leaves into the subcutaneous tissues of the subject’s cheek. This subject’s skin lesion resembled dermatophytosis of the face. The verrucous plaques are characteristic of chromoblastomycosis (Queiroz-Telles et al, 2009). Most skin lesions are localized, but disseminated disease has been reported in < 5% of patients (Minotto et al, 2001). Lesions continue to evolve, often over many years, and given time may result in morphological characterizable into one or more of 5 types (Carrion, 1950), with nodular, tumorous and verrucous types being more frequent than cicatricial and plaque-type lesions. Pires d’Avila et al (2002) found the type of lesion was affected by a cell-mediated tissue reaction. Patients with verrucous plaques have a type Th2 immunological response, whereas patients with erythematous atrophic patches have a type Th1 response. Esterre and Queiroz-Telles (2006) opined relative to cell-mediated immunity, humoral immunity does not offer as much protection against chromoblastomycosis. The *R.phaeophora* infection in our patient might have only induced a Th1 response, resulting in a thin skin lesion. Muriform cells may be detected easily even by direct examination of scales from the skin. A KOH preparation is a simple laboratory investigative technique that may be useful to exclude dermatophytosis-lookalikes, and can confirm the diagnosis of chromoblastomycosis. It is possible to identify the responsible species by examining the microscopic morphologic characteristics of the fungal culture. The genus *Rhinocladiella* demonstrates purely asexual reproduction through the denticulate forms, formerly known as acrotheca (Badali et al, 2010a). Morphologically, *R.phaeophora* has sympodial, brown conidiophores which are arranged in a more profusely branched conidial apparatus than other *Rhinocladiella* spp (De Hoog et al, 2000).

In general, chemotherapy for chromoblastomycosis has been minimally successful, and prolonged therapy is required. The treatment of choice for chromoblastomycosis caused by *R.phaeophora* is itraconazole. Treatment should continue for at least 1 year, until complete healing. Itraconazole inhibits CYP3A4 and is metabolized by CYP3A4 and has several significant drug interactions (Jacob and Konnikov, 2012). Terbinafine is a fungicidal allylamine related to its blocking of squalene epoxidase (Jacob and Konnikov, 2012). Terbinafine may have an antifibrotic effect on chromoblastomycosis lesions, as was seen in our patient. As with itraconazole, terbinafine has good *in vitro* activity against dematiaceous fungi (McGinnis and Pasarell, 1998). There are few reports of successful treatment of chromoblasto-
Chromoblastomycosis is a fungal infection that can masquerade as dermatophytosis. Terbinafine is one of the drugs with the best reported efficacy for treating subcutaneous mycoses and safety results, mainly due to its fungicidal activity and the fact it does not involve the human cytochrome P450 3A4 metabolizing enzyme resulting in fewer drug-drug interactions.

Our case represents a new clinical presentation of chromoblastomycosis masquerading as dermatophytosis of the face. The chromoblastomycosis was caused by a new opportunistic species of the genus *Rhinocladiella: R. phaeophora*, which was originally recovered from maize field soil in Colombia.

## REFERENCES


