# Mycetoma and Phaeohyphomycosis Caused by *Phialophora parasitica* in Thailand

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**Abstract**

Phaeohyphomycosis caused by *Phialophora parasitica* is rare and it has never been documented in Thailand. The first two Thai cases of phaeohyphomycosis caused by *P. parasitica* were recognized in early 1990 at Ramathibodi Hospital, Bangkok, Thailand. Both patients had underlying diseases. The fungus developed in abscesses with pigmented mycelium at the lower extremity. Cultures from pus and tissue biopsies were positive for dematiaceous fungi. Light microscopic features suggested *P. parasitica* and which was illustrated by both scanning and transmission electron microscope. The first case was treated with itraconazole with a satisfactory initial response. The second case was successfully treated by surgical removal of the entire lesion.

**Key word :** Phaeohyphomycosis, *Phialophora parasitica*

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Dematiaceous fungi have become increasingly recognized as human pathogens. One of these, *Phialophora parasitica*, was considered by Ajello in 1974 as an etiologic agent of phaeohyphomycosis in humans and animals[1]. From the extensive review of the literature, only a few reports have been found on diseases caused by this organism[2-4]. In Thailand, *Phialophora parasitica* has not been previously reported. We report the first two Thai cases of mycetoma and phaeohyphomycosis due to *Phialophora parasitica* seen at Ramathibodi Hospital, Bangkok from 1988 to 1990. Morphologic confirmation was made using both light and scanning electron microscopy.

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**Case 1**

A 60-year-old man was refered from Songklanagarind Hospital, from southern part of Thailand in December 1989 with the chief complaint of a swollen right foot with sinuses that had been draining pus and occasionally white grains for 14 months. He had a history of well controlled diabetes for four years and liver cirrhosis for ten years. Radiography of the right foot showed soft tissue swelling with osteomyelitis at the distal end of the first metatarsal bone and with involvement of the proximal phalanx of the first toe. Yellowish-white grains were obtained from the discharge. Direct examination of the discharge grains showed some short septate, hyaline to pale brown hyphae. The discharge was culture positive for a dematiaceous fungus, identified as *Phialophora parasitica* on the basis of colonial and conidial morphology. The identification was confirmed by Professor Mackenzie at the Public Health Laboratory Service, Colindale, UK. The patient received oral itraconazole 200 mg daily for a period of two months with some improvement before he was lost to follow-up.

**Case 2**

A 42-year-old woman presented in May 1989 with a history of having a kidney transplant for one year. She had been on the immunosuppressive drugs, cyclosporin and prednisolone and on ketoconazole continuously. She developed two abscesses about 1.5 cm in size at the left knee and left leg with draining exudate. Examination of the exudate by KOH preparation revealed numerous polymorphonuclear cells with dark septate hyphae. The patient was treated by excision of the lesion. Pathological studies showed granulomatous inflammation with dematiaceous hyphae. The biopsy was cultured on routine fungal culture media and yielded a dematiaceous fungus identified as *Phialophora parasitica*. This was confirmed by Professor Mackenzie, Public Health Laboratory service, Colindale. After surgical excision, the lesion decreased and the inflammation subsided. She continued receiving the same battery of immunosuppressive drugs.

**Morphological studies**

The organisms were studied after 1 to 4 weeks of incubation on Sabouraud's dextrose agar (Difco Laboratory) at 25°C. In young cultures, the colony was flat, velvety and light brown with a dark central region. It became black with a creamy coloured margin when old.

Slide cultures were prepared using both Sabouraud's agar (Difco Laboratory) and Potato dextrose agar as culture media and incubated at room temperature for 7 to 10 days. Slide cultures were examined by light microscopy. Scanning electron microscopy (SEM) was used to confirm the light microscopy.

**Microscopic Study**

The culture produced smooth septate hyphae that were first hyaline and then became dark brown. The hyphae produced primary and secondary branched phialides with and without conspicuous collarettes. By SEM, the collarettes appeared funnel shaped (Fig. 3). The conidia are hyaline, smooth, cylindrical to allantoid in young cultures and ovoid in old cultures. They were born singly and in slimy clusters.

**DISCUSSION**

*Phialophora parasitica* was earlier known as a plant pathogen[5]. It is now also recognized as a human pathogen causing subcutaneous granulomatous abscesses and systemic infections in com-

**Fig. 1. Mycetoma of the foot.**

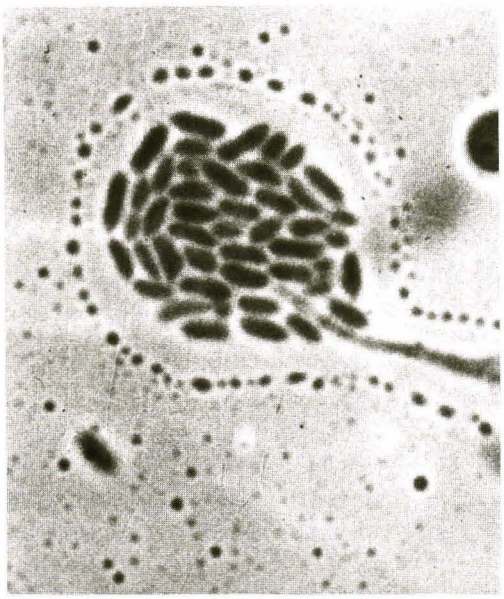

**Fig. 2. The light microscope shows the hyaline phialide on the brownish septate hyphae with numerous conidia (X400).**


**Fig. 3. Scanning electron micrograph of smooth, allantoid phialoconidia rising from the elongate phialide with slightly flared collarette (bar indicated 4000).**

promised and normal patients[1,3,4]. The first two Thai cases were both compromised patients without any history of inoculation with fungi. One developed a mycetoma on the foot, and this contributes the first report of mycetoma caused by *P. parasitica*. The other case had abscesses on the knee. The first case improved after receiving itraconazole 200 mg. per day for one month. Unfortunately he was lost to follow-up after the second course of itraconazole for another month. In the second case, the patient developed fungal abscesses during immunosuppressive drug treatment. She was successfully cured, by extensive excision. Since the fungal structures under the light microscope at lower magnification resembled *E. jeanselmei*, careful examination at higher magnification and confirmation by scanning electron microscopy were required for identification of the organism.

## SUMMARY

Mycetoma and subcutaneous phaeohyphomycosis caused by *P. parasitica* in Thai immunocompromised patients are described. Fungal identification can best be done by scanning electron microscopy. The lesions responded to surgical excision and the antifungal drug "itraconazole". The role of medical therapy needs more data for support.

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## REFERENCE


1. Ajello L, Georg LK, Steighbigal RT, Wang CJK. A case of phaeohyphomycosis caused by a new species of Phialophora. Mycologia 1974; 66: 490-8.
2. Weitzman I, Gordon MA, Henderson RW, Lapa EW. Phialophora parasitica; an emerging pathogen. Sabouraudia 1984; 22: 331-9.
3. Rowland MD, Farrar WE. Thorn-induced Phialophora parasitica arthritis treated successfully with synovectomy and ketoconazole. Am J Med Sci 1987; 293: 393-5.
4. Wong PK, Ching WTW, Kwong-Chung KJ, Meyer RD. Disseminated phialophora parasitica infection in humans : case report and review. Rev Infect Dis 1989; 11: 770-5.
5. Howksworth DL, Gibson AS, Gams W. Phialophora parasitica associated with disease condition in various trees. Trans Br Mycol Soc 1976; 66: 427-31.
6. Espinel-Ingroff A, Goldson PR, McGinnis MR, Kerkering TM. Evaluation of proteolytic activity of differentiate some dematiaceous fungi. J Clin Microbiol 1988; 26: 301-7.


# *Phialophora parasitica* ก่อให้เกิดโรค Mycetoma และ Phaeohyphomycosis ในประเทศไทย


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รายงานโรคติดเชื้อรา *Phialophora parasitica* ใต้ผิวหนัง ในผู้ป่วยรามาธิบดีที่อยู่ในภาวะมีโรคประจำตัวอยู่แล้ว 2 ราย โดยเกิดเป็นแผลที่บริเวณขา, การเพาะเลี้ยงเชื้อจากหนองและชิ้นเนื้อ ได้เป็นราดำ เมื่อตรวจดูลักษณะด้วยกล้องจุลทัศน์ และ electron microscope พิสูจน์ได้ว่าเป็นเชื้อ *Phialophora parasitica*

ผลการรักษาในผู้ป่วยรายแรกรักษาด้วย itraconazole ได้ผลดี สำหรับในรายที่สองใช้วิธีผ่าตัดเอาเนื้อเยื่อที่ติดเชื้อ



**คำสำคัญ** : Mycetoma, Phaeohyphomycosis

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