

# Penicilliosis in a HIV-positive individual

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## Abstract

*Penicillium marneffeii* is a dimorphic fungus, which can cause fatal infection in HIV-infected patients. The aim of this article is to report a rare case of penicilliosis in an HIV-positive patient from a nonendemic area such as Paonta Sahib, Himachal Pradesh. The patient presented with nonhealing painful ulcer on tongue, chest pain, cough, and chronic diarrhea. Diagnosis was made possible through blood investigations and culture reports of saliva and blood samples.

**Key words:** Fungal, HIV, *Penicillium marneffeii*

## INTRODUCTION

Infection with *Penicillium marneffeii*, an emerging facultative intracellular dimorphic fungus, is an important disease among human immunodeficiency virus (HIV) infected persons in South East Asia.<sup>[1]</sup> In South East Asian countries such as Thailand, Penicilliosis Marneffeii (PM) ranks as the third most common opportunistic infection, after extra-pulmonary tuberculosis and cryptococcus, in people with acquired immunodeficiency syndrome (AIDS).<sup>[2]</sup> Although *P. marneffeii* has been reported in varied clinical manifestations, it has rarely been isolated from the oral cavity. We report a patient with HIV who presented with oral lesions wherein a diagnosis of *P. marneffeii* was made after microscopic examination and culture tests.

## CASE REPORT

A 32-year-male reported with the chief complaint of nonhealing painful ulcer from past two months on

the left border of the tongue. The ulcer was small, superficial with clinical resemblance to recurrent aphthous ulcer [Figure 1]. Careful history revealed that patient was a chronic smoker and he had chest pain and chronic productive cough from past 2–3 months. Patient was also suffering from chronic diarrhea from past 3–4 months. The patient was on some medication which he used to take off and on depending on cough and diarrhea. These were given to him by a local doctor. The doctor also advised him to put some “Katha” (an ingredient of paan) on

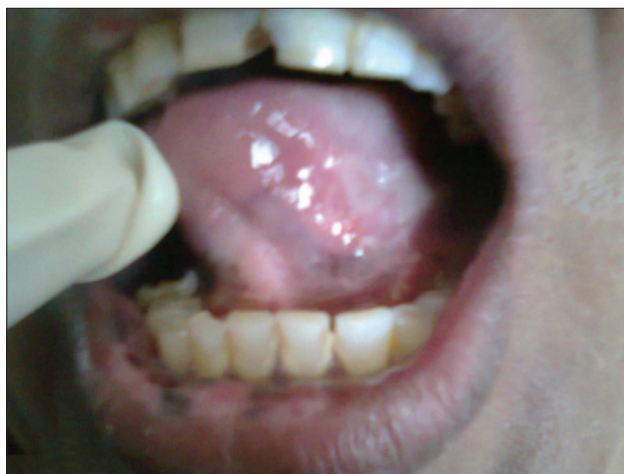


Figure 1: Clinical picture showing ulcer on left lateral border of tongue

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ulcer. When no sign of ulcer healing was seen and pain increased, then the patient reported to dental college.

Examination of oral cavity revealed that the patient had a very poor oral hygiene with generalized gingival recession. Cervical and submandibular lymph nodes were also palpable and tender.

The blood investigations revealed that the patient was anemic with hemoglobin level of 8.5 g/dl. ESR was 30 mm in first hour. The patient was found to be seropositive with a CD4+ count of 110 cells/ml.

Patient's saliva samples and scrapping from ulcers were inoculated separately on Sabroud's dextrose agar (SDA). Slight growth was also seen on SDA on 5<sup>th</sup> day in both samples but nothing conclusive could be drawn. On 10<sup>th</sup> day of inoculation, greenish black folded colonies on the surface of SDA could be seen. Red-colored pigment diffused into SDA. These features are characteristics of *P. marneffe* [Figure 2]. The inoculation was examined under microscope after lactophenol cotton blue preparation. It showed typical brush border appearance with the presence of conidiophores and sterigmata which confirmed the diagnosis [Figure 3].

The patient was treated with amphotericin B followed by itraconazole maintenance therapy and he was also referred to department of general medicine for antiretroviral therapy and other medical problems such as cough and diarrhea.

## DISCUSSION

Penicilliosis is a systemic fungal infection caused by *P. marneffe*. The infection is most commonly seen in Southeast Asia, Southern China, Hong Kong, and Taiwan. *P. marneffe* has been reported in varied

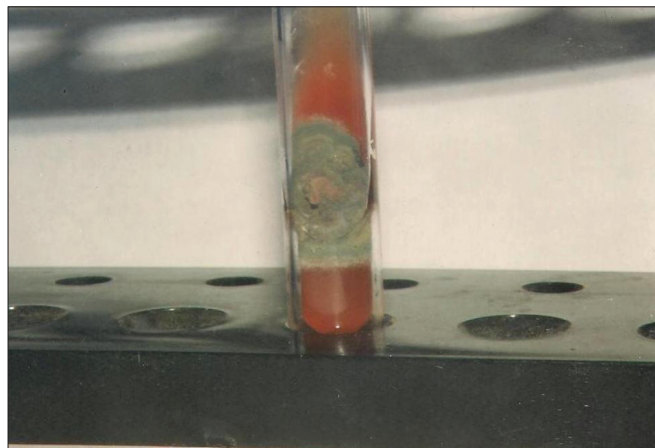


Figure 2: Greenish black colonies of *P. marneffe* with red pigment on SDA

clinical manifestations in India.<sup>[3]</sup> It is one of the commonest opportunistic infections among AIDS patients in areas of endemicity and is considered an indicator disease for AIDS.<sup>[4]</sup>

*P. marneffe* has been isolated from bamboo rat furrows and the current consensus would favor soil as the most probable reservoir, with transmission to humans via the respiratory root. Therefore, there seems to be no role for the rats on the natural occurrence of the disease.<sup>[5]</sup> Similar to other pathogenic fungi, the conidia are inhaled and internalized by alveolar macrophages and transported to the reticuloendothelial system. The organisms then proliferate as soon as host immunodeficiency takes place, leading to systemic infection.<sup>[6]</sup>

The incidence of penicilliosis has increased over the past few years.<sup>[7]</sup> The first cases in English literature from India were published by Singh NP *et al.* in four HIV positive patients from Manipur.<sup>[8]</sup> In 2009, Baradkar *et al.* reported a case of *P. marneffe* infection in HIV positive individual from Mumbai, which is a non endemic area.<sup>[9]</sup> History of travel to endemic area was a major clue to diagnosis in case from Vellore, India.<sup>[10]</sup>

The incubation period of *P. marneffe* infection has not been well defined. A report of a patient who lived in a nonendemic area but developed penicilliosis 11 years after visiting Hong Kong has suggested the possibility of a long latency with subsequent reactivation.<sup>[11]</sup> There is also evidence that primary infection might occur as *P. marneffe* infection can present early in young children who had acquired HIV perinatally.<sup>[12]</sup>

Maniar *et al.* reported a case of *P. marneffe* infection

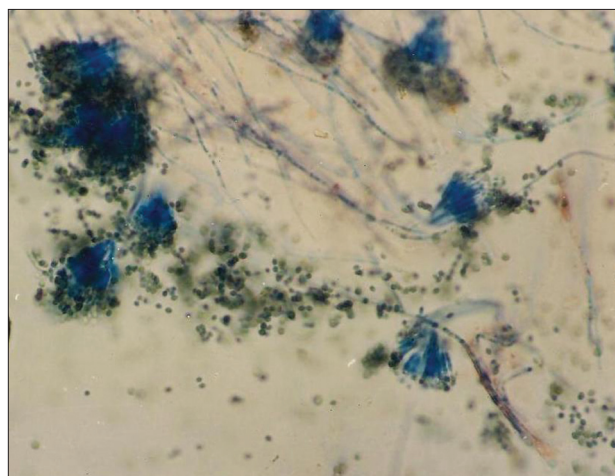


Figure 3: Lactophenol cotton blue preparation of *P. marneffe* with typical brush border appearance with the presence of conidiophores and sterigmata

in an HIV-infected individual from Manipur. Multiple erythematous, discrete papules, and nodules with umbilication were situated over the face, chest, back, and proximal parts of extremities. But, there were no oral and genital lesions.<sup>[13]</sup>

Nittayananta suggested that oral *P. marneffe* lesions usually occurs in patients with disseminated infections, presented as erosions or shallow ulcers covered with whitish yellow, necrotic slough which may be found on palate, gingival, labial mucosa, tongue and oropharynx.<sup>[14]</sup>

The mortality rate in patients with acute disseminated penicilliosis is high if the infection is not diagnosed early enough and a timely and effective antifungal therapy is not used.<sup>[15]</sup> In a correctly diagnosed case of infection with *P. marneffe*, amphotericin B followed by itraconazole maintenance therapy is generally curative or effective in preventing a relapse of disease.<sup>[16]</sup> Thus, an early diagnosis is a prerequisite for lowering the mortality rate in patients with acute disseminated *P. marneffe*.<sup>[15]</sup>

This case aims to emphasize the fact that *P. marneffe* can be isolated from oral cavity and also from the nonendemic areas. The isolation of *P. marneffe* from nonendemic areas suggests the changing scenario of infections, which may result in greater morbidity and mortality.

Further research work is required in the field of infections with *P. marneffe*, with respect to its global distribution, natural history, pathogenesis, and impact of antiretroviral therapy.

## REFERENCES

1. Sirisanthana T, Supparatpinyo K. Epidemiology and management of penicilliosis in human immunodeficiency virus-infected patients. *Int J Infect Dis* 1998;3:48-53.
2. Supparatpinyo K. Disseminated *Penicillium marneffe* – infection in the Southeast Asia. *Lancet* 1994;344:110-3.
3. Michael JS, Abraham OC, Mathai D, Mathews MS. Varied clinical manifestations of *Penicillium marneffe* in patients with human immunodeficiency virus: A report from South India. *Mycoses* 2005;48:120-1.
4. Duong TA. Infection due to *Penicillium marneffe*- an emerging pathogen: Review of 155 reported cases. *Clin Infect Dis* 1996;23:125-50.
5. Hilmarsdottir I, Meynard JL, Rogeaux O, Guernonprez G, Datty A, Katlama C, et al. Disseminated *Penicillium marneffe* infection associated with human immunodeficiency virus: A report of two cases and a review of 35 published cases. *J Acquir Immune Defic Syndr* 1993;6:466-71.
6. Linder J, Damjanov I. Chapter 37, Fungal diseases: Chandler FW, Watts JC in *Anderson's Pathology*. 10<sup>th</sup> ed. London: C.V. Mosby Company; 1996.
7. Vanittanakom N, Cooper CR Jr, Fisher MC, Sirisanthana T. *Penicillium marneffe* in infection and recent advances in the epidemiology and molecular biology aspects. *Clin Microbiol Rev* 2006;19:95-100.
8. Singh PN, Ranjana K, Singh YI, Singh KP, Sharma SS, Kulachandra M, et al. Indigenous disseminated *Penicillium marneffe* – infection in the state of Manipur: Report of four autochthonous cases. *J Clin Microbiol* 1999;37:2699-702.
9. Baradkar V, Kumar S, Kulkarni SD. *Penicillium marneffe*: The pathogen at our door step. *Indian J Dermatol Venereol Leprol* 2009;75:619-20.
10. Varghese GM, Pise G, Michael S, Jacob M, George R. Disseminated *Penicillium marneffe* infection in human immunodeficiency virus infected individuals. *J Postgrad Med* 2004;50:235-6.
11. Jones PD, See J. *Penicillium marneffe* infection in patients infected with human immunodeficiency virus: Late presentation in an area of nonendemicity. *Clin Infect Dis* 1992;15:744-6.
12. Sirisanthana V, Sirisanthana T. Disseminated *Penicillium marneffe* infection in human immunodeficiency virus-infected children. *Pediatr Infect Dis J* 1995;14:935-40.
13. Maniar JK, Chitale AR, Miskeen A, Shah K, Maniar A. *Penicillium marneffe* infection: An AIDS defining illness. *Indian J Dermatol Venereol Leprol* 2005;71:202-4.
14. Nittayananta W. Penicilliosis marneffe: Another AIDS defining illness in southeast Asia. *Oral Dis* 1999;5:286-93.
15. Khor BS, Lein JW, Leu HS. Rapid fatality of disseminated *Penicillium marneffe* in a patient with acquired immunodeficiency syndrome. *Infect Dis Clin Pract* 2005;13:90-1.
16. Sirisanthana T, Supparatpinyo K, Rerriens J, Nelson KE. Amphotericin B and itraconazole for treatment of disseminated *P. Marneffe* infection in human immunodeficiency virus infected patients. *Clin Infect Dis* 1998;26:1107-10.

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