

## Penicillium marneffi infection presenting as lump abdomen

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### ABSTRACT

*Penicillium Marneffi* is the third leading opportunistic pathogen in HIV endemic areas. We report a case, with a rare clinical presentation as lump abdomen with newly diagnosed HIV -1 antibody reactive status. A diagnosis was made by endoscopic biopsy of growth in second part of duodenum which on histopathology and culture detected *Penicillium Marneffi*. He was treated with intravenous amphotericin B for 2 weeks followed by oral itraconazole. This case is reported for its unusual presentation to sensitize clinicians to consider this as an etiology in patients in HIV endemic areas who present as lump abdomen.

**Keywords:** HIV, AIDS, lump abdomen, penicillium marneffi, Opportunistic pathogen

### Introduction

*Penicillium marneffi* was first discovered in 1959 by G. Segretain at the Pasteur Institute in Paris. The strain was isolated from bamboo rats dying of disseminated mycosis in Vietnam. The incidence of Penicillosis increased rapidly thereafter with the development of HIV pandemic and the infection became one of the commonest acquired immune deficiency syndrome (AIDS)-defining illnesses among HIV-positive patients in endemic areas.<sup>[1]</sup> The disease has now been reported among HIV-infected persons in Thailand, Myanmar (Burma), Vietnam, Cambodia, Malaysia, northeastern India, Hong Kong, Taiwan, and

southern China. The most frequent sites of involvement are liver and lungs but lymph node, bone marrow, skin and intestines are also affected. Penicillosis is mostly seen in late HIV infection with CD4+ count less than 100/ $\mu$ L. Up to 80% of cases have CD4+ count below 50/ $\mu$ L.<sup>[1]</sup> Clinical presentation included fever (in 99% of patients), anemia (78%), pronounced weight loss (76%), generalized lymphadenopathy(58%), and hepatomegaly (51%). However, these conditions were not specific for *penicillium marneffi* and could be caused by HIV or other HIV-related opportunistic infections. A more specific finding was skin lesions, most commonly papules with central

necrotic umbilication, which were seen in 71% of patients. Bone marrow culture was the most sensitive (100%), followed by culture of the specimen obtained from skin biopsy (90%) and blood culture.<sup>[2]</sup>

*Penicillium marneffi* is emerging as one of the common AIDS-defining opportunistic infection in HIV disease in Manipur. We report a rare case of patient with AIDS who presented with lump abdomen with clinical features suggestive of intestinal obstruction the diagnosis of which was made possible by endoscopic biopsy.

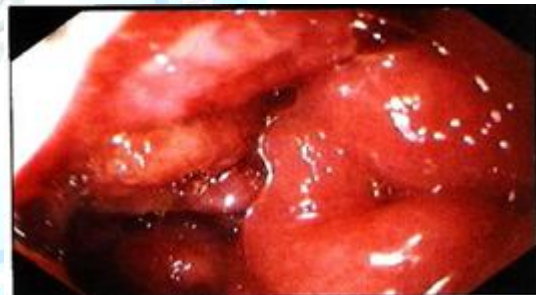
### Case Report

A 40-year old man from Manipur was referred to Regional Institute of Medical Sciences (RIMS) casualty with insidious onset, severe pain abdomen and vomiting for 1 week. On enquiry, he complained of low grade fever for 1 month, loss of appetite and loose stools for 10 days. He was on antibiotics on and off and was also treated for enteric fever.

On physical examination, he looked toxic and was febrile (temp- 101<sup>0</sup>F), pulse rate-110/min and blood pressure was 120/70mmHg, mild pallor, oral candidiasis was present and examination of abdomen revealed tenderness left iliac region and a diffuse lump was felt, no rebound tenderness and bowel sounds were normal. Other systemic examination was non-contributory.

On admission his hemoglobin was 11.8gm%, total leukocyte count was 6,200/mm<sup>3</sup> and neutrophils were 67% and lymphocytes 27% and platelets 2.2 lakhs/mm<sup>3</sup>. His aspartate transaminase/alanine transaminase was 2:1 and alkaline phosphatase was on the higher side of normal. During hospital stay his hemoglobin dropped so was given a unit of PRBC.

Enzyme-linked immunosorbent assay (ELISA) for Human immunodeficiency virus (HIV)-1 Ab was positive and CD4 was 37cell/mm<sup>3</sup>. Barium swallow was normal. Ultrasonography of abdomen showed hepatosplenomegaly, gallbladder sludge, ascites and mesenteric lymphadenopathy with largest measuring 0.7 cms. Contrast enhanced computed tomography scan of the abdomen showed similar results. Subsequently he underwent Ultrasonography guided fine needle aspiration cytology of mesenteric lymph nodes was done but it was non-contributory. X-Ray chest was normal. He underwent endoscopy which showed bunch of grape like growth in second part of duodenum at 80cm causing obstruction. The growth was not friable and did not bleed on contact. [Fig. 1]

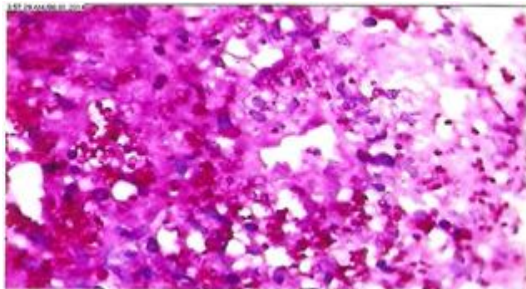


**Fig 1. Upper gastrointestinal endoscopy showing bunch like growth at 80cm causing obstruction**

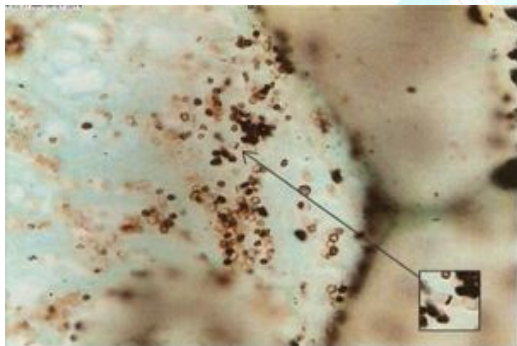
Histopathological examination detected duodenal *Penicilliosis marneffi* showing histocytes studded with yeast like cells. [Fig. 2, 3] Bone marrow culture was non-contributory. Fungal cultures showed growth of *Penicillium Marneffi* and *Candida* spp. after incubation for 21 days.

Patient was treated with amphotericin B at a dose of 0.6mg/kg/day intravenous for 2 weeks followed by oral itraconazole for 10 weeks and was initiated on (Highly active anti-retroviral therapy)

HAART from centre of excellence (COE), Regional institute of medical sciences(RIMS). The patient is on monthly follow up in antiretroviral outpatient department, repeat endoscopy showed duodenitis but patient is clinically asymptomatic and leading a productive life.



**Fig.2** Duodenal Penicilliosis marneffi showing round or oval 2.5 to 5 micron yeast cells singly as well as in clusters (100×5: PAS)



**Fig.3** Duodenal Penicilliosis marneffi showing yeast like cells of *Penicillium marneffi* with transverse septum (100×5: methenamine silver stain)

### Discussion

*P. marneffi* is the only dimorphic fungus in the genus *Penicillium*. It exists in mycelia form at 25°C but in yeast form at 37°C. It shows a rapid growth rate and matures within three days at 25–30°C. Its growth is enhanced in Sabouraud dextrose agar (SDA) but is inhibited by cycloheximide. At 25°C, the colonies of *P. marneffi* are granular with shade of greenish-yellow color and a characteristic red diffusible pigment. Little or no red diffusible pigment is produced at 35°C to 37°C. Microscopically, the mould form is typical of other *Penicillium* species with hyaline septated hyphae and fruiting

structures composed of branching metulae and phialides which produce spherical conidia in chains. [3] *Penicillium marneffi* is a third most common opportunistic infection; after tuberculosis and cryptococcosis in some parts of South East Asia in HIV positive individuals. Its occurrence in AIDS patient has increased in recent years, with 10% having Penicilliosis as the primary AIDS defining illness. [4, 5] In this report we describe a case of *penicillium Marneffi* which presented as acute abdomen a rare clinical presentation from an eastern state of India, Manipur, which shares border with Myanmar. [6] Ukarapol reported two cases HIV infected children with mesenteric lymphadenitis who presented with prolonged fever and abdominal pain that were initially diagnosed as peritonitis prior to exploratory laprotomy. [7] KO and colleagues have described three cases of intestinal Penicilliosis diagnosed by endoscopic biopsy. The infection may rarely present as acute abdomen. [8] In patients with advanced HIV/AIDS who present with acute abdomen, opportunistic fungal infections of the bowel especially Penicilliosis needs to be considered as etiology, more so in patients from a distinct geographic region such as South-East Asia. [9] Penicilliosis is mostly seen in late HIV infection with CD4+ count less than 100/mm<sup>3</sup>. [10] Up to 80% or more of the cases have CD4+ count below 50/mm<sup>3</sup>. [1, 10]

### Conclusion

*Penicillium Marneffi* has become an important pathogen of HIV associated opportunistic infection in Manipur. Any patient with high risk features should be suspected of having this infection and investigated accordingly as early diagnosis and prompt initiation of anti-fungal drugs

improve survival of these patients. This case highlights the unusual clinical presentation and the difficulty in diagnosing the infection because of its rarity and low clinical suspicion and moreover to sensitize clinicians to consider *penicillium marneffi* as an etiology in individuals from high risk areas as the organism can have various clinical presentations.

### Reference

1. Wu TC, Chan JW, Ng CK, Tsang DN, Lee MP, Li PC, et al. Clinical presentations and outcomes of *Penicillium Marneffi* infection: a series from 1994 to 2004. *Hong Kong med J* 2008; 14(2):103-09. [Pub Med]
2. Suppuratpinyo K, Khamwan C, Baosoung V, Nelson KE, Sirisanthana T. Disseminated *Penicillium Marneffi* infection in southeast Asia. *Lancet* 1994; 344:110-3. [Pub Med]
3. Viviani MA, Vanittanakom N. Topley & Wilson's Microbiology and Microbial infections- Medical Mycology. 10<sup>th</sup> edition. London: Hodder Arnold; 2005:560-576.
4. Sirisanthana T, Suppuratpinyo K. Epidemiology and management of Penicillosis in human immunodeficiency virus-infected patients. *Int J Infect Dis* 1998; 3:48-53.
5. Vanittanakom N, Cooper CR Jr, Fisher MC, Sirisanthana T. *Penicillium Marneffi* Infection and recent advances in the epidemiology and molecular biology aspects. *Clin Microbiol Rev* 2006; 19:95-110.
6. Singh PN, Ranjana KH, Singh YI, Singh KP, Sharma SS, Kulachandra M et al. Indigenous Disseminated *Penicillium Marneffi* Infection in the state of Manipur, India: Report of four Autochthonous Cases. *J Clin Microbiol* 1999; 37(8):2699–2702.
7. Ukarapol N, Sirisanthana V, Wongsawasdi Al. *Penicillium Marneffi* mesenteric lymphadenitis in human immunodeficiency virus-infected children. *J Med Assoc Thai* 1998; 81:637-40.
8. KO Cl, Hung CC, Chen MY, Hsueh PR, Hsiao CH, Wong JM. Endoscopic diagnosis of intestinal *penicillium Marneffi*: Report of three cases and review of literature. *Gastrointest Endosc* 1999; 50:111-14.
9. George IA, Sudarsanam TD, Pulimood AB, Mathews MS. Acute abdomen: an unusual presentation of disseminated *Penicillium Marneffi* infection. *Indian J Med Microbiol* 2008; 26(2):180-2.
10. Suppuratpinyo K, Khamwan C, Baosoung V, Nelson KE, Sirisanthana T. Disseminated *Penicillium Marneffi* infection in Southeast Asia. *Lancet* 1994; 344:110-13.
11. Antinori S, Gianelli E, Bonaccorso C, Ridolfo AL, Croce F, Sollima S, et al. Disseminated *Penicillium Marneffi* infection in an HIV-positive Italian patient and a review of cases reported outside endemic regions. *J Travel Med* 2006; 13(3):181-188.

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