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# Hematological Manifestation of Talaromycosis (Penicilliosis) In HIV - A Case Report

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***Abstract:*** *Talaromyces (Penicillium) marneffei, a dimorphic fungus is endemic in south-eastern Asian countries. Most cases are reported in persons who have advanced AIDS. The diagnosis is established by microbiologic culture. A presumptive diagnosis can be made by cytologic or histologic examination of tissue collected. Bone marrow biopsy is often performed in the workup of patients with AIDS who have fever or hematologic abnormalities and provide prompt diagnosis of opportunistic infection. We report a case of a 35 year old woman who presented with fever and generalised weakness for 3 weeks associated with significant weight loss. On evaluation, patient was found to be HIV positive with CD4 count of 22/µL. ART was initiated. Blood counts showed pancytopenia. Bone marrow aspiration and trephine biopsy were performed to investigate the cause of pancytopenia. The marrow biopsy showed a hypocellular marrow with ill formed epithelioid granulomas. Two weeks after the initiation of ART, patient developed papular umbilicated lesions over face and trunk making a clinical diagnosis of Talaromycosis (Penicilliosis). Oral Itraconazole was administered with clinical response. The diagnosis of the infection was subsequently confirmed by bone marrow culture. Talaromycosis/Penicilliosis should be considered as a possible explanation for fever with unexplained anaemia in patients with AIDS. Bone marrow aspirate and culture can speed the diagnosis of disseminated penicilliosis. A rapid diagnosis is important as the infection is amenable to treatment with antifungal therapy if administered early.*

***Keywords:*** *Talaromyces, Penicilliosis, IRIS, HIV, AIDS, pancytopenia*

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## I. Introduction

Talaromyces(Penicillium) marneffei is a dimorphic fungus endemic in south-eastern Asian countries. Infection is rare in immunocompetent individuals and most cases are reported in persons who have advanced AIDS. The diagnosis is established by microbiologic culture, requiring atleast several days. A presumptive diagnosis can be made by cytological or histological examination of biopsied or aspirated tissue. Bone marrow aspiration is often performed in the workup of patients with AIDS who have fever or hematologic abnormalities and provide prompt diagnosis of opportunistic infection. However bone marrow biopsy with culture is seldom done.

## II. Case Report

A 35 year old woman presented with complaints of low grade fever and generalized weakness for 3 weeks associated with significant weight loss. On examination:Pulse: 108/min BP: 100/70 mmHg RR:22/min Pallor present. No icterus, lymphadenopathy , edema, clubbing, cyanosis, Systemic examination: within normal limits.

## III. Management

**INVESTIGATION:**

Complete Hemogram: Hb- 6.4 g%; TLC- 4000; DLC- P60 L36 M2 E2; Platelet- 90,000; ESR- 70; Normocytic Normochromic. LFT, KFT, Urine RE: within normal limits, HIV-Antibody: Positive (newly detected), CD4 count: 22 cells/µL. HBsAg, HCV Ab, VDRL: Negative, Chest Xray: Bilateral perihilar heterogenous opacities, Sputum Gram stain, C/S, CBNAAT, PCP: Negative, Bone Marrow aspirate: No possible diagnosis due to poor cell yield. Bone marrow biopsy: (Report was available only during follow-up) Hypocellular for age; Leukopoiesis within normal limit; Megakaryocytes normal in number and forms Ill formed epithelioid granulomas seen.

## IV. Follow Up

Two weeks following the initiation of ART, patient developed papular umbilcated lesions resembling Molluscum contagiosum over face and trunk. This was attributed to Immune reconstitution inflammatory syndrome (IRIS). A clinical diagnosis of Penicilliosis was made and started on Oral Itraconazole 200mg twice daily with good clinical response. The diagnosis of infection was subsequently confirmed by bone marrow culture.

**Figure: 1**Papular umbilicated eruptions resembling Molluscum contagiosum seen over the face.

**Figure: 2** Bone marrow biopsy showing ill-formed granuloma.

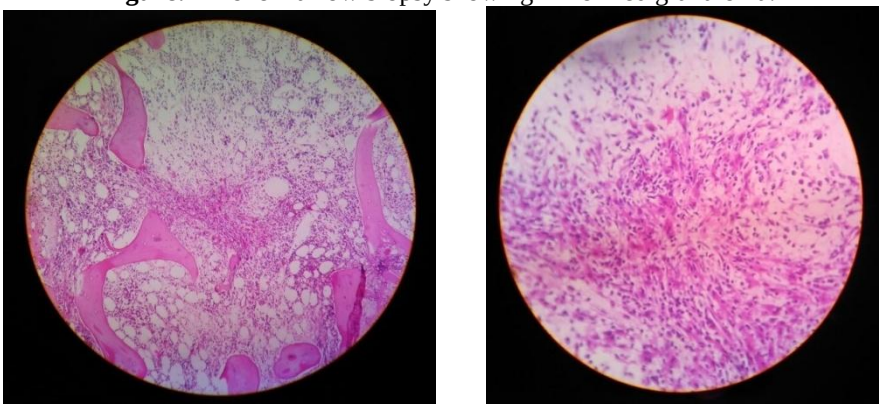

**Figure: 3** SDA shows growth of Penicillium marneffei.

## V. Discussion

Talaromycosis (Penicilliosis) is caused by Talaromyces (Penicillium) marneffei a dimorphic fungi endemic in southeast Asia with high incidence in Manipur. The majority of cases are observed in patients who have CD4 count<100 cells/μL. Clinical features include fever, fatigue, weight loss, lymphadenopathy, hepatosplenomegaly and skin lesions resembling molluscum contagiosum. Diagnosis is done by culture of P. Marneffei from tissue samples. Presumptive diagnosis can be made by cytological or histological examination of tissue. Talaromycosis occurs in patients with advanced HIV infection, generally when the CD4+ T-cell count is less than 100 cells/μL. In severely immunosuppressed patients, the institution of antiretroviral therapy (ART) is associated with a high risk of the immune complication termed immune reconstitution inflammatory syndrome (IRIS). This syndrome is a result of exaggerated or dysregulated T-cell responses to either viable pathogen or persistent pathogen derived antigens, and is driven by the institution of ART. IRIS manifests in one of the two forms: a 'paradoxical' worsening of a treated or under treatment opportunistic infection (paradoxical IRIS) or the uncovering of previously 'occult' or subclinical infections (unmasking IRIS).

**TREATMENT:**

| Penicilliosis | First line therapy | Alternatives |
|---|---|---|
| Mild or moderate | Itraconazole 200mg BD for 12 weeks . | Itraconazole maintenance for AIDS patients: 200 mg/day until CD4 cell count >100/μL for 6 months. |
| Severe | AmB (0.6-1.0 mg/kg daily) until improvement . | Itraconazole 200mg BD after AmB for 12 weeks followed by maintenance dose. |

## VI. Conclusion

Talaromycosis / Penicilliosis should be considered as a possible explanation for fever with unexplained anemia in HIV infected patients. Bone marrow aspirate and culture can be performed in workup of patients of AIDS who have fever with hematologic abnormalities hence speeding the diagnosis of disseminated Talaromycosis / Penicilliosis. A rapid diagnosis is important because the infection is amenable to treatment with anti-fungal therapy if administered early.

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