Correspondence

Penicillium marneffei infection in a HIV infected child

Sir,

Penicillium marneffei is a dimorphic intracellular opportunistic fungus causing a systemic disease, penicilliosis marneffei, in both immunocompetent and immunocompromised patients\(^1-3\). In South-East Asian countries, it is the third most common opportunistic infection in HIV infected individual, following extrapulmonary tuberculosis and cryptococcosis, accounting for 15-20 per cent of all AIDS related illness\(^2,4\). There has been an increase in incidence of this infection in North-eastern States of India where the disease was not known before\(^5\). This is probably because of the abundance of the bamboo groves, the habitat of the putative carriers of \(P.\) marneffei\(^5\). Though this infection is more common in adults, about 5 per cent of HIV-infected children suffer from \(P.\) marneffei infection\(^6\). We describe here an HIV-infected child presenting with cutaneous lesions caused by \(P.\) marneffei, in Guwahati, Assam.

A 9 yr-old male child of HIV infected parents from Manipur, attended Guwahati Medical College and Hospital, Guwahati, Assam, in June 2004 with complaints of low grade fever, dry cough, weight loss, swelling of abdomen, generalized lymphadenopathy since last one year. The patient gave history of treatment with two separate courses of anti-tubercular drugs before without any response. He was put on trimethoprim (80 mg) and sulphamethoxazole (400 mg) 3 times daily for 3 wk for \(Pneumocystis\) jiroveci pneumonia which was diagnosed by lymph node biopsy. After one week, he developed crops of papulo-necrotic lesions over the face and extremities sparing the trunk (Fig.1).

Routine laboratory investigations revealed haemoglobin - 8.4g/dl, total leucocyte count-5,800/µl, differential leucocyte count- neutrophil(56), lymphocyte(35), monocyte(6), eosinophil(3), platelet count-1,68,000/µl. Peripheral blood smear showed microcytic hypochromic anaemia\(^7\). Blood sample (5ml) was collected from the patient and serum was tested for HIV at the VCTC (Voluntary Counselling and Testing Centre) of our hospital as per National AIDS Control Organization (NACO) guidelines using two ERS (Elisa/Rapid/Simple) tests, and was found positive\(^8\). A written consent was taken from the parents of the patient prior to the test, and pre- and post-test counselling of the parents was done. The CD\(_4\) count was 48/µl and CD\(_4\) : CD\(_8\) ratio was 0.08 [done by using Becton-Dickinson’s (USA) FACS (Fluorescence-activated cell sorter) machine].

The diagnosis of the cutaneous infection was made by direct microscopic examination (Labomed microscope, vision 2000, India) of the PAS (periodic acid Schiff) stained smear of the skin biopsy tissue\(^9\), which showed numerous small sized PAS positive intracellular yeast like cells (Fig. 2). For confirmation, the biopsy tissue was inoculated into Sabouraud’s dextrose agar and was kept at 25°C.After 10 days colonies were velvety to moist, initially white and became grayish pink. A characteristic diffusible red pigment was seen (Fig. 3). Microscopy of mycelial form of the fungus showed septate, branching, hyaline hyphae bearing lateral and terminal conidiophores. The conidiophores consisted of terminal divaricate verticils and metullae originated from apex of conidiophores in groups of 4-5 bearing phialids arranged in verticils of 4-6. Conidia were arranged in short disordered chains (Fig. 4). The specimen was also inoculated into 5 per cent sheep blood agar and incubated at 37°C to demonstrate thermal dimorphism. The colonies were yeast like and white to tan in colour. Microscopically, the growth consisted of many ovate to cylindrical yeast like cells dividing by binary fission (Fig. 5)\(^9\). Based on the macroscopic and microscopic morphology, the
Fig. 1. Papulo-necrotic skin lesions seen over the face of the child. Fig. 2. Periodic acid Schiff (PAS) positive intracellular yeast like cells in skin biopsy (X 400). Fig. 3. Colonies of *P漫neffei* with red diffusible pigment in Sabouraud's dextrose agar medium. Fig. 4. Microscopy of the mycelial form of *P漫neffei* (X 400). Fig. 5. Yeast form of *P漫neffei* with septation, arrows (X 400).
presence of characteristic red diffusible pigment and the dimorphic nature of the isolate, it was diagnosed as *P. marneffei*.

Considering the general health, the patient was treated with oral fluconazole, 50 mg daily with two weekly follow ups. He reported after 4 wk and was found to be responding well. The patient was advised for antiretroviral therapy.

Though *P. marneffei* is endemic in South-East Asia, there is an extension of the area of *P. marneffei* endemicity westward to the North-eastern State of Manipur, which not only shares its borders with Myanmar (a South-East Asian country that has a high rate of HIV infection) but there is also sharing of common geographic, ethnic, ecologic and climatic conditions with Southeast Asian region^{5,10,11}.

To conclude, we found a case of *P. marneffei* infection with cutaneous manifestations in a HIV-infected child from a HIV-positive family from Manipur. There are many reported cases of *P. marneffei* infection in adults from Manipur, but reports of *P. marneffei* infection in HIV-infected children from this region are rare^{5}. Although treatment with antifungal agents has improved the prognosis, the mortality rate from disseminated *P. marneffei* infection in patients with AIDS is still about 20 per cent^{4,12}. Early detection of this opportunistic pathogen is necessary for better prognosis and institution of antifungal therapy in time.

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