CASE REPORT

Chromoblastomycosis in a case of borderline lepromatous leprosy with recurrent Type II lepra reaction

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Accepted for publication 11 March 2011

Introduction

We report a case of borderline lepromatous leprosy with chromoblastomycosis, in view of the rarity of such a clinical presentation and to highlight the coexistence of two granulomatous infections. Chromoblastomycosis presents as verrucous lesions that are usually localised to the skin and subcutaneous tissue, most commonly on the legs and feet, and may spread along lymphatics [causing elephantiasis] or in immunosuppressed individuals, may disseminate through the blood stream causing extensive cutaneous and rarely systemic disease.

CASE REPORT

A 24 year old male presented with recurrent episodes of Type II lepra reactions of 2 years duration for which he was treated with multibacillary multidrug therapy and standard dose prednisolone at the Referral centre of the Bombay Leprosy Project.

Subsequently, in view of recurrent erythema nodosum leprosum, he was started on Azathioprine (50 mg BD) but it was discontinued after 2 months due to bone marrow suppression. During this time we noticed verrucous papules with crusting on the tattoo performed on his right arm 6 months earlier. The lesions had appeared 1 month after the tattoo was done (Figure 1).

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Figure 1. Erythematous papules and nodules topped with a scale crust along the tattoo mark with few similar lesions surrounding the tattoo.

Figure 2. Suppurative non caseating granuloma (100×).
Figure 3. Multinucleate giant cells showing brown thick walled spores lying singly or in clusters (400x).

Figure 4. Sabouraud’s agar- Downy velvety colonies with black pigment on the reverse.
The lesions were biopsied and an H&E stain showed suppurative non-caseating granulomas (Figure 2) with brown thick walled spores lying singly or in clusters [sclerotic muriform bodies] within multinucleated giant cells (Figure 3).

The culture on Sabouraud’s dextrose agar showed downy velvety colonies with black pigment on the reverse (Figure 4).

A Lactophenol blue mount showed dark pigmented hyphae with conidiophores (Figure 5).

Biochemical tests were performed to determine the species: gelatin liquefaction, nitrate reduction, Löffler’s serum slope, cyclohexamide agar, Sabouraud’s agar, casein/tyrosine hydrolysis, in the temperature range 37 to 45 degrees centigrade. They were all negative (Figure 6).

These findings confirmed the diagnosis of chromoblastomycosis caused by Cladosporium carionii species. Treatment was started with itraconazole 400 mg twice daily orally, and a significant reduction in the size of the lesions was noted after 3 months. The Type II lepra reaction was treated with clofazimine 100 mg three times daily and prednisolone 20 mg.

**Discussion**

This young Indian man showed a rare co-occurrence of two granulomatous infections: leprosy and chromoblastomycosis. Chromoblastomycosis presented in this patient at the site of trauma from a tattoo needle, which might have inoculated the fungus.

A detailed literature review found only two similar cases. In one case a middle aged man was diagnosed with borderline tuberculoid leprosy and treated with dapsone.
monotherapy. He developed chromoblastomycosis within the residual anaesthetic patch during the post-treatment follow-up period. Cladosporium carrionii, was isolated from culture on Sabouraud’s agar. Prompt therapeutic response was seen to oral ketoconazole. In the second report, a 37 year old Japanese woman with history of leprosy developed chromoblastomycosis. The causative organism was Fonsecaea pedrosoi. We could find no previous report of chromoblastomycosis presenting at a tattoo site. Our patient had undergone tattooing under unhygienic conditions that might have led to the inoculation of the fungus.

Chromoblastomycosis is a chronic fungal infection of the skin and subcutaneous tissue caused by pigmented fungi which produce sclerotic or muriform bodies in tissue and is characterised by slow growing exophytic lesions usually on feet and legs. Causative species include Phialophora verrucosa, Fonsecaea pedrosoi, Fonsecaea compacta, Fonsecaea dermatitidis, Cladophialophora carrionii and Rhinocladiella aquaspersa. These fungi have been isolated from wood and soil. Infection usually occurs following inoculation by trauma. Histology shows pseudoepitheliomatous epidermal hyperplasia, extensive dermal infiltrate composed of many epitheloid histiocytes, and giant cells with chestnut or golden brown coloured fungal cells. The cells are divided in several planes of division by thick septa. Complications of chromoblastomycosis include secondary infection leading to gross lymph edema and elephantiasis, tendon contractures, secondary ulceration, squamous cell carcinoma and hematogenous spread to uninvolved other organs including the brain. Itraconazole is the treatment of choice for C. carrionii.

Figure 6. Biochemical tests – Gelatin liquefaction, nitrate reduction, Loffler’s serum slope – all negative.
Our patient was taking long term steroids and had taken a 2 months course of Azathioprine. We conjecture that drug-induced immunosuppression might have permitted haematogenous dissemination that could have led to more extensive cutaneous lesions had he not been promptly diagnosed and treated.

References