CASE REPORT

Biporalis keratomycosis in a leprosy patient: a case report

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Introduction

Leprosy is a chronic granulomatous disease in which ocular complications are common. Corneal scarring contributes to more than 20% of blindness in leprosy. Corneal ulcers, in turn, contribute to a significant proportion of corneal scarring. Although most infectious keratitis is caused by bacteria, a significant number of cases are produced by fungi. We report here the occurrence of a rare agent of keratomycosis in a leprosy patient.

Case report

A 45-year-old man reported to the eye clinic of the Schieffelin Leprosy Research and Training Centre in July 1999 with pain, watering and redness in the left eye for 2 weeks. There was no history of trauma to the eye. On examination, the left eye showed a corneal ulcer of about 4 mm diameter, involving the anterior two-thirds of the cornea. Hypopyon was present. Vision in the left eye was 6/36. Skin smears for acid-fast bacilli were negative. Blood sugar levels were within normal limits.

Corneal scrapings were taken from the left eye. Gram stain and direct lactophenol cotton blue (LPCB) mounts did not show any bacterial or fungal elements. Scrapings were plated onto blood agar (BA) and Sabouraud dextrose agar (SDA) for bacterial and fungal agents, respectively. On blood agar, two β-haemolytic colonies were seen after overnight incubation. These colonies were identified as Staphylococcus aureus. Within 48 h of incubation, hyaline mycelial growth was observed on the SDA plate. This rapidly increased in size, became cottony white and then turned to a mouse grey colour with dark pigmentation on the reverse. Microscopic examination using a slide culture on SDA revealed numerous conidiophores, which were dark, branched, septate and geniculate. The macroconidia showed two to five septa, most often three (Figure 1). The conidia were straight, oblong and rounded at both ends, with thick septal walls and truncate, dark hilum. This description is morphologically
consistent with Bipolaris spp. The patient was treated with hourly instillation of ketoconazole eye drops and the ulcer healed slowly over a period of 4 weeks.

Five years ago, he had been diagnosed as a case of borderline lepromatous leprosy and had received irregular treatment with anti-leprosy drugs. Four months ago, he had been re-evaluated and put on multi-drug therapy (MDT) for leprosy as advocated by WHO. When first seen in the eye clinic in November 1998, he had lagophthalmos in both eyes with a lid gap of 5 mm on gentle closure, superficial punctate keratitis, exposure keratitis, decreased corneal sensation, irregular pupils with posterior synechia, iris atrophy and immature cataracts. Corrected visual acuity in both eyes was 6/9. Lateral tarsorrhaphy was performed

Figure 1. Erect, sympodial, geniculate conidiophore and ellipsoidal conidia of Bipolaris spp (LPCB ×400).
in both eyes and treatment was instituted with frequent, regular, instillation of methylcellulose eye drops.

Discussion

Mycotic keratitis is not uncommon among leprosy patients. Mycotic agents such as *Alternaria, Vulutella* and *Exserohilum rostratum* have been identified from corneal ulcers occurring in leprosy patients. Since leprosy is endemic in areas that usually do not have facilities to culture and identify fungi, many agents of keratomycosis that occur in leprosy patients may not be identified. Members of the genera *Bipolaris* are an uncommon cause of keratitis. Literature search revealed that fewer than five cases of *Bipolaris* keratomycosis have been reported. One case of *Bipolaris* keratomycosis had been reported in a leprosy patient. The fungal isolate, though obtained in pure culture, was not visualized in a Gram stain or direct LPCB. This could be attributed to the fact that the bulk of the scraping was used for culture. In addition, the distribution of the fungi could be patchy in the ulcer unlike bacterial agents, which are evenly distributed.

The patient’s eyes were already made vulnerable to infection because of previous ocular complications like lagophthalmos, decreased corneal sensation and superficial punctate keratitis. In this patient there was no obvious history of injury with vegetable matter. Leprosy patients with an agrarian background presenting with an infectious ulcer should always be viewed with a suspicion of having a fungal ulcer and be treated with broad spectrum antifungal drops in addition to antibiotic drops, as culture facilities do not exist in most leprosy endemic areas. In some parts of India, anti-fungal eye drops such as fluconazole are available. In most areas where anti-fungal drops are most needed, there may be a scarcity. In these places anti-fungal preparations need to be made. We have done this by powdering a 200 mg tablet of ketoconazole, a broad spectrum antifungal drug, and mixing it well in 5 ml of 1% methylcellulose. Applied hourly, this makes a very effective anti-fungal eye drop.

This case report documents one more instance of a rare keratomycosis presenting in a leprosy patient.

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References