Emphasis on early surgical debridement of tissue at the first sign of necrosis, and regular dialogue with infectious diseases clinicians and microbiologists, particularly in those patients not responding to intravenous antibiotics, should ensure optimal management of this rare, but potentially life-threatening, condition.

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Sir,

Microsporidia keratoconjunctivitis in a corneal graft

Ocular microsporidial infection has been reported to occur in two forms, a deep stromal keratitis in immunocompetent individuals or a bilateral superficial punctate epithelial keratitis in immunocompromised individuals.[1,2] We report a unique case of microsporidial epithelial keratoconjunctivitis occurring in the corneal graft of an individual who was locally immunocompromised.

Case report

A 60-year-old male, who had undergone a repeat penetrating keratoplasty 6 months prior for a failed graft, following a transplantation for pseudophakic corneal oedema, presented with complaints of pain, redness, discharge, watering, and blurred vision of the left eye of 14 days duration. He was using prednisolone acetate eye drops twice daily. Visual acuity in the right and left eye was 20/20 and 20/100, respectively. The left eye had mild discharge with diffuse conjunctival congestion with multiple raised whitish confluent epithelial lesions on the temporal half of the graft (Figure 1a) and the underlying corneal stroma was clear. The anterior chamber was quiet. The iris had multiple areas of atrophy and the intraocular lens was in place. Clinically, microsporidial epithelial keratitis was suspected with a differential diagnosis of Thygeson's superficial punctate keratopathy and filamentary keratopathy. Both 10% potassium hydroxide-calcoflour white preparation (Figure 2a) and Gram stain of corneal scrapings showed plenty of

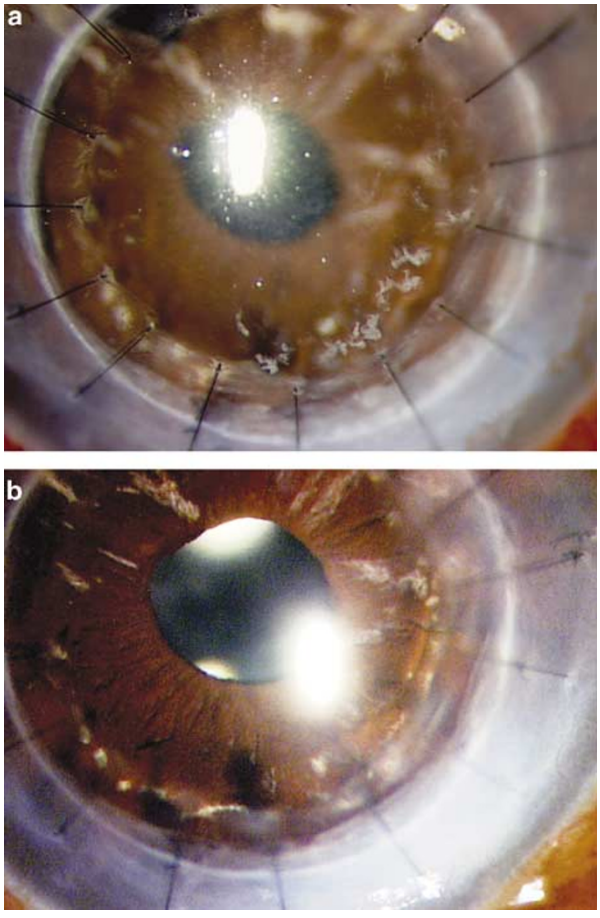

Figure 1 (a) Left eye of patient at presentation showing multiple, whitish, confluent, elevated epithelial lesions. (b) Left eye of patient after 10 days of treatment showing complete resolution of epithelial lesions.

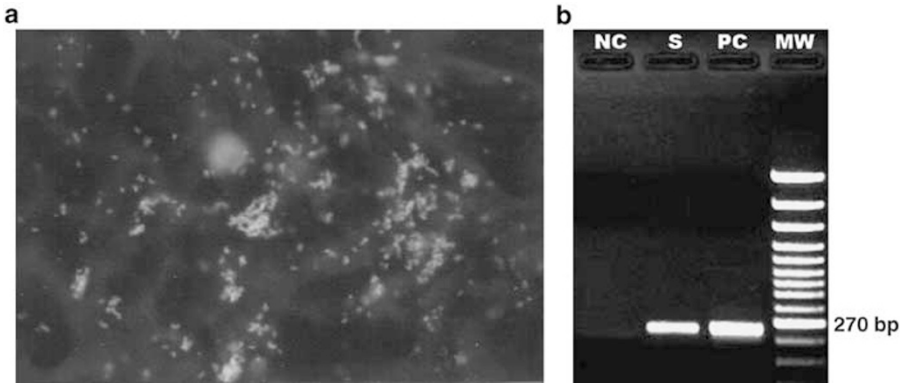

Figure 2 (a) KOH/Calcofluor white stain of the corneal scraping showing oval fluorescing microsporidial spores (× 500). (b) 1.5% Agarose gel electrophorogram showing the 270 base pair PCR product.

microsporidia spores, which were confirmed by 1% acid-fast stain. Polymerase chain reaction (PCR) for microsporidia was performed using primers capable of identifying several Enterocytozoon and Encephalitozoon species of microsporidia.[3] A single ~270 base pair fragment was observed on agarose gel electrophoresis and ethidium bromide staining of the PCR amplified patient sample (Figure 2b). Topical steroids were discontinued and he was treated with topical 0.3% ciprofloxacin eight times daily along with topical lubricants. After 10 days, all his lesions had disappeared (Figure 1b). The patient was seronegative for HIV by ELISA test.

Bilateral punctate epithelial keratopathy and conjunctivitis has been described in immunocompromised[1,2] and more recently in immunocompetent patients as well.[4,5] Previously described risk factors like trauma, contact lens wear, prior refractive surgery or exposure to contaminated water were absent in our patient. The only possible associated risk in this case was the use of topical steroids, leading to a localized immunosuppressed state, resulting in secondary infection by microsporidia. In our patient, diagnostic debridement probably debulked the epithelium of the load of organisms and hastened resolution. Contrary to belief that debridement worsens the infection by driving the organisms into the stroma; we found that debridement actually hastens resolution.[2]

Comment

To the best of our knowledge, this is the first report of keratoconjunctivitis caused by microsporidia in a corneal graft. As a result of local immunosuppression, this infection can occur in patients who have been grafted, which has not previously been described. The differential diagnosis of microsporidial keratitis should be considered in this subset of patients presenting with typical features of multiple epithelial lesions in the cornea.

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