Successful Treatment of *Acanthamoeba* Keratitis Without Anti-amoebic Agents

Dear Editor,

Acanthamoeba species are opportunistic pathogens that can cause life-threatening diseases in the immunocompromised host. In healthy individuals, *Acanthamoeba* can cause ulcerating keratitis, which is associated with the use of improperly sterilised contact lenses, trauma or washing with contaminated water.[1] Reports have shown that the defenses of a healthy host seemed sufficient to prevent systemic *Acanthamoeba* infection.[2]

The first-line treatment of *Acanthamoeba* keratitis is topical therapy with biguanides such as polyhexamethylene biguanide or in combination with diamidenes such as propamidine, aminoglycosides and imidazoles. However, these drops are not always available and chronic use is associated with significant ocular surface toxicity.[3]

Case Reports

Three patients who presented at the Cornea and External Disease Clinic of the Philippine General Hospital between January 2002 and September 2004 were included in this study. All patients were diagnosed clinically with *Acanthamoeba* keratitis. The microbiological investigation included corneal scrapings and staining with Gram and Giemsa. Suspected bacterial or fungal infections were cultured on blood agar, MacConkey agar and/or Sabouraud dextrose agar.

We report 3 cases of *Acanthamoeba* keratitis that showed cysts on corneal scrapings. All patients did not wear any contact lens and sought consult due to intolerable eye pain and blurring of vision. Two cases presented with at least 7-mm central ulceration with disciform stromal infiltrates (Fig. 1), while 1 case presented with a small 3-mm peripheral ulceration and infiltrates. Best-corrected visual acuity (BCVA) for the 2 cases was counting fingers, while the other case was 20/30. All patients received topical diclofenac sodium 0.1% every hour for the eye pain and atropine drops. Two patients received topical medication for 3 months while 1 patient received it for 10 months. No corneal melt or rupture was observed and no recurrences were seen after at least 12 months of follow-up (Fig. 2). BCVA after completing follow-up were 20/100 for the 2 cases with previous central ulceration and 20/20 for the other case with peripheral lesion.

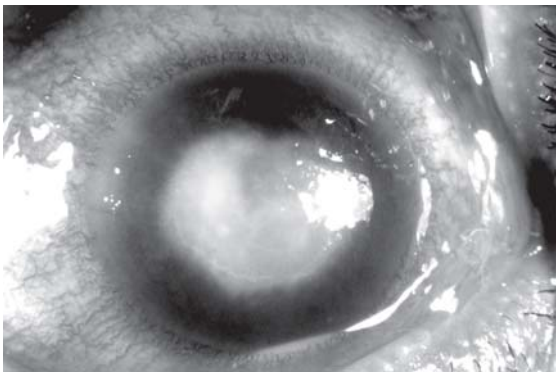

Fig. 1. Central corneal ulceration measuring 7 mm with disciform stromal infiltrates and severe scleritis.

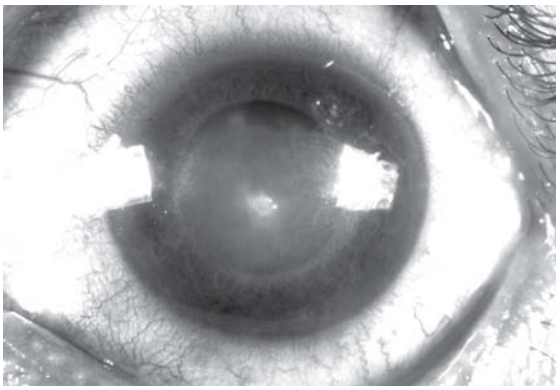

Fig. 2. Central corneal scar after several months of topical diclofenac.

Discussion

Acanthamoeba keratitis has always been a medical challenge to most ophthalmologists. Although common in contact lens wearers, it has also been reported in patients who have not worn any form of contact lenses. None of the cases were treated with chlorhexidine, polyhexamethylene biguanide, propamidine or hexamidine, which are currently the drugs of choice for treatment. A non-steroidal anti-inflammatory eye drop, diclofenac, was given for pain relief that curbed the inflammatory process and at the same time allowed the host's natural immune system to control the corneal infection. Previous reports showed that between 50% and 100% of the population have antibodies to *Acanthamoeba* species[4] and a growing body of evidence suggests that the mammalian immune system, if properly activated, is capable of preventing and controlling ocular infections including *Acanthamoeba*.[5] Although the role of neutrophils and macrophages during cellular immune response is not yet clear, they provide protection especially when the cornea has been infected with *Acanthamoeba*.[4] We have demonstrated that control of the inflammatory process may be an important component in the treatment of *Acanthamoeba* keratitis.

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