

encountered in isolation. Usually it is part of generalised protein energy malnutrition which may lead to reduction in retinol levels both directly and by impaired conversion of beta-carotene. In addition protein status may influence vitamin A metabolism at the level of the target cell.<sup>10</sup>

In poor communities in developing countries ocular complications arising from the nutritional deficiency of vitamin A are relatively common, anticipated and readily diagnosed. In affluent societies better nutritional standards make such complications rare, and testing for such a deficiency may be overlooked. As many more patients who were once regarded as terminally ill now have a longer life expectancy, the likelihood of developing vitamin A deficiency should be considered. Deficiency lesions are reversible if they are recognised early and vitamin A replacement undertaken promptly. Failure both in diagnosis and treatment may lead to unnecessary blindness, and also increases the risk of severe intercurrent systemic infection and death.

We thank Mr Cappin, FRCS, for encouraging publication of this unusual case.

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Sir,

**Acanthamoeba keratitis following optical keratoplasty**  
*Acanthamoeba* infection of the corneal graft is a rare entity and to date only one such case has been reported in the literature.<sup>1</sup> Here a case of graft infection by *Acanthamoeba* is reported that presented initially as a persistent corneal epithelial defect.

#### Case report

A 42-year-old man underwent uneventful penetrating keratoplasty for leucomatous corneal opacity subsequent to healed viral keratitis. Post-operatively betamethasone drop 2 hourly and ciprofloxacin eye drop q.i.d. were administered along with frequent artificial tears. The findings at 8 weeks post-operatively were a graft clarity of 4+ and visual acuity of 6/6 with  $-0.75$  dioptre sphere.

One week later the patient presented with diminution of vision. Examination by slit-lamp disclosed a central epithelial defect with a loose suture at the 2 o'clock position. The suture was removed and the area cleaned with betadine solution. The eye was patched for 48 h after applying ciprofloxacin ointment. As the eye patching for 48 h did not show complete epithelial healing, a bandage contact lens was applied. The patient used to remove the bandage contact lens after every 2 weeks and clean it with multipurpose solution followed by heat sterilisation. He used to pour contact lens solution containing the bandage contact lens, into the contact lens case before applying. Each time the contact lens case was washed with tap water.

The patient was comfortable with the bandage contact lens for 2 months. Thereafter he developed pain, photophobia, watering and diminution of vision in the same eye. On examination, the visual acuity was counting fingers close to the face with a central corneal ulcer measuring  $7.5 \times 7.55$  mm (Fig. 1). The bandage contact lens was removed and sent for microbiological investigation.

Light microscopic examination of a Gram-stained slide made after corneal scraping revealed the presence of numerous Gram-negative bacilli with no polymorphs. A KOH wet mount preparation failed to identify any organisms. Culture examination of the scraping material,

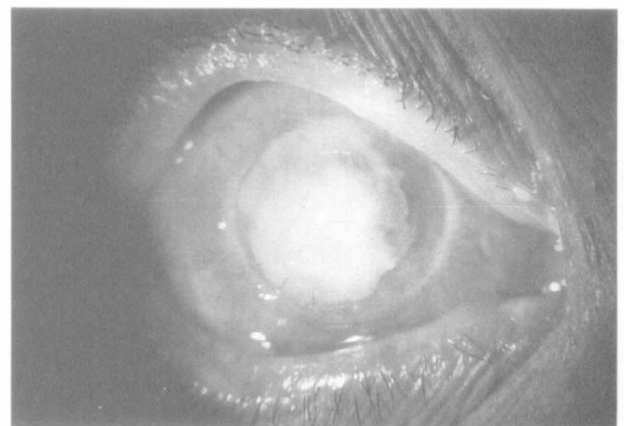


Fig. 1. The appearance of the eye showing the central corneal ulcer.

the contact lens case and the contact lens solution revealed the presence of *Pseudomonas aeruginosa* which was sensitive to tobramycin and cefazolin. Accordingly, the patient was started on 5% cefazolin sodium and 1.3% tobramycin sulphate eye drops 2-hourly along with topical cycloplegics.

As the ulcer remained static, repeat multiple scrapings from the edge of the ulcer were carried out and the specimens sent for microbiological evaluation in blood agar medium for bacteria, Sabouraud's agar medium for fungi and non-nutrient agar medium lawned with *E. coli* for *Acanthamoeba*. Both bacterial and fungal cultures were negative while the non-nutrient agar medium showed growth of *Acanthamoeba*. Further, the additional specimens sent from the contact lens case, contact lens solution and bandage contact lens for *Acanthamoeba* cultures were negative.

Polyhexamethylene biguanide (PHMB) 0.02%, Golden Eye Drops (Brolene) 1% and aprotinin 40 IU/ml were added to the therapy regimen at 1-hourly interval for 3 days and then reduced to 6-hourly. Both PHMB and aprotinin eyedrops were constituted at our Ocular Pharmacology Section.

The ulcer showed regression with this therapy and complete clinical healing occurred within 25 days. Post-resolution visual acuity was 1/60 at 6 months, which further improved to 2/60 at 1 year. The patient is being followed up at regular intervals. No recurrence of the ulcer has been observed after 2 years. However, there was no further improvement of vision.

#### Comment

*Acanthamoeba* keratitis is a potentially devastating condition which, if not diagnosed early and treated effectively, leads to loss of an eye.<sup>2</sup> Isolated cases following radial keratotomy and keratoplasty have been reported.<sup>1,3,4</sup> Recurrence of *Acanthamoeba* keratitis, though known following therapeutic keratoplasty, has been reported only once in an optical graft. This is the second report in an optical graft in the world literature, and the first report from India. To our knowledge there are no studies on microbial contamination of lens care accessories or their relation to lens care practices in an Indian setting. However, one patient tested *Acanthamoeba* culture-positive amongst hard contact lens wearers.<sup>5</sup>

Causes of graft infection as reported earlier are exposed suture, contact lens wear and epithelial defect. Our finding could not pinpoint a single factor as the patient had a loose suture, a persisting epithelial defect and was using a bandage contact lens. To this an additional fourth factor could be grafting in a compromised cornea, i.e. in a case of healed herpes simplex keratitis. We are in agreement with William *et al.*<sup>6</sup> who commented that delay in healing in a patient with herpes simplex keratitis may indicate the association with *Acanthamoeba*. Thus, we suggest that though bacterial keratitis in a corneal graft is more frequent than other infections, corneal surgeons should

keep the possibility of *Acanthamoeba* keratitis in mind, particularly in patients who undergo keratoplasty for HSV infection.

Further, the treating ophthalmologist should remain alert to an *Acanthamoeba* infection even in a proved case of bacterial keratitis, especially if the infection remains static despite effective therapy, as it happened in our case.

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Sir,

#### Mucocele arising from a lateral extension of a sphenoid sinus

Mucoceleles are uncommon especially in the sphenoid sinus and a mucocele arising from a lateral extension of a sphenoid sinus is previously unreported. They may elude diagnosis for some time. In view of their propensity to give rise to complications, such as orbital cellulitis in our case, they invariably require surgery by the time of presentation.

#### Case report

A 17-year-old girl presented with a 3 day history of an upper respiratory tract infection, right frontal headache radiating to the ear and jaw and, on the day of presentation, right upper lid swelling, pain on ocular movements and blurred vision. She had had seven previous episodes of upper lid swelling followed by conjunctivitis and blurred vision lasting 1 week. This was