Bacterial keratitis and corneal scarring secondary to cosmetic contact lens wear

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To the Editor: We report 3 cases of bacterial keratitis and corneal scarring secondary to cosmetic contact lens wear seen at Groote Schuur Hospital, Cape Town. The patients had purchased their contact lenses from registered optometrists in Cape Town and had not received any instruction on the cleaning and storage of the lenses.

Use of contact lenses increases the risk of bacterial keratitis. This is more likely to occur in people who are not regular contact lens wearers and who do not practise adequate contact lens care.

We conclude that the marketing and distribution of cosmetic contact lenses should be regulated, and people should be educated in correct contact lens care before purchase.

Case 1

A 19-year-old man presented within 1 week of first using contact lenses, with pain, redness and poor vision in the left eye. He had visual acuity reduced to hand movements, with a suppurative keratitis involving the full extent of the cornea. *Pseudomonas aeruginosa* was grown on culture. The keratitis responded to treatment with topical gentamicin, but the cornea developed permanent scarring and visual acuity remained at hand movements in the affected eye.

Case 2

A 14-year-old girl similarly presented within 1 week of first using her contact lenses, with pain, redness and poor vision in the right eye. Visual acuity was reduced to hand movements, with a corneal ulcer and suppurative keratitis involving the central cornea that stained with fluorescein (Figs 1 and 2). *P. aeruginosa* was grown on culture. The keratitis responded to treatment with topical gentamicin, but the cornea developed permanent scarring and visual acuity remained at hand movements in the affected eye.

Case 3

A 16-year-old boy had purchased his contact lenses about 12 months previously, but only used them intermittently. He presented with pain, redness and poor vision in the left eye, and had visual acuity reduced to hand movements with a central corneal ulcer and suppurative keratitis. No organism was grown on culture, but he was treated as per our protocol. The keratitis responded to topical cefazolin and ofloxacin, but the cornea developed permanent scarring and visual acuity remained at hand movements in the affected eye.

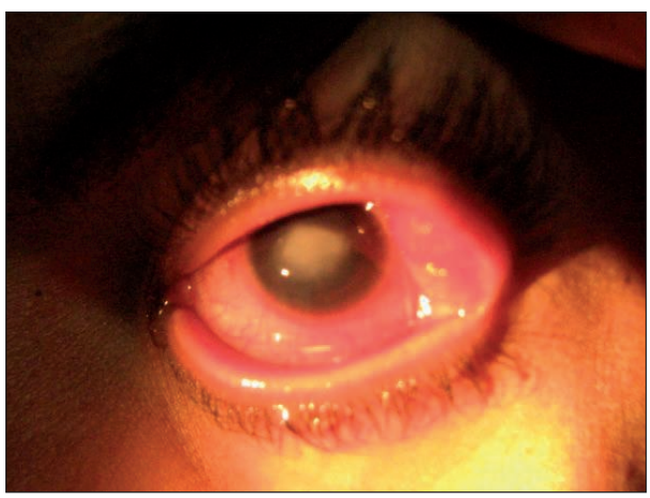

Fig. 1. A central corneal ulcer caused by Pseudomonas aeruginosa.

Fig. 2. A central corneal ulcer staining with fluorescein.

Discussion

Cosmetic contact lenses may be used to cover anatomical abnormalities of the iris caused by aniridia or previous ocular trauma. Enhancement tints may be used to enhance the colour

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of the iris. Opaque colour tints may be used to change the colour and shape of the iris and the pupil.[1]

Studies from North America reported bacterial keratitis in persons who had purchased cosmetic contact lenses from unlicensed vendors (pharmacies, beauty clinics and street vendors).[2,3] None of these patients had received instruction in caring for their contact lenses. The organisms implicated were *P. aeruginosa, Staphylococcus aureus* and *Acanthamoeba* species. One patient needed a corneal graft for visual rehabilitation. A third case series confirmed *P. aeruginosa* as being the most commonly implicated organism in keratitis occurring in patients using extended-wear cosmetic contact lenses.[4]

For a 2½-year period the US government classified non-corrective cosmetic contact lenses as cosmetic devices and not medical devices. The Food and Drug Administration (FDA) issued a consumer warning regarding these lenses: they 'present significant risks of blindness and other eye injury if they are distributed without a prescription or without proper fitting by a qualified eye care professional'.

In November 2005, the law in the USA reclassified non-corrective cosmetic contact lenses as medical devices and allowed the FDA to regulate their sale.[1]

Our patients had purchased their contact lenses from registered optometrists, but none received instruction on cleaning and storage. Two had been offered this instruction, but had declined because they did not want to pay the additional consultation fee.

All three of our patients are now blind in the affected eye and require a corneal graft to visually rehabilitate the blind eye. With the severe shortage of donor corneas in South Africa this is unlikely to happen, and they are likely to remain blind in the affected eye.

Cosmetic contact lenses can only be purchased from registered optometrists in South Africa. Instruction on the cleaning and storage of the lenses should be included as a component of the purchase.

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