Contact Lens Induced Corneal Ulcers; a Series of a Considerable Risk Factor

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Dear Editor,

Corneal ulcers are a major cause of blindness worldwide. A recent eye health care concern is the increasing incidence of contact lens induced corneal ulcers. Delay in the diagnosis and management of corneal ulcers can cause severe visual loss, therefore an early ophthalmologist visit and timely administration of antimicrobial agents can prevent visual loss. Factors associated with increased risk of contact lens related corneal ulcers include overnight wear, long duration of continuous wear, lower socioeconomic status, smoking, dry eye and poor hygiene.[1-3]

During the summer of 2010, five patients with soft contact lens induced corneal ulcers (Figure 1) were referred to Imam Hossein Medical Center. The denominator in all subjects was purchase of the contact lenses from non-professionals such as beauty salons and lack of information regarding contact lens hygiene, disinfection and use.

After history taking and clinical examination, smear and culture tests were performed; all patients were admitted and received broad spectrum antibiotics. The symptoms, signs, results of eye examination and corneal culture were recorded. Mean age of the patients was 19 years and all subjects were otherwise healthy. All patients except one had used cosmetic soft contact lenses. Culture results revealed pseudomonas in 3 cases, pneumococcus in one patient and acanthamoeba in another case. The subject with acanthamoeba keratitis (Figure 2) had initially been diagnosed as a case of herpes simplex keratitis, however a correct diagnosis was established with confocal scan. This patient underwent urgent keratoplasty due to descemetocele formation and impending perforation (Figure 3). Two patients sustained moderate visual loss due to central corneal scar formation (Figure 4) following resolution of the infection and the two other cases had relatively good final visual acuity.

The use of contact lenses for refractive, cosmetic and therapeutic purposes has increased over the past decades due to improvements in contact lens design and material.[4] Convenience, comfort and cosmetics are major reasons for using contact lenses.[4,5] Common complications

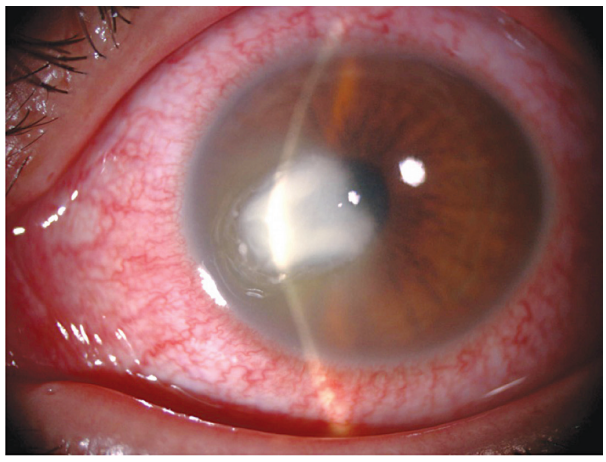

Figure 1. Pseudomonas corneal ulcer following contact lens use.

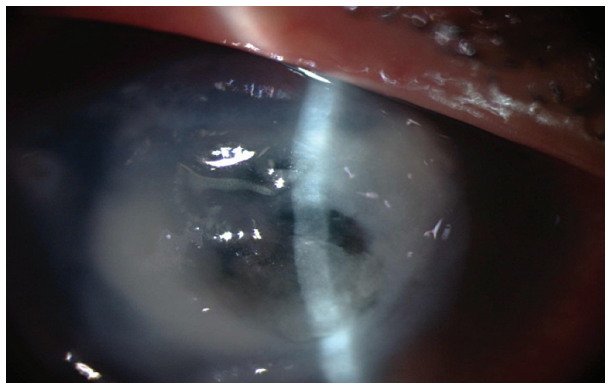

Figure 2. Central corneal thinning and descematocele formation due to acanthamoeba keratitis.

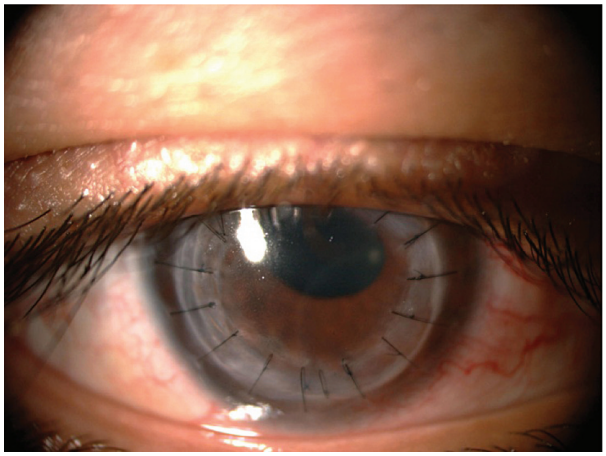

Figure 3. Appearance of the same eye as in figure 2 following urgent penetrating keratoplasty.

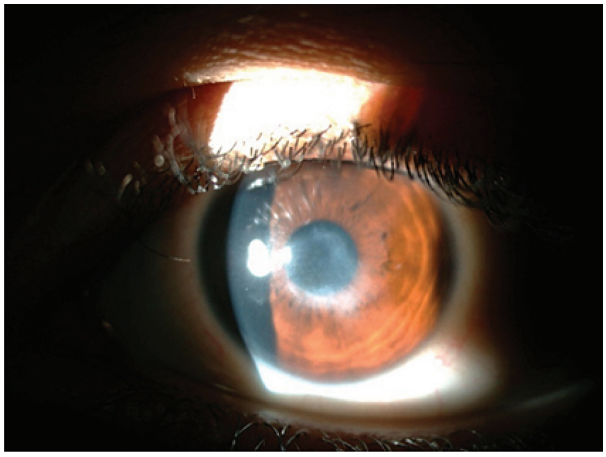

Figure 4. Central corneal scar following successful medical treatment for a Pseudomonas contact lens induced corneal ulcer.

associated with contact lens wear include dry eye, giant papillary conjunctivitis, corneal edema, abrasion, ulcer and neovascularization.[6]

In the current series, the risk factor for contact lens induced keratitis was purchase from beauty shops and beauty salons as they did not educate their costumers about lens hygiene, proper duration of use, or warning signs of keratitis, and did not advise them to consult with ophthalmologists. Unnikrishnan et al have reported lack of awareness among younger contact lens users; most of them preferred using contact lenses in spite of its related complications.[4] Similarly, all of our patients were very young.

A number of patients wear contact lens for therapeutic or prosthetic purposes. These patients are at higher risk of infectious keratitis but are usually under the care of an ophthalmologist and may have more knowledge about contact lens hygiene and keratitis symptoms, and will receive appropriate care earlier in case they develop keratitis.[7] In contrast, young people interested in cosmetic contact lenses may not be aware about their side effects. In a study conducted on 151 college students, Fogel et al reported that subjects who bought contact lenses at their doctor's office followed FDA recommendations more often than those who bought contact lenses elsewhere. In addition, those who bought contact lenses either at a store or over the internet did not follow FDA recommendations[8] which is consistent with our findings. Contact lens users who are not appropriately educated and are not aware of the warning signs of infectious keratitis are at increased risk of mechanical trauma or complications such as corneal infections.

Cosmetic contact lens related corneal ulcer is a considerable sight threatening complication among the young generation as the most population at risk. They may place themselves at a greater risk by purchasing it from beauty shops or beauty salons.

Conflicts of Interest

None.

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