

Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

One-day silicone hydrogel as a therapeutic lens in a severely symptomatic case of meibomian gland dysfunction

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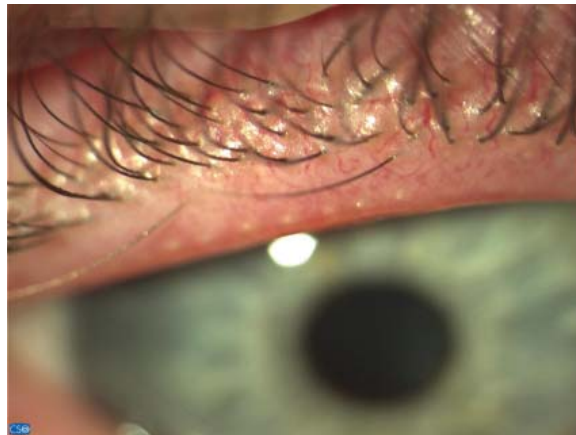


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A 34-year-old male presented to the clinic with complaints of frequently sore eyes and blurry vision, worsening over the past few months. He reported extreme light sensitivity and teary eyes for the previous few days, which made it difficult for him to work on the computer.

Presenting visual acuity with habitual spectacles were 6/6+ Right and Left eye.

Slit lamp examination of the eyelids revealed moderate lid margin hyperaemia and telangectesia in both eyes. Meibomian gland secretions were judged to be moderately altered on the basis of the significant meibomian gland capping observed on all lids (Figure). The ocular surface was intact with no significant conjunctival staining observed; however, when fluorescein was instilled, some diffuse stippled negative staining was observed over the whole cornea, an indication that although the cornea was intact, its surface was somewhat roughened or uneven.



Diagnosis: Meibomian gland dysfunction stage 3 + mucosal keratitis

On the basis of the signs and symptoms described above, meibomian gland dysfunction (MGD) stage 3 + mucosal keratitis was diagnosed according to the classification proposed by the recent TFOS Workshop on Meibomian Gland Dysfunction.¹

The immediate management of the patient required use of a bandage contact lens to minimise the symptoms associated with the mucosal keratitis. A one-day silicone hydrogel lens (narafilecon B) was selected on the basis that it would offer comfort with added biocompatibility. Immediate relief was reported by the patient on lens insertion. For the longer term management of the chronic MGD, a regimen of daily dietary omega-3 fatty acids, lid hygiene and 50 mg oral doxycycline was prescribed.¹

A one-week supply of narafilcon B lenses was provided for both eyes. At review the following day, the ocular surface negative stain had decreased greatly, and was completely resolved by the one-week follow-up, with complete resolution of symptoms. Ongoing management of the MGD continues, with reviews every six months.

Daily disposable lenses

Daily disposable lenses are the fastest growing segment of a mostly stagnant contact lens market, accounting for more than 24% of new fits worldwide over the last five years.² This is likely because of their obvious advantages of convenience, comfort and safety leading to enhanced compliance.³

Indeed, daily disposable lenses eliminate the need for daily cleaning of lenses and contact lens cases, and limit the complications and increased risk for infections, inflammation and allergy associated with build-up of deposits and/or bacterial biofilm on poorly cleaned contact lenses over time.⁴ The possibility of the eye's surface reacting to cleaning solutions soaked up by the contact lenses is also minimised.⁵ Use of fresh lenses daily is also likely to yield enhanced comfort and vision. The recent availability of silicone hydrogel lenses in the daily disposable modality offers the added benefit of enhanced biocompatibility, most particularly higher oxygen availability.

But are newer lenses really safe? It appears that unfortunately contemporary lenses, including silicone hydrogel and daily disposable lenses, have not reduced the rate of contact lens-related infections.⁶ It is worth noting, however, that daily disposable lenses are associated with less severe disease.⁶ A possible explanation for some of these disappointing findings might be that practitioners are more likely to choose newer lens modalities for very specific types of patients.

Recent data from a large international survey suggests that the typical patient fitted with daily disposable lenses is more likely to be older, male, and new to contact lens wear.² A number of these factors, including male gender and the early period of lens wear, have been reported as independent risk factors for infection.⁶ Epidemiological studies may therefore be a reflection of the fact that practitioners tend to offer these newer lens modalities to "at risk" patients.

The case report above is an excellent illustration of this prescribing habit with a one-day silicone hydrogel lens successfully fitted as a therapeutic lens in a case of severely symptomatic mucosal keratitis associated with MGD. Practitioners should be encouraged to remember that the benefits of newer lens modalities are not restricted to challenging cases and that other more "standard" patients are likely to also appreciate these added benefits if given the opportunity to trial them.

REFERENCES

1. Geerling G, Tauber J, Baudouin C, Goto E, Matsumoto Y, O'Brien T, Rolando M, Tsubota K, Nichols KK. The international workshop on meibomian gland dysfunction: Report of the subcommittee on management and treatment of meibomian gland dysfunction. *Invest Ophthalmol Vis Sci* 2011;52:2050-64.
2. Efron N, Morgan PB, Woods CA, The International Contact Lens Prescribing Survey C. An international survey of daily disposable contact lens prescribing. *Clin Exp Optom* 2012;E-pub ahead of print.
3. Morgan PB, Efron N, Toshida H, Nichols JJ. An international analysis of contact lens compliance. *Contact Lens Ant Eye* 2011;34:223-8.
4. Cho P, Boost MV. Daily disposable lenses: The better alternative. *Contact Lens Ant Eye* 2012;E-pub ahead of print.
5. Phillips B, Jalbert I, Papas E, Meagher L, Gengenbach T, Willcox M. Adsorption of lens case products can affect the comfort of silicone hydrogel lenses. *Clin Exp Optom* [11th Scientific Meeting in Optometry] 2006;89:104-17.
6. Stapleton F, Carnt N. Contact lens-related microbial keratitis: How have epidemiology and genetics helped us with pathogenesis and prophylaxis. *Eye* 2012;26:185-93.