Vaulting Dry Eye: Treating Meibomian Gland Disease with Mini-Scleral Contact Lenses
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Many patients prefer contact lenses (CLs) because they feel that CLs provide superior vision and cosmetic appearance compared to spectacles.\(^1\) In fact, some of my patients will even admit to enduring ocular discomfort to maintain their CL use. Nevertheless, this discomfort often becomes unbearable to our patients and about half of them permanently discontinue CL use because of discomfort.\(^2\) Meibomian gland dysfunction (MGD) is a major source of CL discomfort,\(^3\) and it should always be investigated as a potential source of CL intolerance. MGD has historically been treated with interventions like artificial tears and warm compresses,\(^4\) yet these treatments fail at directly addressing CL wearability. The following is a report describing how mini-scleral CLs alone treat mild dry eye and CL intolerance.

Patient History:
- A 30-year-old Caucasian female reported to clinic with complaints of CL intolerance for the past three months.
- History of intolerance to soft, corneal gas-permeable, and piggy-back CLs due to poor comfort and/or vision.
- History of ocular allergies and dry eye, which were being adequately managed with ketotifen fumarate and artificial tears, respectively.

Baseline Exam:
- Manifest refraction: OD: -5.00 -4.00 x 016 (20/20); OS: -4.50 -4.25 x 166 (20/20).
- Normal ocular findings other than mild conjunctival injection, decreased meibomian gland expressibility, and significant meibomian gland atrophy (Figure 1).
- Patient was refit into Mini-Scleral Design (MSD) CLs (Blanchard Contact Lens, Inc.).

Follow-Up Exams:
- Patient reported good comfort and vision (20/20 OD/OS) after minor CL fitting adjustments; CLs were dispensed and patient was released.
- Patient reported no significant complaints and had good vision at next annual exam; artificial tears had been discontinued.

The literature has reports of treating moderate to severe cases of dry eye with modern scleral and mini-scleral contact lenses; the majority of these cases are related to severe systemic health conditions,\(^5-8\) and the literature offers little if any guidance on treating CL intolerance/MGD with mini-scleral CLs. I propose this case provides evidence that mini-scleral CLs are a good option for sustaining a patient’s CL use and for improving their ocular comfort.
References:

Figure 1: Keratograph 5M images of meibomian glands. Areas enclosed by red outlines indicate regions of meibomian gland atrophy. (A) Upper eyelid. (B) Lower eyelid.


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