Sjogren's and Herpes and Sclerals, Oh My!

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Background

Scleral lenses are a great management option for many different ocular conditions, the three most common being corneal irregularity, ocular surface disease, and ametropia.[1] These lenses are fit to vault the cornea and limbus, landing on the bulbar conjunctiva and underlying sclera.[2] This unique fitting relationship with the eye creates a fluid reservoir (FR) between the cornea and the posterior surface of the lens. While the FR is necessary to provide support to the scleral lens, it has also been proven to protect the ocular surface from desiccation and neutralize optical aberrations created from corneal irregularity.[2] Scleral lenses are game changing in treatment of ocular surface disease due to their ability to persistently hydrate the ocular surface. Scleral lenses are also well-known for their ability to mask corneal irregularities, and often provide both increased visual acuity and quality of life in these patients.[1]

Art Optical Ampleye® is a four-zone scleral lens, each of which are independently customizable to allow for maximum fit control. Indications for this lens include irregular corneas, intolerance of corneal GP lenses, issues with lens stability, dry eye conditions, and ocular surface disease. Ampleye® is approved for Ocular Surface and Dry Eye Disease by the Food and Drug Administration.[3]

Case Details

A 52-year-old Caucasian female presented to clinic with a chief complaint of blur at distance in the left eye for two weeks. Ocular history was positive for degenerative myopia in both eyes, Sjogren's syndrome with associated dry eye, and a history of herpes simplex infection in the right eye with an inferior corneal scar. Ocular medications included Restasis and preservative-free artificial tears. Spectacle lens wear was deemed a poor management option for this patient due to her extremely high myopia and corneal scarring. Soft contact lenses were also ruled out due to her severe aqueous deficient dry eye caused by Sjogren's syndrome. Scleral lenses appeared to be the most promising option to manage all three aspects of this patient's ocular history and provide optimal visual acuity.

	OD	OS
Spectacle Rx	-15.25 -2.00 x 044	-18.50 -2.00 x 165
Visual Acuity	20/30	20/30

Table 1 (above): Initial Visual Assessment

Management

After patient education on potential management options, the patient expressed interest in being fit for scleral lenses. The Ampleye® lens design by Art Optical was chosen for this patient because of its HydroLock technology, allowing for symptom relief from dry eye and ocular surface disease. Additionally, its 4-zone customization capability provided confidence in achieving a flawless fit on eye. A front toric lens was ordered in the right eye only after a sphero-cylindrical over-refraction revealed the need for astigmatic correction. The patient reported experiencing immediate relief from symptoms of severe dryness of the ocular surface. Visual acuity not only improved over one line in each eye and two lines binocularly, but also, relief from the extreme minification experienced with spectacle correction was provided.

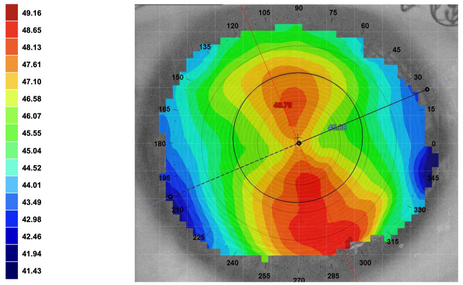

Figure 1 (above): Axial corneal topography of the right eye

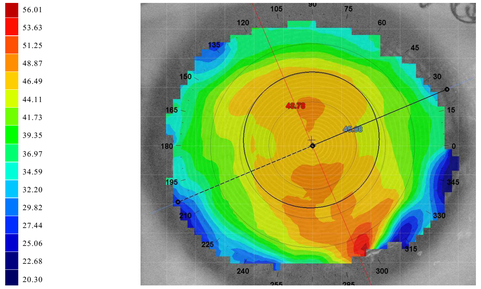

Figure 2 (above): Tangential corneal topography of the right eye showing inferior nasal corneal scar

Art Optical Ampleye® Scleral 16.5 diameter with HydraPEG								
	Power	**BC**	**Sag**	**Clearance**	**PCZ**	**LLZ**	**SLZ**	**VA with lenses**
OD	-7.75 -1.00 x 030	8.44	4000 um	400 um	0	+4	+3, +14 toricity	20/25+
OS	-11.50 DS	8.04	4000 um	400 um	0	+2	0, +11 toricity	20/25+

Discussion

Ampleye® scleral lenses work wonders for a seemingly endless list of indications ranging from simple ametropic correction to neutralization of aberrations from severe corneal scarring. This patient's lenses provided comfort from her debilitating ocular symptoms while also improving her quality of life by enhancing BCVAs and quality of vision. Additionally, the patient was able to discontinue wearing heavy, unsightly spectacle lenses which have hindered her ability to thrive in her occupation as a professor. Scleral lenses are an optimal tool to manage patients with ocular surface disease, dry eye disease, and corneal scarring.

Conclusion

Scleral lenses are a superior management option for a variety of ocular conditions, notably including:

- **Corneal irregularity** (Keratoconus, scarring, post-refractive surgery, etc.)
- **Ocular surface disease** (Dry eye syndrome, Neurotrophic keratopathy, Sjogren's syndrome, etc.)
- **Refractive error** (High or degenerative myopia, irregular astigmatism, high hyperopia, etc.)

In this case, scleral lenses worked exceptionally well to vault peripheral corneal scarring. The patient also benefited from the scleral lens' ability to treat her severe dry eye.

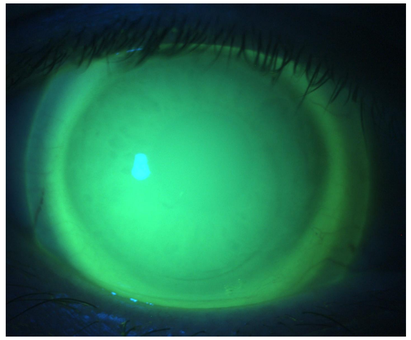

Figure 3 (above): Ampleye® scleral lens on the right eye

References

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