Hybrid Lens Use in a Patient with Ocular GVHD and Corneal Scarring

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Background

Ocular graft versus host disease (GVHD) can be a chronic condition resulting in moderate to severe dry eye disease. Findings associated with ocular GVHD include conjunctival inflammation, corneal epithelial changes (punctate keratopathy, filaments, or erosions), meibomian gland dysfunction (MGD), corneal scarring, stromal ulceration, and symblepharon[1,2]. These changes to the ocular surface can frequently lead to secondary microbial keratitis[2,3]. Patients with ocular GVHD often experience ocular pain or discomfort and a decrease in visual function resulting in impaired vision-related quality of life[1]. Soft bandage contact lenses can provide relief from symptoms of ocular GVHD and may help to stabilize the tear film and restore cell turnover[4]. In cases of corneal scarring and irregular astigmatism, however, soft bandage lenses do not significantly improve vision. Rigid gas permeable lenses improve vision by masking corneal irregularity but can be uncomfortable especially in patients with concurrent ocular surface disease. Hybrid lenses as well as piggy-back lens systems provide the comfort of a soft bandage lens with the optical quality of a rigid gas permeable lens. Hybrid lenses have the advantage of being more convenient and in many cases more oxygen permeable than piggy-back lens systems[5]. The gas permeable (GP) portion of hybrid lenses, like a scleral lens, also provides a thin liquid bandage between the lens and the cornea, keeping the center of the cornea lubricated.

Case Details

50 year old female with a history of resolved bacterial versus herpes simplex keratitis in the setting of ocular GVHD presents for contact lens fitting. Patient currently wears a soft bandage contact lens that provides good comfort but poor vision. The patient is no longer a candidate for scleral lenses due to forniceal shortening.

BCVA 20/200 OD secondary to corneal scarring and neovascularization.

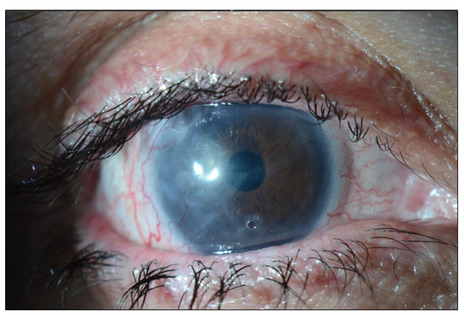
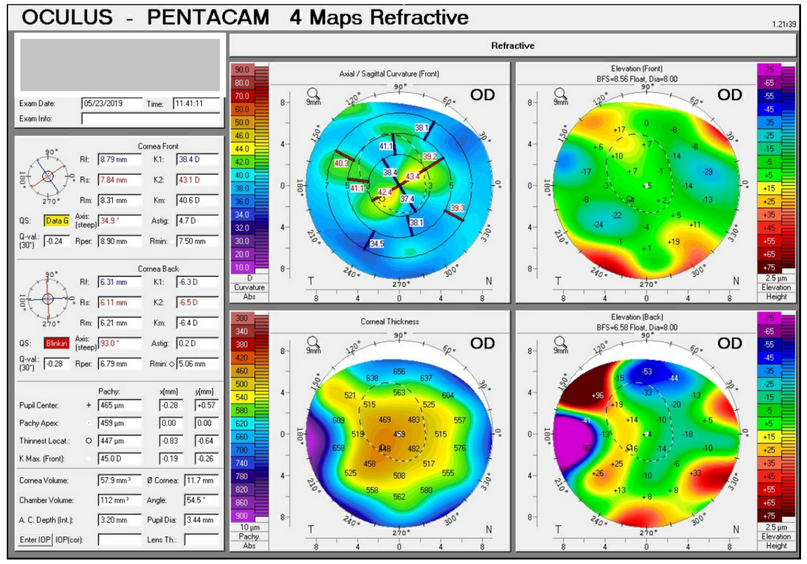


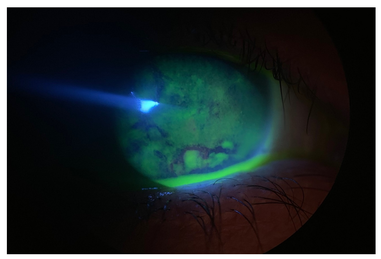
Photo of patient with corneal scarring and neovascularization wearing soft bandage lens

Contact Lens Fitting

Fitting Challenges



Irregular topography from corneal scarring leading to poor vision in soft contact lenses



Severe surface dryness causing discomfort and need for a bandage lens

Forniceal shortening prohibiting comfortable scleral lens wear

Solution

Dispensed Lens:
SynergEyes Duette 7.8 / -0.50 / 14.5 Steep Skirt

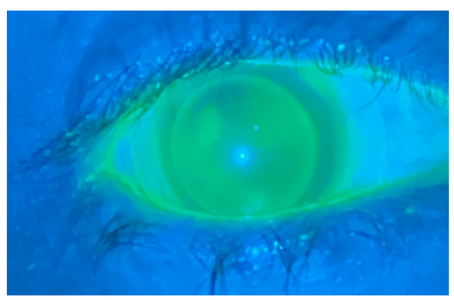


Image sent to consultants to determine best final lens parameters

Diagnostic lens (Duette 7.9 / -3.00 / 14.5 Steep) used for fitting

Take Home Points

- Corneal scarring and ocular GVHD are off-label uses for hybrid lenses
- Typically, fit changes in hybrid lenses are indicated when there is corneal staining with lens removal. In cases of ocular GVHD there is corneal staining at baseline
- Slit-lamp photography can be a very useful tool in monitoring changes in corneal staining with hybrid lens wear
- For this patient, the rigid center corrects irregular astigmatism while the soft skirt acts as a bandage lens
- The thin liquid bandage that the GP portion of the lens creates helps to keep the center of the cornea lubricated

Contact Lens	Soft Bandage Lens	Hybrid Lens
Visual Acuity	20/200	20/40

- Patient's vision improved to 20/40 with a hybrid lens and she was able to comfortably wear it for 8 hours daily

Conclusions

Hybrid lenses can be an overlooked yet effective option in patients with ocular GVHD. This is especially true in patients who are not candidates for scleral lenses, or who are unable to attain acceptable vision in soft lenses.

References

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