



Purpose

This case report presents a successful mini-scleral lens fitting in an 8-year-old male with a history of ruptured globe, aphakia, corneal scar, high astigmatism, strabismic amblyopia and an intolerance to other contact lens modalities.

Methods

The patient presented to the Moran Eye Center on July 26, 2018 for a contact lens evaluation. The patient has a history of left eye trauma at the of age three that resulted in a ruptured globe and acquired cataract. The globe was subsequently repaired and the cataract was extracted. He later developed strabismic amblyopia and eventually received strabismus surgery at the age of five. The patient has been in contact lenses since the injury, but has struggled to find a contact lens that is both clear and comfortable. He has previously tried soft, gas permeable, piggy back, hybrid, and large diameter scleral lenses.

The patient presented with 20/20 uncorrected vision in the right eye and 20/50 corrected vision in the left eye with an 18.2 diameter BostonSight PROSE scleral lens. The lens demonstrated a good fit, but he experienced significant discomfort from the large scleral lens. Anterior segment was unremarkable in the right eye. The left eye revealed a full thickness, limbus to limbus, cornea scar from 3 to 7 o'clock, diffuse pigment on endothelium, localized anterior synechiae, aphakia and a fixed, dilated pupil. Topography showed significant corneal irregularity in the left eye with nearly eight diopters of astigmatism.

Results

The patient was refit into a 16.0 mm diameter Zenlens scleral lens. The trial lens consisted of a 7.6 base curve, 4.500 SAG and -2.00 SPH power. The over refraction was +15.25 SPH and resulted in 20/40 vision. After 30 minutes of settling, there was 250 um of central clearance, 25 um of limbal clearance and good edge lift. A contact lens was ordered with increased limbal clearance, toric peripheral curves and an appropriate change in power.

Ordered Contact Lens Rx: Zenlens RC	
Base Curve	7.60 (44.37)
Diameter	16.0
Power	+16.75
SAG	4.500
Material	Optimum Extra
Coating	Hydra-Peg
Limbal Clearance	Increased 60 um
Toric Peripheral Curves	Horizontal: Flat 1 Vertical: Steep 1

At the dispensing visit, the patient reported significant improvement in comfort with no change in vision compared to the previous lens. The new lens revealed 20/50+ vision, 250 um central clearance, 25um limbal clearance nasal and temporally, good edge lift and a +0.50 over refraction. To improve the health and vision, a lens exchange was ordered with increased limbal clearance and a change in power.

Final Contact Lens Rx: Zenlens RC	
Base Curve	7.60 (44.37)
Diameter	16.0
Power	+17.25
SAG	4.500
Material	Optimum Extra
Coating	Hydra-Peg
Limbal Clearance	Increased 100 um
Toric Peripheral Curves	Horizontal: Flat 1 Vertical: Steep 1

Results

At the one month follow up, the patient reported continued comfort with the smaller diameter scleral lens and better vision than the previous lenses. He presented with 20/40 vision, 250 um of central clearance, 75 um of limbal clearance and good edge lift. Deposits were noticed on the lens. A hydrogen peroxide based cleaning system along with a gas permeable lens cleaner was recommended for the patient. The patient was directed to follow up in 4 months for a contact lens evaluation.

Conclusion

Patients with complex ocular histories and severely irregular corneas require an individualized treatment plan; not one lens type will work for every patient. Multiple lens modalities, sizes and materials need to be attempted to optimize the patient's health, vision and comfort. If one lens type is not working, it may be wise to change the lens type sooner, rather than later. In this case report, the patient was prescribed *ten* different 18.2 diameter BostonSight PROSE lenses, ultimately a smaller 16.0 diameter scleral lens provided this pediatric patient with a tolerable contact lens that maintaining good vision.

References

Schornack M. Scleral lenses: a literature review. *Eye Contact Lens*. 2015; 41(1): 3-11. PMID: 25536528.

Disclosures

None