71 yo caucasian male, FB, presented for a CL fitting OS

Ocular history: Fuchs’ Endothelial Dystrophy OU

Ocular surgical history: POAG OU

Ocular history: Fuchs’ Endothelial Dystrophy OU

FB’s OD eye was fit 1 month prior in a corneal GP that provided 20/30 DVA

Unaided VA: 20/400

Manifest refraction: +5.50-1.50X140

IOP: 7 mmHg

Endothelial cell count: 1849CD, 28CV, 68HEX.

FB had many challenges: vision that required a specialty CL, a graft with 10D of ATR astigmatism, a thinnest corneal measure.

K’s, 10D of ATR corneal astigmatism, 505 um

Topography

Biomicroscopy Findings (Figure 2A-C)
Anterior chamber tube shunt with an inferior-temporal limbus. Clear, well-centered full thickness corneal graft. Corneal dellen at the inferior-temporal limbus. Iris LPI Clear, centered PCIOL

Case Description

Lens Fitting

1. Hybrid and Scleral trial lenses: both improved VA with SOR but fit poorly.

2. Empirically ordered corneal GP:
   a. Fit: decentered inferiorly, moved excessively, inferior bubble formation. The lens was re-ordered with modifications several times, but fits were all similar to the original lens.
   b. A piggyback was attempted but did not improve the fit.
   c. Improved vision to 20/70.

3. EyePrintPRO: An ocular impression was taken and sent to the lab, where a lens was designed to align with the irregular conjunctival surface. (Figures 3-6)

Conclusions

FB had many challenges: vision that required a specialty CL, a graft with 10D of ATR astigmatism, a dellen at the limbus, and a large bleb. While most of these could have been overcome with a traditional scleral lens, blebs can be a more difficult conjunctival abnormality to fit.

Typically, a notch or microvault can be used to fit a scleral lens over elevated conjunctival tissue, but both of these options can be limited in how large they can be made and may require several size adjustments to achieve a proper fit. Modifying the notch/ microvault to improve the fit can be done in some cases, but blebs are unique in that adding inappropriate amounts of pressure can increase IOP, which could lead to permanent optic nerve damage. It may also be valid to consider avoiding the bleb completely, but in our case, other lens options could not satisfy his needs.

EyePrintPRO was the best choice that would provide the desired optical correction over the graft and align well with the sclera 360°, protecting the bleb, and thus, the optic nerve.

References/Acknowledgements


Conclusions

Acceptable fit with no NaF staining of conjunctival tissue or cornea when lens was removed

Bleb did not appear affected by the lens - IOP measurements ~8 mmHg at each visit

Endothelial cell and topography measurements were both stable.

EyePrintPRO on eye (Figures 7-9):

Lens demonstrated 250 um central clearance, good limbal clearance, and aligned well with the periphery.

DVA: 20/40" (plano SCOR)

FB has been followed very closely since the lens dispense. At every follow up:

FB has been followed very closely since the lens dispense. At every follow up:

Bleb did not appear affected by the lens - IOP measurements ~8 mmHg at each visit

Endothelial cell and topography measurements were both stable.

References/Acknowledgements

Special thanks to Maria Walker, Keith Parker, John Galles, Jordan Gold, and Derek Bugino.