

Reverse Geometry Intralimbal GP Fitting on a Monocular Patient with Multiple Glaucoma Drainage Devices – A Low Vision Perspective

Colleen Furey OSP, Stacy Zubkousky OD FAAO FSLs, Manal Akkouche OSP, Solange Carpio OSP, Herline Germain OSP, Thuy – Lan Nguyen OD FAAO FSLs, Hsuan Ariel Chao OD

Nova Southeastern University College of Optometry, Fort Lauderdale, Florida

Case Summary

GPs can be fit after penetrating keratoplasty (PK) due to their ability to provide vision correction and high levels of oxygen exchange to corneal tissue¹. They can be a great solution especially in fitting a patient with an irregular sclera. This case report highlights a patient post PK with multiple glaucoma device implants. It also highlights additional considerations made when fitting a lens on a low vision patient who is looking to improve their overall visual experience rather than just their acuity.

Case History

A 53-year-old Hispanic female presented to the clinic for a contact lens fitting OS. She presented wearing a 2-year-old corneal GP lens OS with issues of lens discomfort and fear of the lens falling off during eye movement.

Ocular History:

- Uveitic glaucoma OU including three glaucoma drainage devices OS
- Bilateral corneal transplants
- BCVA OD: NLP, BCVA OS: 20/200 with severely constricted visual fields

Contact Lens Goals:

- Improve lens handling
- Enhance mobility and safety during navigation with her white cane

Baseline Testing and Contact Lens Selection

Topography OS:

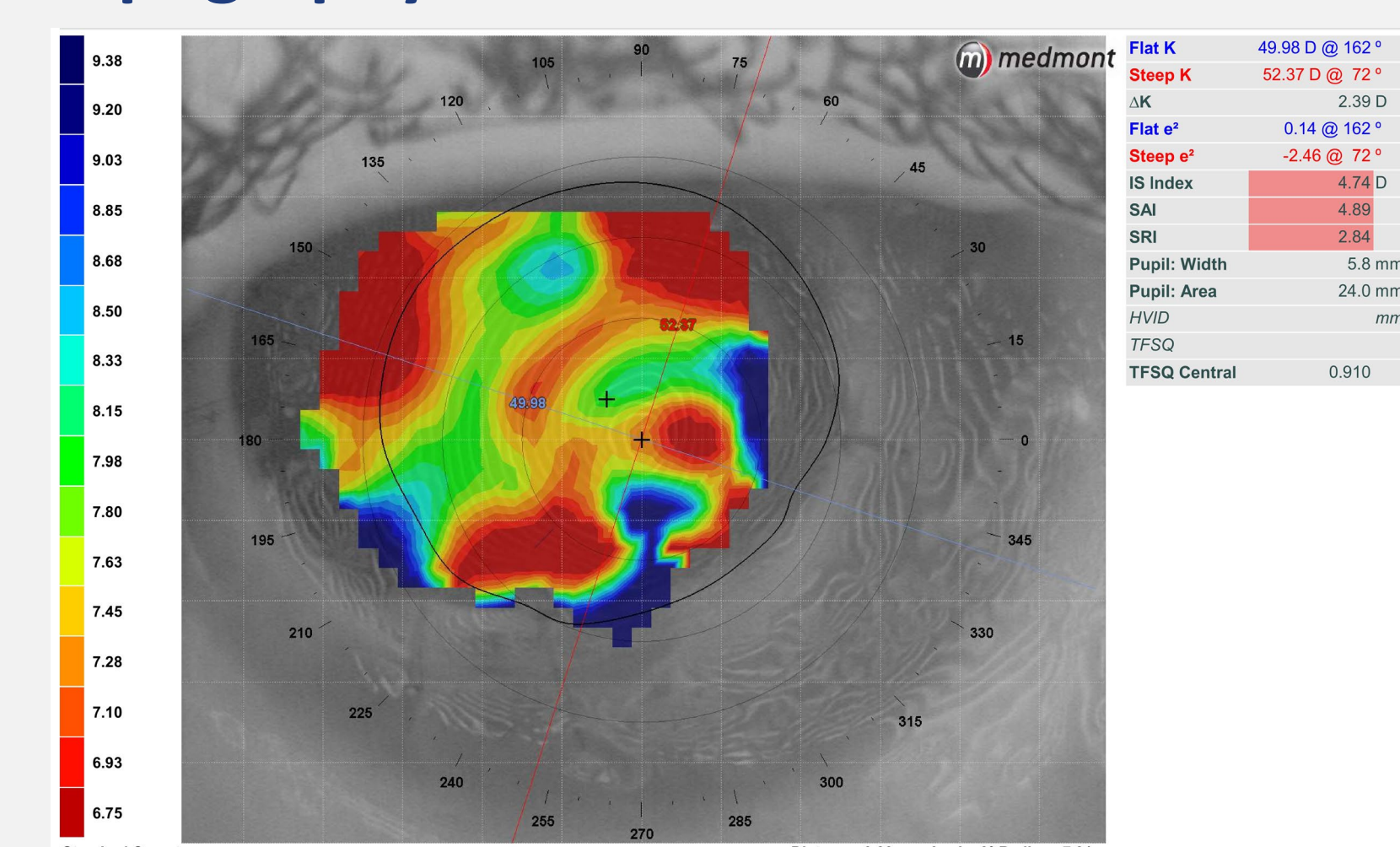
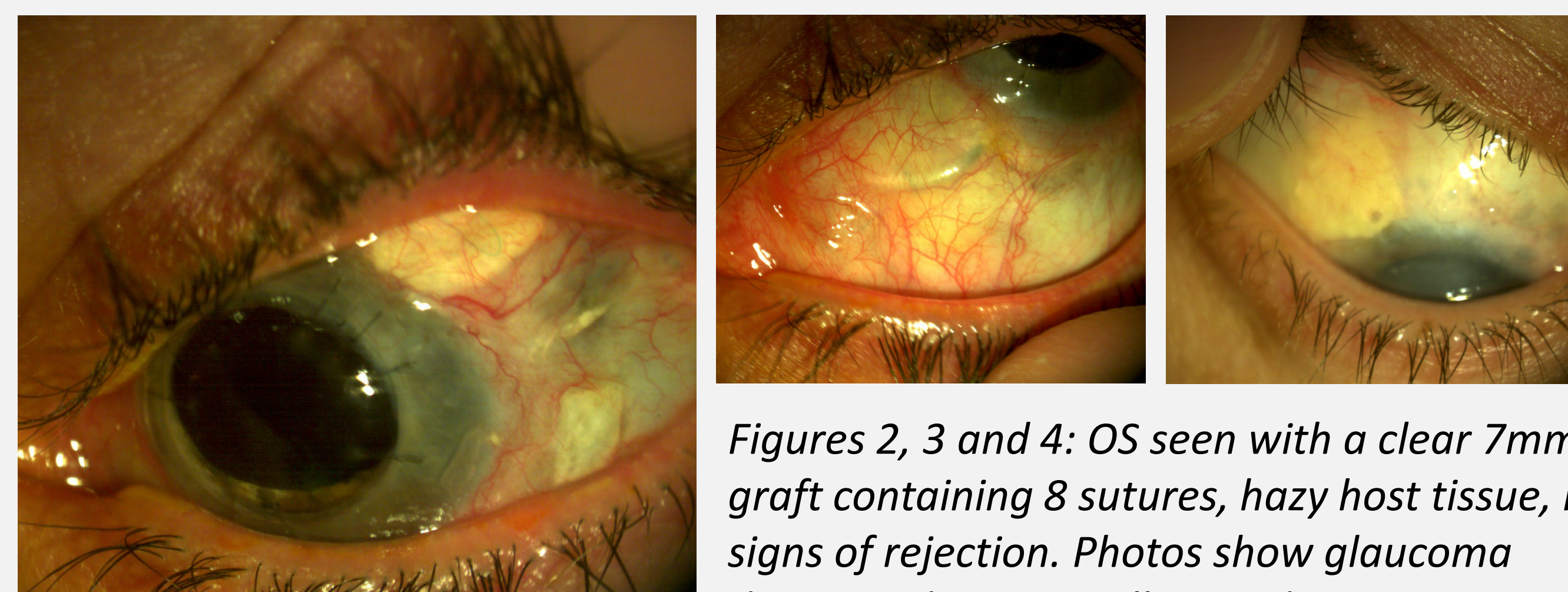


Figure 1: Topography of OS showing irregular areas of flattening and steepening, with increased steepening along the host graft junction

Anterior Segment Photos OS:



Figures 2, 3 and 4: OS seen with a clear 7mm graft containing 8 sutures, hazy host tissue, no signs of rejection. Photos show glaucoma drainage devices in all 4 quadrants.

Contact Lens Considerations

- Due to the irregularity of her sclera and risk of impinging her glaucoma drainage devices, a scleral lens fitting was ruled out
- Topography revealed steepening along the host graft junction supporting the choice of an oblate intra-limbal design

Contact Lens Fitting and Follow-up

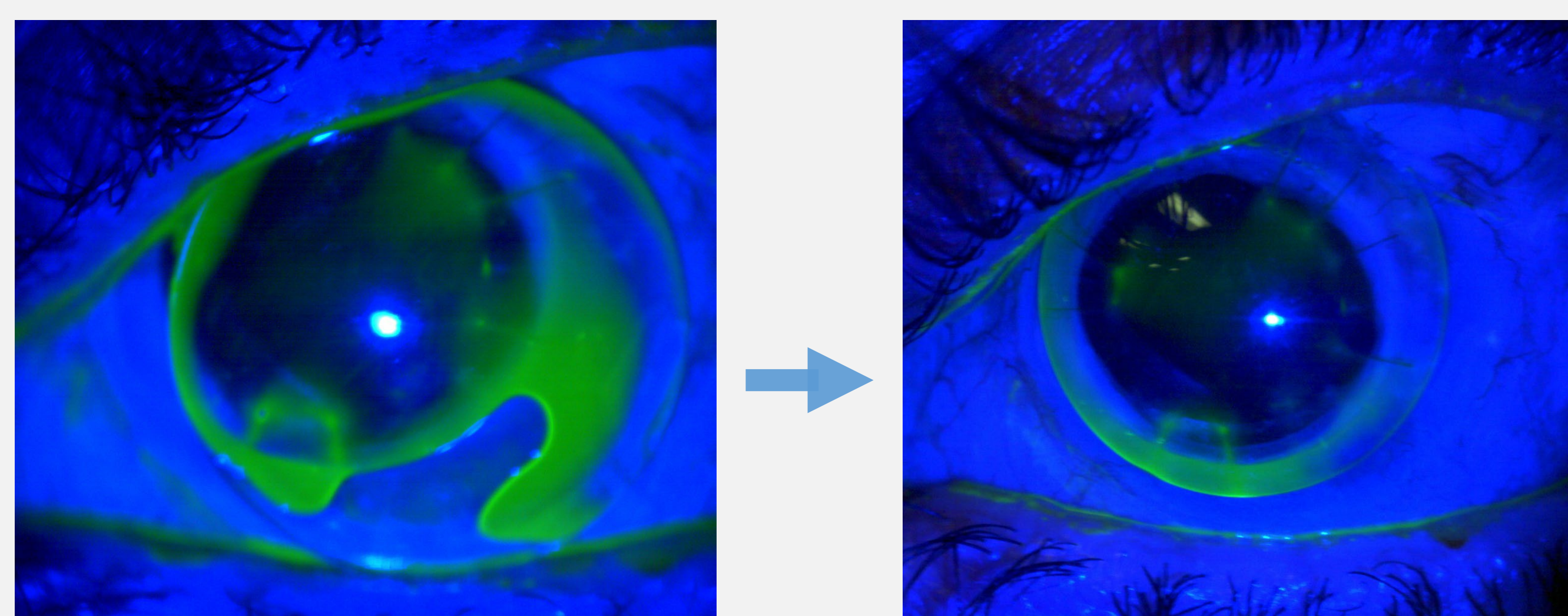


Figure 5: Unstable habitual lens with NaFL and cobalt blue light

Figure 6: Final lens with NaFL and cobalt blue light

- A small diagnostic GP lens was used for base curve assessment and over-refraction and adjustments were made to order a large diameter oblate GP lens
- Finalized lens parameters:

Power	BC	OAD	Edge	Design	Material	Tint
+6.50 sph	6.92	10.4	+0.50	Quad sym w. inf steepening	Roflucon E	Blue

Low Vision Modifications

- An over-refraction for intermediate viewing was added to the lens to allow the patient to comfortably work on her computer at home
- Minus powered protective polycarbonate spectacles during distance tasks and navigation as monocular protection
- Roflucon E in a dark blue handling tint to help the patient find the lens during insertion and removal while still providing high oxygen permeability to corneal graft

Discussion

There are multiple philosophies for fitting a corneal GP after PK. Additional considerations should be kept in mind when fitting contact lenses on low vision patients. Our patient did not have an improvement in BCVA from her habitual lens to her new lens, but her overall visual experience was markedly improved by incorporating a darker handling tint than her habitual lens, adding a quadrant specific design for enhanced lens stability, and considering her visual goals of intermediate viewing. Patient education is highly important in these cases to create reasonable and attainable visual goals and expectations. Low vision patients should also be directed to their local low vision specialist for evaluation of low vision devices and mobility training, if needed.

Conclusion

Intralimbal GP lenses are a fitting option after corneal transplant when scleral lenses are not recommended. For low vision patients, the lens design can be adjusted for better handling during insertion and removal and, if monocular, corrected for near tasks so protective polycarbonate lenses can be worn at distance and while moving, thus improving patient safety. Ultimately, the patient's goals should be kept in mind during the fitting process, as it is the essence of low vision.

References

1. Eggink FA, Nuijits RM. A new technique for rigid gas permeable contact lens fitting following penetrating keratoplasty. Acta Ophthalmol Scand. 2001 Jun;79(3):245-50. Doi: 10.1034/j.1600-0420.2001.790307.x.