

Case Report
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Management of Post-Keratoplasty Astigmatism: A Case Report on Long-Term Visual Rehabilitation with Small Aperture Lenses in Cataract Surgery

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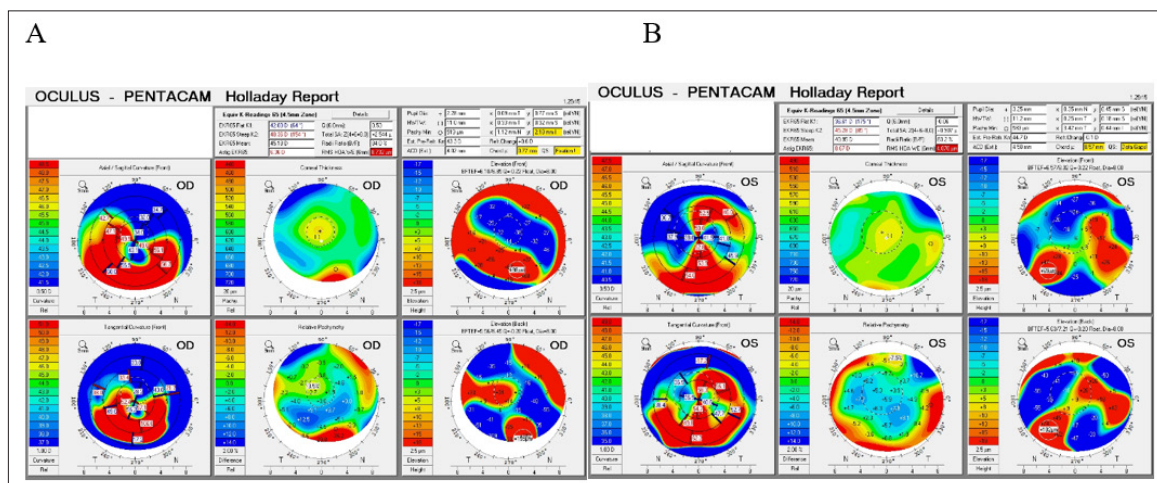
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Case Report

A 67-year-old male with a history of bilateral corneal transplants for keratoconus in 1984 presented with nuclear sclerosis and posterior subcapsular cataracts in both eyes, likely secondary to prolonged topical steroid use and age. Previous attempts to reduce his astigmatism with astigmatic keratotomy had no effect other than to increase the irregularity of the astigmatism. (Figure 1A, 1B). Intervention of cataract surgery with small aperture lenses and postoperative YAG laser capsulotomy OU resulted in UCVA 20/80 OD and 20/60 OS with bilateral UCVA 20/50-1. BCVA was 20/40 OD and 20/40 OS. Manifest refraction postoperatively was $-1.00+4.50 \times 155$ and $-1.50+5.50 \times 085$ with bilateral BCVA 20/30 OU. The patient is one year out considering scleral lens options but is highly satisfied with his UCVA and instead opts to wear glasses when necessary.


Figure 1:

 A) Preoperative Pentacam Image of the Right Eye Shows $+6.36D@154$ of Irregular Astigmatism.

 B) Preoperative Pentacam Image of the Left Eye Shows $+8.63D@085$ of Asymmetric Astigmatism.

Discussion

We present a case of a patient with bilateral corneal transplants performed 40 years ago who developed cataracts and significant post-keratoplasty astigmatism, having failed previous interventions with scleral contact lenses and astigmatic keratotomy OU. Small aperture lenses for irregular astigmatism have been reported [1,2]. The FDA indications for small aperture lenses are for unilateral implantation, normal corneas, normal retina, and normal ocular anatomy with widely dilated pupils. Bilateral implantation poses risks such as reduced contrast sensitivity and contrast acuity [3].

Conclusions

The case report discusses bilateral cataract surgery with small aperture lenses as a treatment option in severe irregular astigmatism post-keratoplasty. Author KGS has a series of 22 patients with 44 eyes implanted bilaterally with irregular corneas and irregular astigmatism with one year follow-up. No intraocular lenses have been removed for exchange, one eye of one patient has been enhanced with resolution of residual astigmatism using topography guided laser vision correction, and one patient has reduced nighttime vision in both eyes but has elected to keep the intraocular lens due to other improvements in their vision. This case highlights the need for individualized refractive management in post-keratoplasty patients. Exploring the mechanism behind irregular residual astigmatism, alternative surgical interventions, and preventive strategies is crucial for optimizing long-term visual rehabilitation in post-corneal transplant patients.

Patient Consent

Written consent to publish this case has not been obtained. This report does not contain any personal identifying information.

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Conflicts of interest

The following authors have no financial disclosures: KS, MG

Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

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