



**Title: High Astigmatism Secondary to Peripheral Ectasia Recurrence
in Post Penetrating Keratoplasty Eyes Managed with Mini-Scleral
Contact Lenses**

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Abstract:

Purpose

To evaluate the visual and clinical outcomes of miniscleral contact lens wear in patients with high astigmatism secondary to recurrent peripheral corneal ectasia following penetrating keratoplasty (PK) for keratoconus.

Methods

This retrospective case series included five patients (seven eyes) who presented with reduced visual acuity and/or poor tolerance of existing rigid gaspermeable contact lenses decades after PK for keratoconus. All eyes demonstrated characteristic peripheral thinning at the graft–host junction with associated high astigmatism, while maintaining clear central grafts and high visual potential. Patients were fitted with modern miniscleral contact lenses (No.7 Comfort 15 and OneFit MED designs). Best corrected visual acuity, lens tolerance, and wearing patterns were assessed, with followup conducted at regular intervals over six months.

Results

All eyes achieved a best corrected visual acuity of 6/9 or better with miniscleral contact lenses. Six of seven eyes were successfully and comfortably rehabilitated, with regular lens wear of at least 4 days per week and daily wearing times of 8–12 hours. One patient discontinued lens wear due to difficulty with insertion and removal despite achieving a satisfactory fit. No cases of clinically significant corneal oedema or contact lens–related complications were observed during followup.

Conclusion

Miniscleral contact lenses are an effective and well tolerated option for the refractive management of high astigmatism secondary to peripheral ectasia in postPK eyes. They provide meaningful visual rehabilitation and should be considered prior to further surgical intervention in suitable patients.