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LONG-TERM OUTCOMES OF IRIS-CLAW INTRAOCULAR LENS IMPLANTATION IN APHAKIC EYES: A COMPARISON OF FIXATION TECHNIQUES AND INCISION TYPES

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The purpose of the study was to evaluate long-term outcomes of iris-claw intraocular lens (IOL) implantation in aphakic eyes, specifically comparing anterior versus retropupillary fixation and corneal versus sclero-corneal tunnel incisions, with respect to visual acuity improvement and complication rates.

This retrospective study included 340 eyes of 303 patients who underwent iris-claw IOL implantation between August 2006 and August 2023, with a mean follow-up of 46 months (range: 6–147). Among them, 209 eyes received anterior iris fixation and 131 underwent retropupillary fixation. A corneal incision was used in 199 cases, and a sclero-corneal tunnel in 141. Best-corrected visual acuity (BCVA), refractive outcomes, and postoperative complications were analyzed.

A significant and sustained improvement in BCVA was observed across the study population. The strongly hyperopic preoperative refractive status due to aphakia (mean spherical equivalent: +14 diopters) was effectively corrected, with no deviation from the targeted refractive outcomes. The most frequent complications included cystoid macular edema (27.4%) and transient ocular hypertension (17. 1%). Severe complications were rare, including retinal detachment (0.6%) and endophthalmitis (0.3%). All complications resolved with appropriate management. No significant differences were found in visual outcomes between fixation techniques or incision types. However, a slightly higher incidence of cystoid macular edema was observed in the anterior fixation group (p 0.083). In addition, corneal incisions were associated with significantly higher surgically induced astigmatism than sclero-corneal tunnels. Two cases in the sclero-corneal group (0.6%) required surgical repair for ciliary body detachment.

Iris-claw IOL implantation in aphakic eyes demonstrated effective long-term visual rehabilitation with significant improvements in BCVA and accurate refractive correction. Both anterior and retropupillary fixation methods, as well as different incisions, showed comparable safety and efficacy. However, sclero-corneal incisions may be preferable when astigmatism control is prioritized, and retropupillary fixation might reduce the risk of macular complications. This study highlights the importance of individualized surgical approaches based on patient-specific risk profiles and clinical context.