Clinical and Anatomic Outcomes of 3-Piece Poly(methyl methacrylate) Intraocular Lens Rescue and Scleral Refixation

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ABSTRACT

Purpose: To report clinical and anatomic outcomes of a single-stage rescue and sutureless 30-gauge needle-assisted transconjunctival intrascleral fixation of dislocated 3-piece rigid poly(methyl methacrylate) (PMMA) intraocular lenses (IOLs).

Design: Retrospective, noncomparative, single-surgeon interventional case series.

Subjects: 25 eyes from 24 patients with dislocated or mobile PMMA IOLs that were surgically rescued and fixated to the sclera were examined.

Intervention: All eyes underwent concurrent 23- or 25-gauge pars plana vitrectomy and IOL rescue with sutureless transconjunctival needle-assisted flanged haptic intrascleral fixation. Lamellar scleral dissection for haptic fixation was performed 3 mm posterior to the surgical limbus with 30-gauge needles. Postoperative IOL tilt was measured with ultrasound biomicroscopy (UBM).

Main Outcome Measures: Visual acuity, lens IOL tilt measured via ultrasound biomicroscopy (UBM), and postoperative complications were analyzed.

Results: IOL's were successfully refixated in 24 of 25 eyes. Mean preoperative LogMAR visual acuity was 1.21 ± 0.79 (median 1.3, Snellen equivalent 20/400) improved to 0.28 ± 0.35 (median 0.14, Snellen equivalent. 20/30, $p < 0.0001$). Mean IOL tilt measured by UBM (n = 7) was 3.79 ± 3.60 degrees. Average postoperative follow up was 348 ± 284 days (range 7-979 days). Postoperative complications included vitreous hemorrhage (n = 9), retinal detachment (n = 1), cystoid macular edema (n = 3), and persistent corneal edema (n = 3). 3 eyes (13%) required additional surgery for the following indications: retinal detachment (n = 1) and delayed haptic slippage and secondary IOL tilt causing irregular astigmatism (n = 2). All 3 secondary surgeries were successful and resulted in improved visual acuity.

Conclusions: Intrascleral needle-assisted fixation of dislocated or mobile 3-piece PMMA IOLs is an effective and safe method to restore visual acuity.