

Long-term assessment of tilt of glued intraocular lenses: an optical coherence tomography analysis 5 years after surgery.

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Abstract:

PURPOSE: Long-term assessment of the optic position of glued transscleral fixated intraocular lens (IOL) with optical coherence tomography (OCT).

DESIGN: Prospective observational case series.

PARTICIPANTS: Patients with a minimum 5 years' follow-up after glued IOL surgery were included.

METHODS: Postoperatively, IOL position was examined by anterior segment OCT (Carl Zeiss Meditec) and the scans were analyzed in 2 axes (180degree-0degree and 270degree-90degree) using MatLab (Mathworks). Best-corrected visual acuity (BCVA; Snellen's charts), Orbscan, retinoscopy, refraction, and slit-lamp biomicroscopy were performed.

MAIN OUTCOME MEASURES: The distance between the iris margin and the anterior IOL optic (D1, D2), slope of the line across the iris and IOL, the slope ratio between the IOL and iris, IOL tilt, and optic surface changes were determined and correlated with the astigmatism and vision.

RESULTS: A total of 60 eyes (mean follow-up of 5.9 \pm 0.2 years; range, 5-6 years) were evaluated. There was a significant correlation ($P = 0.000$) between the slope of iris and the IOL in horizontal and vertical axes. The mean D1 and D2 were 0.94 \pm 0.36 and 0.95 \pm 0.36 mm, respectively. Nine

of 60 eyes (15%) had pigment dispersed on the IOL surface. Twenty-one eyes (35%) had optic tilt detected on OCT and 65% of eyes had no optic tilt. The mean angle between the IOL and the iris was noted to be 3.2 ± 2.7 degree and 2.9 ± 2.6 degree in horizontal and vertical axes, respectively. The mean ocular residual astigmatism (ORA) was 0.53 ± 0.5 diopters. There was no difference in the ORA between the eyes with and without tilt ($P = 0.762$). There was no correlation ($P = 0.348$) between the ORA and BCVA. Position of the IOL was not dependent on the type of lens, age of the patient, or the preoperative surgical indication.

CONCLUSIONS: Long-term analysis with OCT demonstrated good IOL positioning without any significant optic tilt in patients with glued IOL fixation.

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