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Long-term results of a new posterior chamber phakic intraocular lens in patients with high myopia: 5-year results

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Abstract

Purpose: To evaluate the long-term refractive outcomes of Eyecryl posterior chamber spherical phakic intraocular lens (pIOL) implantation in high myopia and endothelial cell density (ECD) change.

Setting: Beyoglu Eye Training and Research Hospital, Istanbul, Turkey.

Design: Retrospective.

Methods: Eyes that were not suitable for corneal refractive surgery, had high myopia between -6.00 diopters (D) and -20.00 D, had Eyecryl posterior chamber spherical pIOL implantation, and had at least 5 years of follow-up were included. Preoperative ECD was ≥2300 cells/mm2 and cylindrical value was ≤2.0 D in all cases. Preoperative and postoperative first, third, and fifth years of refraction, uncorrected and corrected distance visual acuity (UDVA/CDVA), and ECD were recorded.

Results: 36 eyes of 18 patients were examined. The mean UDVA and CDVA in postoperative fifth years were 0.24 ± 0.19 logMAR and 0.12 ± 0.18 logMAR, respectively. The safety and efficacy indices were 1.52 ± 0.54 and 1.14 ± 0.38, respectively. At 5 years, the spherical equivalent was ±0.50 D in 75% of eyes and ±1.00 D in 92% of eyes. After 5 years, the mean cumulative ECD loss was 6.91% (P = .07). The annual ECD loss was 1.57% in the first year, 0.26% between 1 year and 3 years, and 2.38% between 3 years and 5 years. Asymptomatic anterior capsule opacity developed in 1 eye 4 years after surgery. Rhegmatogenous retinal detachment developed in 1, and myopic choroidal neovascular membrane occurred in 1 eye.

Conclusions: Eyecryl posterior chamber spherical pIOL implantation is one of the effective and safe refractive surgical methods in correcting high myopia with predictable and stable refractive results over a 5-year period. Longer-term studies are needed for complications such as decreased ECD, retinal complications, and lens opacity.

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