

SREE BALAJI MEDICAL COLLEGE & HOSPITAL

DEPARTMENT OF OPHTHALMOLOGY

Indications for exchange of posterior chamber phakic intraocular lens in high myopia

Study Design & Purpose:

A retrospective observational case series (2015–2022) aimed to analyze the causes, frequency, and outcomes of pIOL exchange in patients with high myopia at LV Prasad Eye Institute.

Key Findings:

Total pIOL Implantations: 1715 eyes

Spherical pIOLs: 328 (19.1%)

Toric pIOLs (TpIOLs): 1387 (80.8%)

Exchanges Required: 19 eyes (1.107%)

High Vault (Excessive lens–cornea distance): 9 eyes (47.3%)

Toric pIOL Rotation/Misalignment: 7 eyes (36.8%)

Other reasons: Inverted pIOL (2 eyes), Decentration/Tilt (1 eye)

Vault-Related Findings:

High vault led to raised intraocular pressure, anterior chamber shallowing, or risk of glaucoma.

Pre-exchange vault: $\sim 1387 \mu\text{m}$ \rightarrow Post-exchange: $\sim 796 \mu\text{m}$ (significant reduction)

Associated with improper sizing (WTW–pIOL size mismatch of $\sim 1.12 \text{ mm}$)

Rotation/Misalignment-Related Findings:

Common in cases with low vault ($< 150 \mu\text{m}$) or improper sizing.

In some cases, repositioning was attempted but failed due to persistent misalignment or rotation.

Vault pre/post exchange: $\sim 431 \rightarrow \sim 448 \mu\text{m}$ (not statistically significant)

Surgical Details:

All surgeries used ICL (V4) or IPCL (V2.0) models.

Exchange performed through a clear corneal incision.

Post-op care included antibiotics, steroids, and lubricants.

Outcomes:

No residual refractive error.

Best corrected visual acuity (BCVA) was maintained or improved.

No repeat surgeries required.

Final follow-up at 3.3 months showed good recovery and stability.

Conclusions:

Low pIOL exchange rate ($\sim 1.1\%$) with favorable outcomes.

High vault and toric pIOL misalignment were main indications for exchange.

Need for more accurate sizing methods (beyond white-to-white) like sulcus-to-sulcus and lens rise.

