

Comment on: Surgical Outcomes of Lens Removal with or without Intraocular Lens Implantation in Marfan Syndrome: A Retrospective Cohort Study [Letter]

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Dear editor

We read with interest the article by Bin Helayel et al, “Surgical Outcomes of Lens Removal with or Without Intraocular Lens Implantation in Marfan Syndrome: A Retrospective Cohort Study.”¹ This single-center series adds to the growing literature on surgical management of Marfan-related ectopia lentis,^{2–4} but several design and analytic limitations weaken the comparative inferences about different surgical techniques and IOL strategies.

First, the choice of procedure and IOL type in Marfan ectopia lentis is inherently driven by lens position, zonular loss, capsular integrity, age, and axial length.^{2–4} Lensectomy with anterior vitrectomy is usually selected for more advanced subluxation, whereas phacoemulsification with in-the-bag IOLs is reserved for milder, better-centered lenses, and scleral-fixated or aphakic approaches are typically used in the most complex eyes.^{1,2} Treating these clinically determined options as if they were exchangeable “treatment arms” and comparing final visual or refractive outcomes without adjustment for baseline severity means that the reported “no significant difference” is more compatible with confounding by indication and limited power than with genuine equivalence. A stratified or risk-adjusted analysis within clearly defined severity tiers (eg, mild vs advanced subluxation, preservable vs non-preserved capsule) would yield conclusions that are more clinically interpretable and more comparable to other series.^{2–4}

Second, 85 eyes from 55 patients were analyzed as independent observations, with t-tests, ANOVA, and χ^2 -tests applied at the eye level.¹ This ignores intra-patient correlation between fellow eyes and tends to underestimate standard errors, inflating statistical significance. Contemporary ophthalmic cohort studies increasingly use patient-level analyses, generalized estimating equations, or mixed-effects models when both eyes are included, or at minimum pre-specify inclusion of a single eye per subject.^{3,4} Re-analysis with clustering by patient would provide more reliable confidence intervals and might alter which associations remain statistically robust. In parallel, the almost entirely univariable statistical strategy—numerous single-factor comparisons in small subgroups without multivariable adjustment or correction for multiple testing—further increases the risk of both false-negative and false-positive findings.

Third, key safety outcomes are under-reported relative to the concerns raised in the introduction. Retinal detachment after lens removal in Marfan syndrome carries a substantial lifelong risk, particularly in pediatric patients, with events often occurring many years after surgery.⁵ Yet the incidence, laterality, and timing of retinal detachment in this cohort are not clearly detailed, despite extended follow-up.¹ Similarly, postoperative glaucoma is reported in 13.3% of patients without diagnostic criteria, time course, or analyses by surgical approach or IOL type, and no endothelial cell data are provided for anterior chamber IOLs, although endothelial safety is central when considering ACIOLs in young eyes.^{3,4} Time-to-event curves for retinal detachment and glaucoma, stratified by surgical strategy, together with endothelial outcomes for ACIOLs, would greatly strengthen conclusions about long-term risk.

In summary, Helayel et al provide valuable real-world experience in a challenging population, but substantial confounding by indication, lack of appropriate handling of paired-eye data, reliance on largely univariable analyses, and incomplete safety reporting limit the strength of their comparative claims. More conservative interpretation and re-analysis using patient-level or clustered models with fuller reporting of serious complications would make this dataset more informative for surgeons managing Marfan-related ectopia lentis.

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Disclosure

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