The Literature

BY EMILY WAISBREN, MD; DAVID C. RITTERBAND, MD; JOHN SEEDOR, MD; AND JAI G. PAREKH, MD, MBA

COMPLICATIONS AND VISUAL OUTCOMES AFTER GLUED FOLDABLE INTRAOCULAR LENS IMPLANTATION IN EYES WITH INADEQUATE CAPSULES
Kumar AK, Agarwal A, Packiyalakshmi S, et al

ABSTRACT SUMMARY
In 2008, Agarwal and colleagues developed a technique for fixating a posterior chamber IOL in eyes with insufficient or absent capsular support using fibrin glue-assisted scleral fixation. They called it the glued IOL technique. This study looks at complications and visual outcomes at an average of 16.7 months. Indications for a secondary IOL included intraoperative capsular loss, a subluxated lens, or secondary IOL placement for aphakia. Exclusion criteria included preoperative glaucoma, aniridia, macular scar, traumatic subluxation, combined surgeries, incomplete operative medical records, and postoperative follow-up of less than 6 months. The intraoperative and postoperative complication rates, reoperation rate, and visual outcomes were analyzed.

The study included 208 eyes with a mean follow-up period of 16.7 months ±10.2 (standard deviation [SD]). The intraoperative complications were hyphema (0.4%), haptic breakage (0.4%), and deformed haptics (0.9%). Early complications occurred in 29 eyes (13.9%) and included corneal edema (5.7%), epithelial defect (1.9%), and anterior chamber reaction (2.4%). Late complications occurred in 39 eyes (18.7%) and included optic capture (4.3%), IOL decentration (3.3%), haptic extrusion (1.9%), a subconjunctival haptic (1.4%), macular edema (1.9%), and pigment dispersion (1.9%). Reoperation was required in 16 eyes (7.7%). Indications for reoperation included IOL repositioning in seven eyes, haptic repositioning in three eyes, conjunctival suturing in two eyes, and pars plana vitrectomy in one eye.

Corrected distance visual acuity improved or remained unchanged in 84.6% of eyes. The postoperative corrected distance visual acuity was 20/40 or better and 20/60 or better in 38.9% and 48.5% of eyes, respectively.

IN VIVO ANALYSIS OF GLUED INTRAOCULAR LENS POSITION WITH ULTRASOUND BIOMICROSCOPY
Kumar DA, Agarwal A, Packiyalakshmi S, Agarwal A

ABSTRACT SUMMARY
The same group as for the previous research performed a prospective study using ultrasound biomicroscopy of glued transscleral-fixated posterior chamber IOLs in eyes with inadequate capsules. The investigators measured optic tilt relative to the iris plane, haptic location, iris-IOL contact, vitreous incarceration, and central anterior chamber depth. They correlated these measurements to clinical variables such as vision and refractive error.

The study enrolled 46 eyes with a mean follow-up period of 24.6 months ±14.3 (SD). Of the eyes, 17.4% showed optic tilt. The investigators found that 92.4% of the haptics were in the ciliary sulcus and 7.6% were in the pars plicata. There was no significant association between optic tilt and haptic location. The mean ocular residual astigmatism was 0.50 ±0.20 D, and there was no difference in the ocular residual astigmatism with and without tilt. There was no correlation between ocular residual astigmatism and IOL position or between tilt and postoperative vision or cylinder.

INTRASCLERAL FIBRIN GLUE INTRAOCULAR LENS FIXATION COMBINED WITH DESCemet-STRIpping AUTOMATED ENDothelial KERATOPLASTY OR PENETRATING KERATOPLASTY

ABSTRACT SUMMARY
In a retrospective analysis, Sinha et al evaluated the outcomes of intrascleral glued IOL fixation combined with penetrating keratoplasty (PKP) and Descemet-stripping automated endothelial keratoplasty (DSEK). Outcomes were assessed at 6 months and included visual acuity, anterior segment biomicroscopy, IOP, central...
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however, is promising.

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2. Kumar DA, Agarwal A, Pachydayalohi S, Agarwal A. In vivo analysis of glued intraocular lens position with
trimming automated endothelial keratoplasty or penetrating keratoplasty. J Cataract Refract Surg. 2012;38(7):1240-
1245.
6. Agarwal A, Kumar DA, Jacob S, et al. Fibrin glue-assisted suturesless posterior chamber intracocular lens implanta-

THE LITERATURE

DISCUSSION

When the posterior capsule ruptures or there is a
lack of zonular support, an IOL can be placed in the
anterior chamber within the ciliary sulcus. Iris or scler-
fixation is used to secure the lens. This approach is
generally thought to be superior to anterior chamber IOLs,
which carry the risk of complications such as corneal
endothelial cell loss, pseudophakic bullous keratopa-
thy, peripheral anterior synechiae, and glaucoma. All of
these mechanical complications relate to the anatomic
position of the lens.4

Although the anatomic position of transsclerally
sutured IOLs is preferable, they present their own chal-
enges, including longer surgical time, manipulation of
the ciliary body resulting in hemorrhage, suture-related
complications such as knot slippage, weakening and
erosion of the suture material, IOL tilt, and glaucoma.5
Kumar et al developed the fibrin glue-assisted scleral
fixation technique, which allows for IOL fixation with-
out the placement of sutures.6 The technique uses a
pair of partial-thickness scleral flaps made 180° apart
with underlying sclerotomies that allow externalization of the haptic
of a three-piece IOL. The haptic
tips are buried inside a small scleral
pocket, and the scleral flaps are
closed using fibrin glue beneath
the flap. This is a sutureless tech-
nique, and the scleral tunnels per-
mit long-term fixation of the haptic
and IOL.6

The three studies summarized herein show that
 glued IOLs are an excellent option, with good out-
comes and minimal serious complications. The tech-
nique is also strong enough to sustain the manipulation
required for more involved corneal procedures such as
DSAEK and PKP. Longer-term data are needed as well
as comparative, prospective studies. The technique,
however, is promising.

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