

Chapter 30

IOL Explantation with Iris-Enclavated Intraocular Lens Implantation

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Abstract In patients requiring IOL explantation/exchange in eyes lacking capsular support, ACIOL, scleral-fixated PCIOL, or iris-sutured PCIOL are all viable options. Although technically easier to implant an ACIOL, a larger (6 mm) corneal/scleral incision is required, and the surgeon may face challenges as to appropriate sizing (angle-to-angle/white-to-white dimensions vary between patients), leading to complications such as corneal endothelial decompensation, chronic iritis, and new/worsening glaucoma. Although technically easier to implant an ACIOL, a larger (6 mm) corneal/scleral incision is required, and the surgeon may face challenges as to appropriate sizing (angle-to-angle/white-to-white dimensions vary between patients), leading to complications such as corneal endothelial decompensation, chronic iritis, and new/worsening glaucoma. Iris-enclavated IOLs (such as the Artisan lens (Ophtec, Boca Raton, FL)) do not require iris suturing (which may be technically challenging) and alleviate the problem of sizing variables from patient to patient. The newer iris-enclavated IOLs are fixated to the mid-peripheral iris and centered over the pupil. In this position, mydriasis, iris vasculature, and the angle are not affected.

Keywords Dislocated IOL • IOL subluxation • IOL exchange • Pseudoexfoliation • Traumatic IOL dislocation • Secondary IOL implantation • Iris-enclavated IOL implantation • Peripheral iridectomy

Indications

Primary implantation in patients with poor capsulo-zonular support, IOL explantation due to uveitis-glaucoma-hyphema syndrome, dislocated IOL, optic opacification, or dissatisfaction with IOL.

Essential Steps

1. Topical anesthetic
2. Placement of speculum

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3. Paracentesis incisions
4. Viscoelastic injection into the AC
5. Partial thickness limbal groove
6. Clear corneal incision
7. Lens capture with micrograspers and prolapse into AC
8. Injection of Miochol
9. Extension of the clear corneal incision
10. Explanation of whole lens
11. Implantation of Artisan lens
12. Closure of the clear corneal incision
13. “Enclavation” of the iris with the lens haptics
14. Creation of a peripheral iridectomy
15. Removal of viscoelastic
16. Stromal hydration

Complications

- Traumatic injury to the iris
- Subsequent lens dislocation
- Endothelial damage
- Dropped lens
- Vitreous loss
- Zonular dehiscence
- Hyphema
- Corneal edema
- Pupillary block
- Uveitis
- Endophthalmitis
- Cystoid macular edema (CME)
- Dysphotopsias
- Suprachoroidal hemorrhage
- Retinal detachment

Template Operative Dictation

Preoperative diagnosis: *Dislocated Artisan lens (OD/OS).*

Procedure: Artisan lens explantation, secondary Artisan lens implantation, and anterior vitrectomy (*OD/OS*).

Postoperative diagnosis: *Same.*

Indication: This is a ____-year-old (*male/female*) who subsequently developed decreased vision following previous cataract surgery. The condition has worsened

over the past ____ (*months/years*). On workup, he/she was discovered to have a dislocated intraocular lens and poor capsulo-zonular support. After a detailed review of the risks, benefits, and alternatives, the patient was elected to undergo the procedure.

Description of the procedure: The patient was identified in the holding area, and the (*right/left*) eye was marked with a marking pen. The patient was brought into the OR on an eye stretcher in the supine position. 0.5 % tetracaine was instilled into the conjunctival fornices of the (*right/left*) eye. The (*right/left*) eye was prepped and draped in the usual sterile fashion and operating microscope centered over the (*right/left*) eye. The eyelid speculum was placed. A proper time-out was performed verifying correct patient, procedure, site, positioning, and special equipment prior to starting the case.

A diamond paracentesis blade was used to make two side port incisions, one superiorly and one inferiorly. The anterior chamber was then inflated with Viscoat and Provisc. The guarded diamond blade was then used to create a 6 mm by 300 μ m depth temporal groove at the limbus. A temporal clear corneal incision was made with a 2.2 mm diamond keratome. The dislocated intraocular lens was then secured with micrograspers and prolapsed into the anterior chamber with the assistance of the Kuglen and Sinsky hooks. Iris retractors were used as needed. Miochol-E was injected into the anterior chamber to successfully achieve intraoperative miosis. Using the keratome blade, the clear corneal incision was then extended laterally to the full extent of the groove. The intraocular lens was then explanted whole from the main corneal incision using micrograspers.

The Artisan lens was then placed into the anterior chamber using the curved tying forceps and centered using a Sinksey hook. A 10-0 nylon suture using the *triple cross-stitch method* was then placed into the main corneal incision to create a watertight wound. Iris micrograspers were then used to enlave the iris into each of the claw haptics while using micro tying forceps to secure the optic of the Artisan lens. The vitreous cutter was advanced into the side port incision and used to create a peripheral iridectomy.

If anterior vitrectomy was performed: *The vitreous cutter was placed into the superior/inferior paracentesis incision while the irrigation cannula was placed into the inferior/superior incision. An anterior vitrectomy was performed until all vitreous was cleared from the anterior chamber and wounds.*

Viscoelastic was removed from the eye using coaxial irrigation and aspiration or a BSS syringe on a 27 gauge cannula. Stromal hydration of the paracentesis incisions was performed, the triple cross-stitch was locked and the knot was buried, and the incisions were noted to be watertight (*and, if necessary, 10-0 nylon simple interrupted sutures were placed*). The Artisan lens was found to be centered in position. The pupil was round and the anterior chamber was formed. Eyelid speculum and drape were removed. Maxitrol eye ointment was placed in the inferior fornix and a shield was placed over the eye. The patient was transferred to the postanesthesia care unit in stable condition.