



◀ Figure. Slit-lamp image showing a dislocated IOL-capsular bag complex in the anterior chamber of the right eye. Note the cortical remnant superior to the IOL.

LATE SPONTANEOUS DISLOCATION OF THE IOL-CAPSULAR BAG COMPLEX IN A PATIENT WITH RETINITIS PIGMENTOSA



A comprehensive review of the diagnosis, surgical management, and outcomes of late spontaneous dislocation of the IOL-capsular bag complex in a 72-year-old patient with retinitis pigmentosa.

BY RAMYA SEETAM RAJU, MS, FICO

A 72-year-old man presented 4 to 5 days after experiencing a sudden decrease in the vision in his right eye. There was no history of trauma or preceding illness. The patient had been receiving medical treatment for hypertension for 20 years. His ocular history was significant for retinitis pigmentosa (RP) in both eyes. He had undergone cataract surgery with IOL implantation in both eyes 10 years ago. Follow-up visits for 2 to 3 years postoperatively indicated reasonably good vision in both eyes.

EXAMINATION

On examination, the patient's visual acuity was hand motion OD and

20/200 OS. His IOP was 16 mm Hg OD and 14 mm Hg OS on applanation tonometry. A slit-lamp examination of the right eye showed an anteriorly dislocated IOL-capsular bag complex in the anterior chamber (Figure). In the left eye, the IOL was centered in the bag. A dilated examination found RP, optic discs with a waxy pallor, and diffuse mottling of the macular regions. Both pupils reacted sluggishly to light. B-scan ultrasonography of the right eye revealed an intact retina-choroid-sclera complex.

SURGICAL INTERVENTION

Surgical removal of the IOL-capsular bag complex and an IOL exchange were planned for the right eye. A

corneoscleral incision was performed superiorly, and the IOL-capsular bag complex was removed. No vitreous disturbance was noted. Retropupillary placement of an iris claw lens was performed. A superior surgical peripheral iridectomy was performed to prevent secondary glaucoma. Routine topical antibiotics and steroids were prescribed for the postoperative period.

POSTOPERATIVE OUTCOME



On postoperative day 1, the patient's visual acuity was counting fingers at 3 m, and the iris claw IOL was well centered. Six weeks later, his BCVA was 20/200 OD with a manifest refraction of +1.00 -2.00 x 90°. The cornea was clear, and the anterior chamber was quiet.

KEY LEARNING POINTS


▶ **No. 1: Zonular Weakness in Retinitis Pigmentosa**

-  Significance: Common in cataract patients
-  Preoperative tip: Look for phacodonesis.





▶ **No. 2: Surgical Considerations**

-  Discuss risks: Inform patients with retinitis pigmentosa about the risk of late dislocation and potential need for additional surgery.
-  Anticipate weakness: Be prepared during surgery.





▶ **No.3: Surgical Modifications**

-  Technical adjustments:
 - Gentle tissue handling
 - Larger capsulorhexis
 - Thorough hydrodissection
 - Bimanual nucleus rotation
 - Use of capsular tension rings
 - Low-energy phacoemulsification
 - Chop technique preferred
 - Phacoemulsification in epinucleus mode
 - Three-piece lens for stability

▶ **No. 4: Postoperative Care**

-  Follow-up visits: Monitor patient for phimosis, IOL dislocation, and macular edema.
-  Protection: Advise use of protective glasses.
-  Nd:YAG laser intervention: Use minimal energy.
-  Immediate intervention: Act quickly to manage complications.

▶ **No. 5: Handling Complete Posterior Dislocation**

-  Pars plana approach: Required for complete posterior dislocation.
-  Procedure choice: Based on surgeon's preferences, patient condition, affordability.
-  Scleral fixation: Demanding but better results.
-  Tailored treatment: Customize approach based on case factors.

DISCUSSION

Late Dislocation: Definition and Risk Factors

Late dislocation of an IOL occurs 3 months or more after surgery.¹ Predisposing conditions include pseudoexfoliation, previous vitreoretinal surgery, myopia/increased axial length, RP, trauma, connective tissue disorders, and eye rubbing.^{2,3} Factors causing late dislocations in patients with RP include capsular phimosis and zonular weakness.^{4,5}

This patient had spontaneous dislocation and underlying RP. Zonular weakness appeared to be the pathogenetic mechanism because significant capsular phimosis was not noted.

Surgical Approach

An IOL exchange with retropupillary placement of an iris claw lens was performed in a single step. A two-stage process, where the IOL–capsular bag complex is removed first and IOL fixation is performed second, may also be considered. Given the patient's age and his unwillingness to undergo multiple time-consuming procedures, a single-step procedure with an iris claw IOL was chosen.

Postoperative Observation

Close observation for corneal decompensation and cystoid macular edema is vital. In this case, there were

no signs of corneal decompensation, and no cystoid macular edema was observed during 3 months of follow-up. The other eye had a stable IOL in the bag without capsular phimosis. If phimosis had been present, a laser capsulotomy of the anterior capsule using low energy would have been appropriate.

IOL FIXATION TECHNIQUES

In the past few decades, various procedures have been developed for the fixation of an IOL in an aphakic eye without capsular support. These include angle-supported IOLs and iris- and scleral-fixated IOLs.⁶

Angle-Supported IOLs

Angle-supported IOLs are associated with corneal decompensation and secondary glaucoma.⁷

Iris Fixation

Iris fixation involves suturing the IOL to the iris. The technique is useful for dislocated IOLs previously located in the bag or sulcus, eyes that have a filtering bleb, and situations in which it is important to preserve conjunctival tissue for future procedures.⁸ An iris claw IOL has two claws that facilitate enclavation onto the iris. This inexpensive technique has a short learning curve. It takes less time than and has complication rates similar to those of scleral fixation.⁹ The placement of an iris claw lens, however, may result in increased astigmatism and pupil ovalization.¹⁰

Scleral Fixation

Scleral fixation results in better outcomes and less inflammation compared to iris fixation. The technique is useful in eyes with low endothelial counts,¹¹ but it is time-consuming and requires considerable training.

There has been a shift from sutured to sutureless scleral fixation procedures.¹² The glued IOL technique described by Agarwal et al¹³ provides

good flap closure and IOL centration and stability without suture-related complications. Yamane et al¹⁴ described a sutureless scleral fixation technique and later fine-tuned it by cauterizing the haptics after externalization, creating flanges. A new foldable scleral IOL developed by Carlevalle et al¹⁵ has scleral harpoons that enable sutureless anchorage to the sclera. Using the Canabrava technique, an IOL can be fixated to the sclera with segments of polypropylene (Prolene, Ethicon) with two flanges created in the eyelets of the IOL and two in the sutures, which are inserted into the scleral tunnel to fixate the IOL.¹⁶ ■

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RAMYA SEETAM RAJU, MS, FICO

- Consultant, Cataract, Cornea and Refractive Surgery, Dr. Agarwal's Eye Hospital, Visakhapatnam, India
- ramyaseetamraju@gmail.com
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