

Cleaning the Posterior Capsule

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When I attend conferences, I find that a common topic of discussion among anterior segment surgeons is the cleaning of the anterior and posterior capsules. There appears to be a debate as to how best to accomplish this, how aggressive to be, and whether performing this task is required and beneficial to patients' outcomes. For the first installment in a two-part series, I asked several experts to share their thoughts on cleaning the posterior capsule. The next column will explore cleaning the anterior capsular ruminant.

—William J. Fishkind, MD, section editor

PRISCILLA P. ARNOLD, MD

After decades of dramatic changes, one constant aspect of effective phacoemulsification is the surgeon's decision to clean or polish the posterior capsule. Posterior capsular opacification is the most common sight-limiting event occurring from this remarkably effective surgery.

Why is it important to clean the posterior capsule? The answer is that lens epithelial cells will proliferate and may undergo fibroblastic transformation; both events lead to capsular opacity. Additionally, capsular contraction may occur, distorting the IOL's position or potentiating progressive zonular dehiscence in conditions such as pseudoexfoliation. It is particularly important to accomplish full polishing in the eyes of younger patients, individuals with a history of inflammatory disease, and those with known pseudoexfoliation.

I have personally used a number of different techniques for posterior capsular polishing. However, in my hands, the most consistently effective approach is automated I/A directly on the capsule's surface with a silicone tip. Many other options can work well. Regardless of the technique, the end result should be the removal of all posterior capsular cellular material. The approach must, of course, be modified in the case of a posterior polar cataract and known zonular laxity. In these situations, very controlled manual polishing should be utilized.

Other aspects deserve comment. Posterior square-

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- Priscilla P. Arnold, MD

edged IOL designs have done much to retard the progression of visually significant capsular opacification. Surgeons continue to gain insight with experience of the bioactivity of various IOL materials. The future will hold advances as investigation continues into pharmacological methods to achieve and maintain capsular clarity and new laser technology in development.

PAUL H. ERNEST, MD

I spend a considerable amount of time polishing the posterior capsule. The aspirating and irrigating handpieces that I use by Geuder AG (Heidelberg, Germany) have a diamond surface that is used to remove posterior capsular plaque and other residual cortical debris. I polish the posterior capsule in this manner for 100% of my monofocal and multifocal IOL patients. It is especially important when implanting multifocal IOLs,

because any debris or opacification interferes with the patient's quality of vision more than with a monofocal IOL.

ROBERT LEHMANN, MD

I polish the posterior capsule because it is so easily accomplished with the curved silicone I/A tip. I clean enough that visiting surgeons who use metal tips cringe. With the advent of Nd:YAG lasers, the polishing factor has gone way down. I do not think it is very important. Every surgeon has seen patients with a fibrous posterior capsule progress from a preoperative 20/400 to 20/20 on postoperative day 1, and they still have fibrosis on the posterior capsule.

Further, I do not think cleaning out the peripheral bag or the undersurface of the capsulorhexis makes much difference. Posterior capsules will still opacify, and IOLs are still exchangeable in most cases, if necessary.

“Posterior capsules will still opacify, and IOLs are still exchangeable in most cases.”

- Robert Lehmann, MD

ROBERT I. SCHNIPPER, MD

I polish every posterior capsule with a cannula that has a silicone sleeve around it, unless there is a tear. However, when I operate on younger patients and when I implant premium IOLs, I do something extra. I use the Shepherd Capsule Polishing Curette (Katena Eye Instruments, Inc., Denville, NJ) to scrub underneath the anterior capsular rim and to the equator of the capsular bag. I apply viscoelastic and gently work the polishers in a scoop-like motion. It is surprising how much “stuff” I get out. I then often aspirate and refill with viscoelastic for the IOL's insertion. It is my belief that this strategy will help prevent secondary cataract formation on a long-term basis.

DAVID E. SILVERSTONE, MD

I polish the capsule for two reasons. First, I believe it is important to ensure that the capsule is as clear as possible postoperatively. Second, I believe that the more residual cortical and posterior subcapsular material is left, the greater the ultimate necessity of performing a posterior capsulotomy is.

I prefer the Terry Squeegee (Alcon Laboratories, Inc., Fort Worth, TX) because it is soft and tends not to have burrs, but using a nondisposable capsule-polishing can-

nula that is inspected for the absence of burrs is just as effective. The cannula is attached to the syringe containing the viscoelastic that I am going to use for the IOL's placement. This arrangement avoids an extra entry into the eye, and the viscoelastic is useful for achieving safe capsular polishing. I usually first inject a small amount of viscoelastic on the surface of the posterior capsule to put a little tension on the capsule before attempting to polish it. I then inject more as needed to maintain a taut capsule. This tension makes polishing the capsule easier and helps to prevent trauma, which can lead to a zonular rupture or capsular tear. ■

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