WHAT IS THE TRUE RISK OF RETINAL TEAR OR DETACHMENT WITH MODERN LENS SURGERY?

It's not as great as you might think, but here are some pointers for avoiding it.

BY STEVE CHARLES, MD, FACS, FICS

What is the true risk of a retinal tear or detachment associated with modern refractive lens exchange (RLE) surgery? An answer firmly backed by scientific evidence would be hard to come by. The reason is that level 1 evidence would be very challenging to acquire because of the many clinical and surgical variables as well as the timeline issue.[1-7]

The timeline is a key problem; if a retinal detachment occurs years after RLE, was the complication related to this surgical procedure? If, on the other hand, an RLE is performed on Monday and there is a retinal detachment on Tuesday, many would conclude causation—but it could be a random temporal association.

Similarly axial length is often used as a proxy for retinal detachment risk after RLE, but axial length is not the cause. Clinicians often confuse population statistics and individual risk; if a patient has -10.00 D of myopia, most ophthalmologists would agree that he or she has a significantly increased risk of retinal detachment after RLE. If, however, a careful peripheral retinal examination with indirect ophthalmoscopy of this theoretical patient detected no

lattice degeneration or peripheral retinal pathology, his or her actual risk is minimal—certainly less than population statistics would predict for a patient with -10.00 D of myopia.

Although an evidence-based answer is difficult, my experience suggests that the risk of a retinal tear or detachment with modern lens surgery is lower than most cataract surgeons might think. Here is my advice for minimizing the risk in your practice.

CAREFUL SCREENING

Evidence of lattice and retinal holes on a dilated fundus examination is a far more important predictor of retinal detachment than axial length. Careful peripheral screening with indirect ophthalmoscopy and a dilated pupil is mandatory before RLE. Scleral depression should be used if any suspicious areas are seen.

Wide-angle imaging systems can provide additional information, but they cannot replace indirect ophthalmoscopy. These systems rarely provide high-quality superior or inferior images because the patient's eyelids and lashes obscure the view. Wide-angle imaging systems may be more useful in photophobic patients.

The Pan-American Collaborative Retina Study (PACORES) Group screened a large number of patients before LASIK and found substantial retinal pathology requiring laser retinopexy, which almost certainly reduces retinal detachment rates compared with the natural history in such patients.

If any retinal breaks are noted during the preoperative evaluation, they should be treated with laser. The standard academic view is that only symptomatic flap tears require retinopexy. Standard teaching is that round holes have no traction, but, using widefield OCT, Charteris et al[8] recently showed that 98% of round holes do indeed have traction. Calling round holes *atrophic* is meaningless.

The consensus view is that holes within lattice degeneration do not require laser retinopexy. Pigmentation indicates chronicity, not adherence.

CONCLUSION

The risk of a retinal tear or detachment after RLE is likely low; however, anterior segment surgeons can take steps to reduce that risk and ensure a safe and effective surgery for their patients (see *Do's and Don'ts in Surgery*). ■

DO'S AND DON'TS IN SURGERY

Do avoid a retrobulbar block for RLE surgery. This is important because of the risk of ocular perforation, especially in myopic eyes with high axial lengths.

Do make every effort to prevent anterior chamber shallowing during RLE. Shallowing causes the lens capsule and vitreous to move anteriorly, potentially creating vitreoretinal traction.

Do not, under any circumstances, use a large-bore needle to aspirate illusory liquid vitreous. Acute vitreoretinal traction can occur with this technique.

Do carefully manage the vitreous if a capsular defect occurs during RLE. Avoid using cellulose sponges or sweeping the vitreous. Be sure to apply triamcinolone—a particulate marking agent—to the vitreous to enhance visualization.

For performing a vitrectomy, do use the highest cutting rates and very low vacuum. The vitreous cutter should be used through the pars plana or a second sideport incision, with infusion also through a sideport. Avoid pulling the cutter back while vacuum is applied.

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