Anterior Versus Posterior Phakic IOLs

What is the best lens?

BY JOSE L. GÜELL, MD, AND ROBERTO ZALDIVAR, MD

Phakic IOLs have recently become a popular option for refractive correction. Some surgeons use them in patients who are poor candidates for laser vision correction, and other surgeons introduce them to patients as a premium solution to refractive correction. The great debate of LASIK versus phakic IOLs will continue to surface. However, this article focuses on another debate surrounding the use of phakic IOLs: What is the best choice, anterior or posterior chamber phakic lenses?

Implanted in front of the crystalline lens, phakic IOLs may either be fixated in the anterior chamber angle or attached to the front of the iris (ie, anterior chamber) or sit between the back surface of the iris and the front surface of the crystalline lens (ie, posterior chamber). Each technique has its own pros and cons. In this article, two surgeons present five reasons to defend his lens of choice.

ANTERIOR CHAMBER PHAKIC IOLs
By Jose L. Güell, MD

The following are five reasons to defend the use of anterior chamber phakic lenses. I would like to clarify that my defense focuses on the Artisan-Artiflex group (Ophtec BV; Groningen, Netherlands; distributed in the United States as Verisyse-Veriflex, Abbott Medical Optics Inc., Santa Ana, CA) and under some circumstances on the AcrySof Cachet (Alcon Laboratories, Inc., Fort Worth, TX).

Reason No. 1: Positive long-term safety data (5-10 years) is available and published for most of these lenses and models. Some of these studies are company driven; however, most originate from the retrospective or prospective experience of several investigators.

Reason No. 2: The main concern with anterior chamber phakic IOLs (almost the only one) is chronic endothelial cell loss. Once the loss is considered unacceptable (ie, higher than physiological), the lens may be explanted without the need for any additional treatment. This is an important difference from posterior chamber phakic IOLs, for which cataract and pigmentary glaucoma are the main concerns. With both of these conditions, additional treatment is necessary.

Reason No. 3: Especially with the iris–fixation-style phakic IOLs, we can perfectly center over the pupil (decentered pupils are common in ammetropic eyes) and fixate on the proper axis (for astigmatism correction), which provides obvious optical advantages.

Reason No. 4: In most cases, the higher the myopia, the deeper the anterior chamber, with the posterior chamber’s remaining a constant size. For this reason—although with a smaller optical zone—we have a disproportionate number of anterior chamber phakic IOLs for the higher conditions versus posterior chamber phakic IOLs.

Reason No. 5: Last but not least, I have had a positive experience with anterior chamber phakic IOLs for the past 15 years. Therefore, I have a lot of confidence in these lenses.

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CONTRAINDICATIONS
NEVANAC® ophthalmic suspension is contraindicated in patients with previously demonstrated hypersensitivity to any of the ingredients in the formulation or to other NSAIDs.

WARNINGS
There is the potential for cross-sensitivity to acetylsalicylic acid, phenylbutazone derivatives, and other nonsteroidal anti-inflammatory agents. Therefore, caution should be used when treating individuals who have previously exhibited sensitivities to these drugs.

With some nonsteroidal anti-inflammatory drugs including NEVANAC®, there exists the potential for increased bleeding time due to interference with thrombocyte aggregation. There have been reports that orally applied nonsteroidal anti-inflammatory drugs may cause increased bleeding of ocular tissues (including hyphemas) in conjunction with ocular surgery.

PRECAUTIONS
General: Topical nonsteroidal anti-inflammatory drugs (NSAIDs) including NEVANAC®, may slow or delay healing. Topical corticosteroids are also known to slow or delay healing. Concurrent use of topical NSAIDs and steroids may increase the potential for healing problems.

Use of topical NSAIDs may result in keratitis. In some susceptible patients, continued use of topical NSAIDs may result in epithelial breakdown, corneal thinning, corneal erosion, corneal abrasion or corneal perforation. These events may be sight threatening. Patients with evidence of corneal epithelial breakdown should immediately discontinue use of topical NSAIDs including NEVANAC® and should be closely monitored for corneal health.

Postmarketing experience with topical NSAIDs suggests that patients with complicated cataract surgeries, corneal denervation, corneal epithelial defects, diabetes mellitus, ocular surface disease (e.g., dry eye syndrome), rheumatoid arthritis, or repeat surgeries within a short period of time may be at increased risk for corneal adverse events which may be sight threatening. Topical NSAIDs should be used with caution in these patients.

Information for Patients: NEVANAC® ophthalmic suspension should be used with caution in patients with known bleeding tendencies or who are receiving other medications which may prolong bleeding time.

ADVERSE REACTIONS
Topical nonsteroidal anti-inflammatory drugs (NSAIDs) including NEVANAC®, may cause or aggravate inflammation, irritation, burning, foreign body sensation, and bloodshot eyes.

The safety and effectiveness of NEVANAC® in pediatric patients below the age of 10 years have not been established.

INDICATIONS AND USAGE
NEVANAC® ophthalmic suspension is indicated for the treatment of pain and inflammation associated with cataract surgery.

RECOMMENDATIONS
NEVANAC® ophthalmic suspension should be applied at the following times post surgery:

Reason No. 1: The surgical technique for implanting a posterior chamber phakic IOL allows an incision of 3 mm or slightly less. Such incision sizes induce only a small amount of corneal astigmatism. Once familiar with the technique, implantation is easy in experienced hands.

Reason No. 2: After 20 years of experience with different types of phakic IOLs, I believe that posterior chamber phakic IOLs interact with the endothelium better than anterior chamber phakic IOLs.

Reason No. 3: Available posterior chamber phakic IOLs are made of excellent material, thus allowing better intraocular tolerance and producing fewer cases of photic phenomena.

Reason No. 4: Because of its placement behind the iris, complications and visual side effects such as halos and glare are minimal.

Reason No. 5: The posterior chamber is the natural place for an IOL inside the eye. This position drastically reduces the amount of light reflection on the surface and any complication this may cause. It also helps to avoid the mirror effect of potential iris deformities, especially during the procedure.

“Because of [the IOL’s] placement behind the iris, complications and visual side effects such as halos and glare are minimal.”

REFERENCES