

The Posterior Cornea

BY P. DEE G. STEPHENSON, MD

Koch et al demonstrated that residual astigmatism is directly attributable to posterior corneal astigmatism.¹ They also found that postoperative over- and undercorrections are associated with either with- or against-the-rule posterior corneal astigmatism, respectively. A measurement of the anterior cornea is somewhat helpful but cannot by itself predict astigmatic correction. Without taking the posterior cornea into consideration, surgeons will miss some patients who need astigmatic correction, leaving them with unanticipated residual cylinder.

The ORA System with VerifEye (WaveTec Vision) has multiple clinical applications such as refining IOL power calculations in aphakic eyes, and it is outstanding for taking measurements in postrefractive eyes. For my practice, ORA has been invaluable for managing astigmatic patients, especially my toric IOL cases. ORA accounts for the posterior cornea, determines the magnitude and axis of astigmatism as well as IOL power calculations, thereby predicting which patients are best suited for a toric IOL or limbal relaxing incisions. Since I began using ORA with the Trulign Toric IOL (Bausch + Lomb), 91% of my cases have been within 0.25 D of the intended correction, and 95% have been within 0.50 D.

Had I only used the Trulign calculator, my results would have been much less impressive (39% within 0.25 D and 73% within 0.50 D).

While many other technologies may be used intraoperatively, ORA is the only device that can be used intraocularly and account for the posterior cornea. Without it, postoperative refractive surprises occur. As a refractive cataract surgeon, I am always evaluating how to improve outcomes. In my experience, the ORA System with VerifEye is the only clinical way to account for the posterior cornea and to achieve consistently better refractive outcomes.

The questions I pose are these:

- How do you account for the contribution of the posterior cornea in toric IOL cases?
- How do you treat unanticipated residual astigmatism in cases in which the preoperative measurements indicated that astigmatic treatment would not be needed? ■

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1. Koch DD, Ali SF, Weikert MP, et al. Contribution of posterior corneal astigmatism to total corneal astigmatism. *J Cataract Refract Surg.* 2012;38(12):2080-2087.

Weigh in on this topic now!



Direct link: <https://www.surveymonkey.com/s/CRST20>

1. How do you account for the contribution of the posterior cornea in toric IOL cases?
 - A nomogram
 - The ORA System
 - A nomogram and the ORA System
2. How do you treat unanticipated residual astigmatism in cases in which the preoperative measurements indicated astigmatic treatment would not be needed?
 - Limbal relaxing incisions
 - Arcuate incisions with the femtosecond laser
 - PRK or LASIK

Online Survey Results April 2014

Which do you find to be more important?

Preoperative data collection	100%
How the laser performs an ablation	0%

Which aspect of LASIK do your patients most frequently ask about?

Preoperative screening information	0%
The laser procedure itself	100%