



What to do with a
misaligned toric IOL.

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Amico Yasna Pars

Ophthalmology Newsletter

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It Must Be Spring

Hush, Can you hear it?
The rustling in the grass,
Bringing you the welcome news
Winter's day is past.
Soft, Can you feel it?
The warm caressing breeze,
Telling you the sticky buds
Are bursting on the trees.
Look, Can you see them?
The primrose in the lane,
Now you must believe it -
Spring is here again



Dear valued partners

The beautiful spring comes again and gives us the honor to once again cherish the privilege of providing you with the best products in the field of ophthalmology. All of us had our fair share of good and bad in the past year but as the spring comes and the nature resurrects, it reminds us that we should always move forward.

Amico Yasna Pars will try doing its best in the following year as always and wishes you a Happy and Prosperous year.

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Discussion



WHAT PATIENTS AND SURGEONS Appreciate Most

By Mark H. Blecher, MD

The approval of the TECNIS Symfony[®] Toric IOL has opened up an entirely new segment for ophthalmology. The ability to address both presbyopia and astigmatism in one surgery is a significant advance that both patients and surgeons enjoy for a number of reasons.

LESS CONFUSING FOR PATIENTS

Monovision toric lenses have been moderately popular



WE CAN DO THAT FOR YOU

The ability to address both presbyopia and astigmatism in one surgery is a significant advance. The TECNIS Symfony[®] Toric is the first presbyopia-correcting lens available in the United States for the 33% of the population who have significant levels of astigmatism. Indeed, the approval of the TECNIS Symfony[®] Toric IOL has opened up an entirely new segment for ophthalmology.

and patients definitely appreciate it when we can correct their astigmatism. But for many patients, this just isn't enough. The limited visual function they provide can be confusing to patients. And for surgeons, it's difficult to explain that we plan to get rid of the astigmatism with a toric lens, yet the patient will still need to wear glasses.

With the TECNIS Symfony[®] Toric IOL, the premium lens conversation is much easier. We are correcting

vision in a very noticeable way. The lens uses TECNIS Symfony[®] IOL extended depth of focus technology, providing a wide range of vision. In addition, it has the TECNIS[®] Toric IOL astigmatism correction we've used for years. Now we can offer excellent presbyopia mitigation to patients with astigmatism who we couldn't offer it to before. For me, being able to say

"we can do that for you," makes all the difference. Recommending the TECNIS Symfony[®] Toric IOL has become a no brainer in cases where it is indicated.

PRESBYOPIA-CORRECTING IOL THAT'S NOT A MULTIFOCAL

For surgeons who have shied away from presbyopia-correcting technology but believe in correcting astigmatism with toric IOL technology, the TECNIS Symfony[®] Toric IOL may be an excellent new entry point. As with all premium lenses, and especially with presbyopia correcting procedures, patient selection and education is important. But the TECNIS Symfony[®] IOL is a forgiving lens and brings extended depth of focus with tolerance to astigmatism and decentration. Patients achieve *quality* of vision benefits across the entire range with low glare and halo.

The TECNIS Symfony[®] IOL echelettes elongate the focal range rather than splitting the light and creating a second focal point. This helps provide intermediate and near vision with low incidence of glare and halo and without compromising distance vision.¹ The TECNIS Symfony[®] IOL also corrects for chromatic dispersion, which improves image contrast, allowing you to further increase visual quality.

TRUSTED TORIC PLATFORM

The TECNIS Symfony[®] Toric IOL is implanted in the same way as the TECNIS[®] Toric IOL, making adoption and integration simple. In my practice, I implant a lot of toric IOLs, but now I have converted almost all of my toric patients to the TECNIS[®] Toric IOL.

You can use the TECNIS[®] Toric calculator to select the lens and implantation axis. The A constant for the Symfony[®] Toric IOL is the same as that of the TECNIS[®] Toric IOL. Also, the operative procedure is identical to that of the TECNIS[®] Toric IOL.

Toric IOLs provide more stable and predictable refraction than manual incision surgery and can reduce dependence on spectacles and contact lenses over a patient's lifetime.^{3,4} Coupling these benefits with presbyopia mitigation is truly a game changer.

Mark Blecher is the Co-Director of the Cataract Department at the Wills Eye Hospital, Philadelphia, PA.

1. TECNIS[®] Symfony DFU

2. TECNIS[®] Symfony DFU

3. Mingo-Botin D, et al. Comparison of toric intraocular lenses and peripheral corneal relaxing incisions to treat astigmatism during cataract surgery. J Cataract Refract Surg. 2010;36:1700-8.

4. Hirschschall N, et al. Correction of moderate corneal astigmatism during cataract surgery: Toric intraocular lens versus peripheral corneal relaxing incisions. J Cataract Refract Surg. 2014;40:354-61.

OFF AXIS

What to do with a misaligned toric IOL.

BY LISA BROTHERS ARBISSER, MD; DANIEL H. CHANG, MD;
STEVEN DEWEY, MD; KEVIN M. MILLER, MD;
AND ROBERT J. WEINSTOCK, MD

LISA BROTHERS ARBISSER, MD



The story begins with appropriate pre-operative informed consent. There is no significant inherent risk to the choice of a toric implant other than minor added manipulation during placement. I do not hesitate to recommend these IOLs, even to monocular patients or for high-risk eyes, but I am certain to inform patients that astigmatism management is an inexact science, even with the most modern equipment and most experienced surgeon. I tell them that, rarely, more than one surgery is required to achieve the aim.

AVOIDING PROBLEMS

Patients must discontinue wearing their contact lenses until preoperative measurements are stable. The health of the ocular surface must be optimized, and irregular astigmatism should be weeded out. It is important to diagnose and treat anterior membrane dystrophy, if present, with superficial keratectomy. The use of modern nomograms accounting for posterior corneal curvature is key.

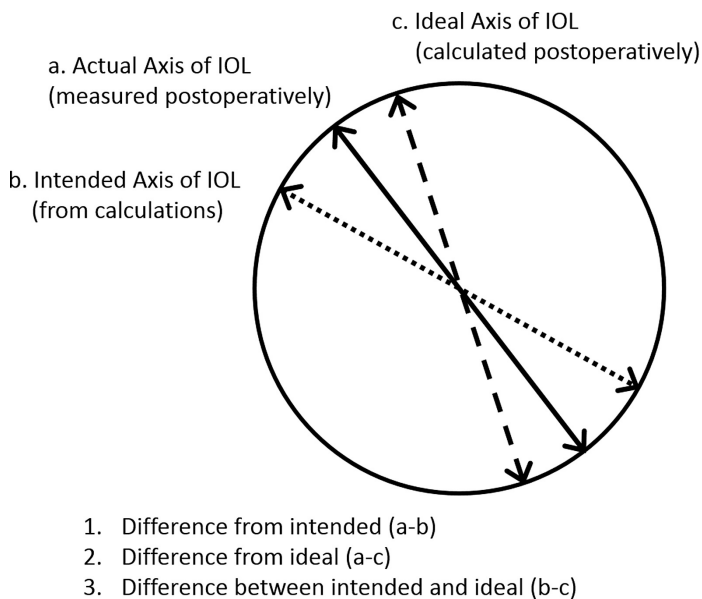
In the OR, besides the usual time out to ensure that the correct lens has been selected and the topography maps are hanging within view, I think it is extremely helpful to have an intraoperative keratoscopic light reflex to confirm the steep axis. This step can be as simple as the mire projected by the circular end of a sterile safety pin, as time-efficient and cost-effective as my Mastel light ring, or as quantitative as aberrometry to avoid transcription errors and to strive for uniform perfection.

HANDLING MISALIGNMENT

Unexpected, unavoidable outcomes herald detective work. Were the measurements accurate? Was the correct lens placed? Is the lens aligned on the intended meridian? Assuming that these sources of error are ruled out, the online resource astigmatismfix.com (thanks to John Berdahl, MD, and David Hardten, MD) will provide the answer on how to rotate or, so rarely, exchange the lens.

As wonderful as this resource is, however, a more modern approach is the Barrett Rx formula (https://www.apacrs.org/barrett_rx105). Surprisingly, people often see better uncorrected than the refraction would imply, so the first step is to be sure the patient is sufficiently dissatisfied with the outcome to accept the small but real risk of repeat surgical intervention.

Especially if a lens has rotated from the ideal position where it is thought to have been placed, I recommend waiting a couple of weeks to allow the bag to shrink but not scar around the implant, making the final position more likely stable. Under topical anesthesia, I would mark the final axis and confirm it with intraoperative keratocopy. Next, using only paracentesis incisions, I would instill a



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cohesive ophthalmic viscosurgical device to expand the bag. A two-handed technique can free and rotate the lens to the ideal axis. Keratometry will provide both a corneal and lenticular mire, the ovals of which should appear 90° opposed. The procedure concludes with manual irrigation and removal of the viscoelastic. I favor an intracameral injection of moxifloxacin (off label) as well.

Despite talk in favor of inserting a capsular tension ring in cases of a spontaneously rotated toric IOL, I have found this strategy to be unreliable. If a lens rotates more than once, I would forward capture it while leaving the haptics in the bag (see *Watch It Now*). There is a very small risk of iris chafing postoperatively with this maneuver. An alternative

would be to perform a hyaloid-sparing posterior capsulotomy and to capture the optic into Berger's space. Capture will ensure stability.

Lisa Brothers Arbisser, MD

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DANIEL H. CHANG, MD



Since a misaligned toric IOL can result from preoperative (ie, inaccurate measurements), intraoperative (ie, poor positioning), or postoperative (ie, rotation) mechanisms, I take steps to prevent each of these potential causes. Preoperatively, I measure the axis of astigmatism with both a biometer (at least twice) and a topographer. Intraoperatively,

I manually register my axis of correction using preoperative iris imaging to ensure a proper transfer of information. During surgery, I create a triplanar wound, center and size my capsulorhexis for complete IOL overlap, remove viscoelastic from behind the lens, rotate and align the IOL, and seal the wound meticulously. Although not all misalignment is caused by rotation, wound leakage, hypotony, and subsequent globe compression (from applying eye drops or rubbing the eye) can transmit an external force to the IOL, thus inducing rotation.

FIRST STEP

Whenever dealing with decreased UCVA postoperatively, I first determine whether the BCVA is reduced. If so, I determine what the limiting pathology might be—whether it is ocular surface/corneal, IOL/capsular, macular, or other pathology—and I treat it accordingly. If the BCVA is good, the problem is purely refractive, in which case I determine if the patient is symptomatic. When it comes to correcting refractive error, the patient's satisfaction is my primary endpoint. If he or she is happy, then I am happy, and we are done. If the patient is unhappy, then I consider an enhancement.

HANDLING MISALIGNMENT

If the limited UCVA is indeed because of a misaligned toric IOL, the BCVA should be good, and the refractive spherical

equivalent should be zero. If the spherical equivalent is not zero, then there must also be an IOL power issue. In that case, I will consider laser vision correction or, rarely, an IOL exchange or a piggyback IOL.

If the problem is purely a misaligned toric IOL, I first determine whether rotating the lens could correct the refractive error. The easiest way to make this determination is through the website astigmatismfix.com (Figure). If the output from this website suggests that I can reduce the clinical astigmatism close to zero through rotation/repositioning of the IOL, then that will be my preferred approach (barring significant previous intraoperative difficulties such as a floppy iris). If the calculations instead suggest that there will be significant refractive error regardless of how I rotate the IOL (ie, the

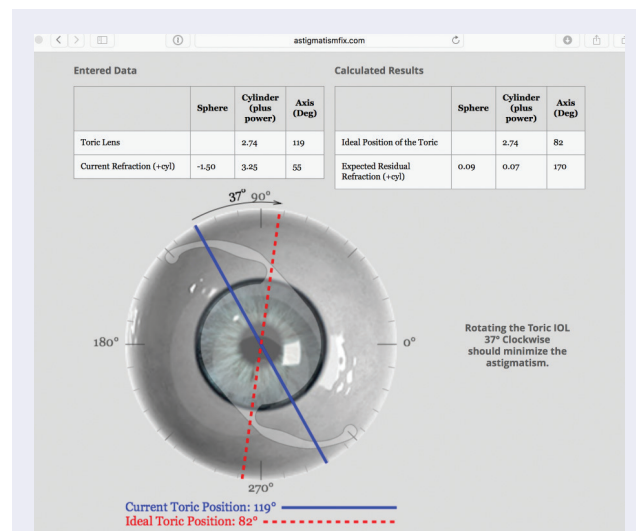


Figure. Output from astigmatismfix.com suggests that a 37° clockwise rotation will reduce the postoperative refraction from -1.50 -3.25 × 55° to +0.09 +0.07 × 170°.

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toric power is too little or too much), then I will perform laser vision correction.

TIMING

The tricky part about addressing a misaligned toric IOL is the timing. Ideally, I like to wait for healing and refractive stability, but if I plan to reenter an eye, I prefer to do so sooner rather than later. It is difficult to determine an effective refractive approach, however, prior to achieving good BCVA.

It therefore all comes back to surgery: the better the initial procedure is, the quicker the patient heals, and the earlier I can decide how to approach the misaligned toric IOL.

Daniel H. Chang, MD

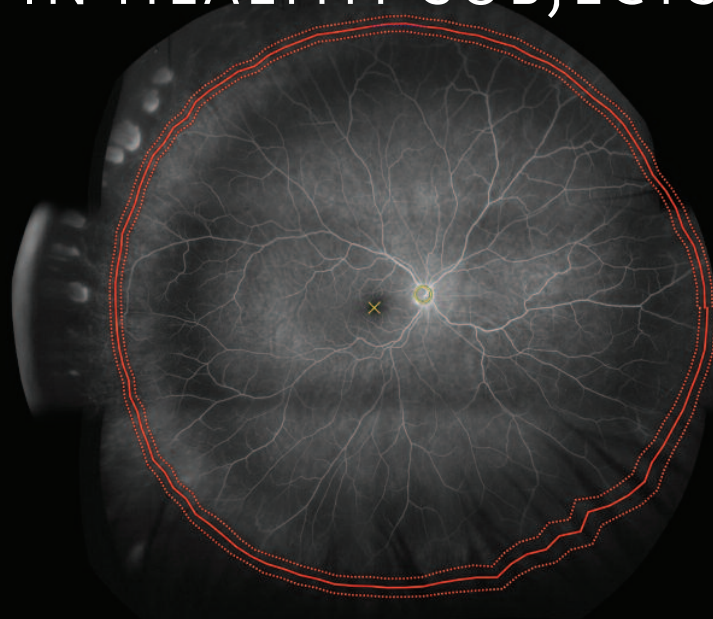
- private practice at Empire Eye and Laser Center, Bakersfield, California
- (661) 325-3937; dchang@empireeyelandlaser.com

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IDENTIFIES EXTENT OF RETINAL VASCULATURE IN HEALTHY SUBJECTS



A study published in *Ophthalmology* details the extent of perfused area in the healthy retina using measurements from optomap® *fa*.

The identification of peripheral retinal nonperfusion is thought to be of importance for the management of eyes with retinal vascular diseases such as retinal vein occlusion and diabetic retinopathy. Results from this study found that in a cohort of normal subjects, the mean radial surface distance from the center of the optic disc to the peripheral edge of the visible vasculature was 20.3 ± 1.5 mm and the mean area of the normal perfused retina was 977.0 mm^2 .¹

The stereographic projection algorithm used in this study enabled the montaging of five 200° fields of view with correction of peripheral distortion and accurate quantification of the vascularized retina from UWF images¹. Previous reports have validated the ability of ProView™ software to correct peripheral distortion observed in ultra-widefield retinal images and provide precise and accurate measurements².

“With the increasing use of ultra-widefield imaging to evaluate and manage patients with retinal vascular disease, the normative data from this study may provide a useful reference when assessing the pathologic significance of findings in the setting of disease.”

Ophthalmology 2016¹

See how **optomap** will help you manage your patients.

Building *The* Retina Company

References:

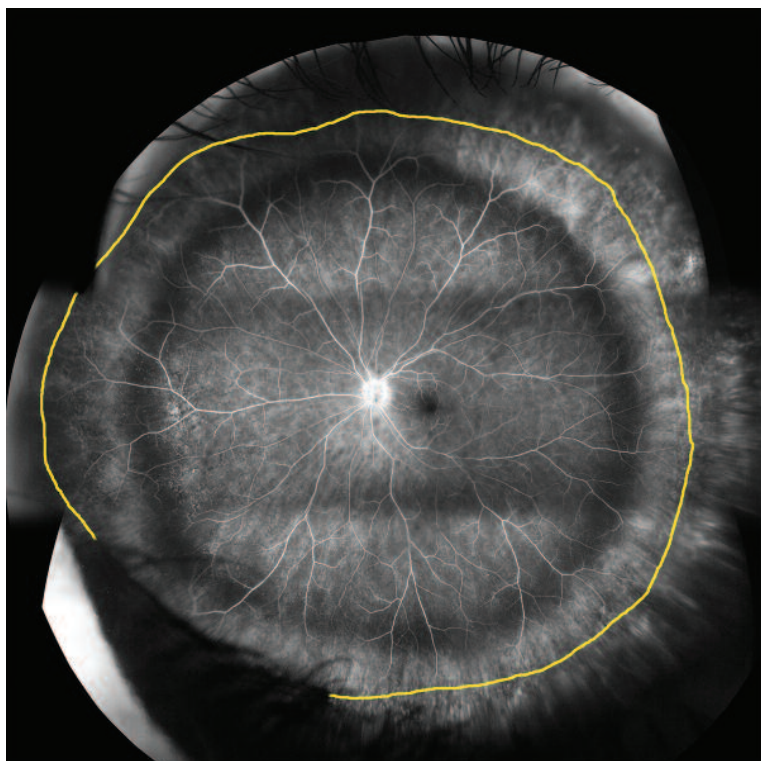
¹ Singer et al. Ultra-widefield Imaging of the Peripheral Retinal Vasculature in Normal Subjects. *Ophthalmology* 2016

² Sagong et al. Assessment of Accuracy and Precision of Quantification of Ultra-Widefield Images. *Ophthalmology*. 20

CLINICAL SUMMARY

Ultra-widefield Imaging of the Peripheral Retinal Vasculature in Normal Subjects

Singer, Sagong, van Hemert, Kuehlewein, Bell, Sadda
Ophthalmology - 2015



optomap *fa* montaged image demonstrating the boundary of perfused retina

- 59 eyes of subjects with no ocular or systemic vascular disease were imaged using **optomap *fa***. Subjects were stratified by age in order to determine if age was a factor on extent of perfused retina.
- Analysis indicated that when using the center of the optic disc as the reference point, mean area of perfused retina was 977.0 mm² and distance to the peripheral vascular border was 20.3±1.4 mm².¹
- There were significant differences in the different quadrants with the order of temporal, inferior, superior, and nasal, with the distance being greatest in the temporal quadrant. It was found that there was no significant difference between right and left eyes or male and female participants.
- The distances to the perfused vascular border were significantly shorter in older individuals (≥60 years) than in younger subjects. This suggests that there may be a need to adjust the reference for normal perfused retinal area depending on the age.
- Previous studies reported the total retinal surface area to be 1133.8mm² and that retinal capillaries do not often reach the ora serrata. This study provides a map of the normal perfused retinal border. This map may have potential applications in quantitative studies of retinal vascular diseases, which have been reporting results as ischemic or leaking indices.¹
- The latest generation of Optos devices (*California*, *Daytona* and 200Tx) includes automated software tools for stereographic projection and registration that facilitate interdevice measurement comparisons.



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Events

Year 96 has finished with all good and bad events. After earthquake in Kermanshah, collapse in Yurt mine and fire in Sanchi ship, we received the final disaster from air which broke our hearts deeply, crash in Tehran-Yasuj airplane that took our dearest one, Mr. Hamed Amiri, senior engineer in ophthalmology Products.

His memorial has been held in Espinas Palace hotel with a great attendance of our friends in centers and other medical equipment companies.

The Iranian national medical device directorate representatives also honored us by attending in the ceremony and reading Dr.Masaeli an-

nouncement about this tragic loss.

Amico Yasna Pars appreciate the warm companionship of all the people that their kind attendance to this ceremony and their warm messages during our hard time of losing a friend, made this disaster tolerable for us.

May god bless him, and his soul to be rest in peace.



Upcoming Events

17-20 April 2018

Second Spring Ophthalmology Meeting

Razi Convention Center –
Tehran

19-22 April 2018

Japanese Ophthalmological Society 122nd Annual Meeting 2018

Osaka, Japan

2 - 4 May 2018

24th Farabi Annual Seminar

Center Of International
Seminars In RIPI, Tehran

9 - 11 May 2018

26th Annual Seminar of
Medical Science University
of Shiraz

Shiraz, Iran

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