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Amico Yasna Pars

Ophthalmology Newsletter

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Conducting scientific congresses is a valuable opportunity to get aware of modern science and technology news. The sharing of knowledge and experience obtained over a period of working time is a great occasion to promote the academic ability of a scientific group. Like many other groups, ophthalmology follows the same rule. Although it seems that holding ophthalmology seminars in the country needs to be reviewed in term of timing, but this does not diminish their value.

Although gaining knowledge and experience is the main goal in any scientific seminar but there is no doubt that one of the great opportunities for organizing an Ophthalmic Congress is the sidelines exhibition of the latest achievements and news of ophthalmic supplies and equipment. This is where the role of commercial companies is highlighted. Each company is trying hard to prove its role during the event by presenting the latest and most advanced technology.

With this point of view, Amico Yasns Pars has always made serious efforts to bear the responsibility in supporting such events so that it has been one of the main congressional sponsors in almost all of such events.

Here, we ask all ophthalmologists to come alongside us and help doing our mission as much effective as possible.



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NINE PEARLS FOR CENTERING THE TECNIS SYMPHONY IOL

Rethink your methods for managing premium lens patients.

BY RON BALDASSARE, MD, CM, FRCSC, ABO



The Tecnis Symphony (Abbott Medical Optics) is a relatively new addition to the armamentarium of IOLs offering solutions to presbyopia. The Symphony provides an extended range of vision through the incorporation of a diffractive echelette optical design, rather than splitting light like a multifocal IOL. At the same time, its achromatic technology corrects for chromatic aberration, providing improved contrast sensitivity.

Like any premium IOL, the best visual results with the Symphony depend on accurate centration. For surgeons who are not familiar with implanting the Symphony, I humbly offer nine clinical pearls for centering this high-technology lens (<http://bit.ly/baldassare916>). But these pearls start well before you and the patient enter the operating room. They require a careful rethinking of your way of managing patients.

CHOICE PEARLS

PEARL
No. 1

Develop a protocol for the process. Following a systematic approach is the cornerstone for success. For premium lenses to be successful, every step of the surgery must be performed the same way, for every patient and for every procedure. This does not necessarily translate to additional chair or staff time; it simply requires an up-front commitment to organize your office and thought process to smoothly proceed through each step of your protocol.

PEARL
No. 2

Select the right patient. Achieving proper lens centration requires an appropriate eye. I carefully screen my patients and apply elimination criteria to screen out those at risk of experiencing aberrations and poor visual quality postoperatively. In my experience, patients with healthy eyes, an angle kappa of less than 0.5 mm, root mean square (RMS) higher-order aberrations of less than 0.3 μm , and no unique corneal abnormalities generally make good candidates for premium IOLs.

PEARL
No. 3

Measure, then measure again. We have happy patients because we use good data, not because we do something special or unique during surgery. We perform Pentacam (Oculus), OPD-Scan III (Nidek),

and wavefront analyses to determine the eye's astigmatism and the optical quality of the cornea. We use IOLMaster (Carl Zeiss Meditec) measurements and the Holladay 2 formula to calculate lens power. Then we repeat these measurements in every patient—two or three times—to ensure that the results are consistent. Although the initial measurements may appear valid, they can be inaccurate if readings are taken on a day when the patient has a dry eye or if the technician's measurements were not completely reliable. Accurate, precise metrics are nonnegotiable.

Do not worry that multiple measurements may be an inconvenience to your patient. Our patients are usually happy to return to our office for a 5-minute repeat measurement. They understand that it is in their best interest that we start with correct data.

PEARL
No. 4

Capsule-capture it. Every IOL has pros and cons. The Tecnis Symphony lens is slick and, therefore, easier to center than its stickier counterparts. However, maintaining centration is contingent upon using the correct technique and tools to keep it where you want it. IOLs are just like golf clubs; a 3 iron and a wedge are both good

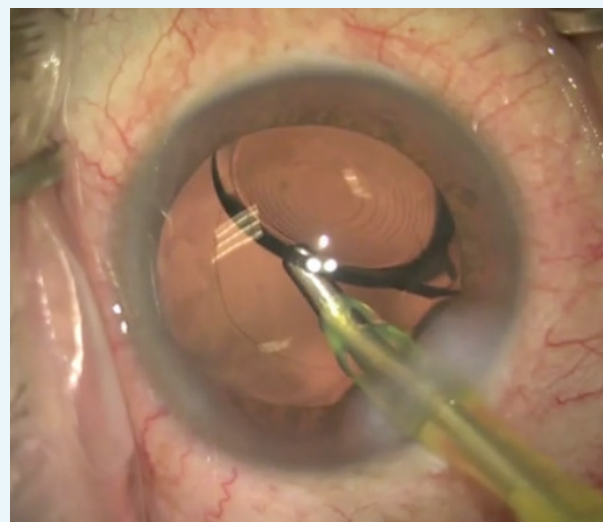


Figure 1. OVD is removed from behind the IOL.

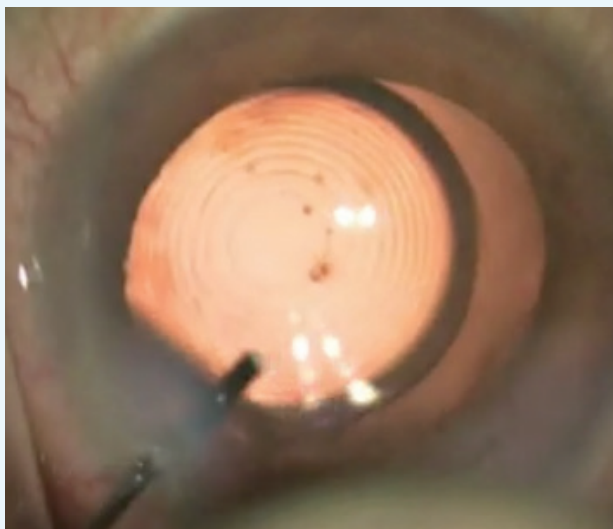


Figure 2. Pushing down on the Symphony aids in capsule capture.

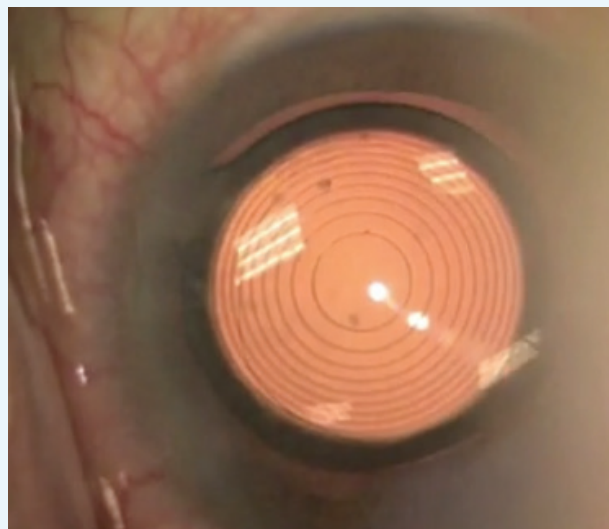


Figure 3. The first Purkinje references the patient's line of sight and shows the patient's angle kappa.

clubs, but they must be used differently. For Tecnis lenses, implantation and centration are technique-dependent.

Following is my preferred technique to center the Tecnis Symphony lens:

Step No. 1: Remove OVD. Once the crystalline lens is removed and the Tecnis Symphony is implanted within the capsular bag, I remove all of the cohesive OVD, especially from behind the lens implant (Figure 1). I avoid use of dispersive OVDs, as there is more risk of retaining residual OVD under the lens, preventing adhesion.

Step No. 2: Lock the lens into place. I place the lens on the axis of what I believe is the patient's line of sight. I then push down on the lens with the I/A tip with almost maximal irrigation and aspiration engaged. The elasticity of the capsular bag allows it to stretch over the edges of the haptic and optic. Then, as the pressure is slowly released, the lens is encapsulated in the bag, thus locking the lens in place and reducing the risk of further movement or rotation. I term this the *capsule capture* of the lens (Figure 2).

Just as with any multifocal or toric lens, secure and correct positioning is crucial when implanting the Tecnis Symphony. Any rotation or shift can produce substandard outcomes. If a lens does spin after implantation, it can be capsule-captured in the capsular bag by applying pressure with a 27-gauge cannula via the paracentesis, as described below.

PEARL No. 5 **Understand your microscope.** To correctly verify axis centration, your microscope should be equipped with a coaxial beam. Most modern microscopes have this, but, if yours does not, invest in an adapter that can give you a coaxial fixation point.

Remember that the pupil is a dynamic entity; pupillary centration does not necessarily equate to a properly centered lens, and further verification is required. After hydrating the wounds, I dim the lights in the operating room to ensure that the patient fixates on the correct light point. To ensure correct fixation, I block one of the two coaxial beams on the microscope with my finger so that the patient fixates on a single coaxial beam.

PEARL No. 6 **Trust the Purkinje image.** The first Purkinje image of the cornea while the patient is fixating on the single coaxial beam references the patient's line of sight and shows us the patient's angle kappa (Figure 3). If the angle kappa is less than 300 μ m and the first Purkinje image



Discussion



AT A GLANCE

- Premium lenses require a consistent workup and attention to detail when centering the lens to achieve the greatest outcomes.
- Maintaining IOL centration is contingent upon using the correct technique and tools to keep it where you want it.
- Performing *capsule capture* can help one to ensure that the lens stays in place on the line of sight.

is in the center of the first diffractive ring of the Tecnis Symfony, the lens is well centered and no adjustment is necessary. An angle kappa of greater than 300 μm requires an adjustment of the lens position, typically half the distance of the angle kappa. For instance, if the angle kappa is 450 μm , offset the Purkinje image approximately 225 μm nasally. In general, it is better if the first Purkinje image is slightly nasal to the lens center rather than temporal. For any angle kappa of 300 μm or less, I center the lens directly on the first Purkinje image.



A self-centering lens does not guarantee

centration. Despite the self-centering design of the haptics, a lens may be difficult to center, and it may decenter, move, or rotate after implantation due to an asymmetric or small capsular bag. This is particularly true in small eyes with small capsular bags. A capsular bag that is oval-shaped may cause the lens to sit in a slightly different location after rotation. During the centering process, the lens may center quite nicely with the haptics in one particular position, but not in another. The converse is also true; if the bag exceeds the diameter of the haptics, you may see the lens move back and forth because its diameter is not great enough to fully bridge the entire capsular bag. In this event, it must be capsule-captured in order to be fixed into position. I recommend capsule capturing to ensure that the lens stays in place on the line of sight.

Moving a capsule-captured lens, should the initial position not be ideal, requires a modification of the capsule-capture technique. I typically enter through the paracentesis with an irrigating 27-gauge cannula to avoid collapsing the anterior chamber. I inject balanced saline solution to inflate the anterior chamber and uncapture the lens by deepening and stretching the bag away from the lens. I then rotate the lens into the desired position and again irrigate as I push down on the lens, capsule-capturing it. Once the lens is in place, I irrigate a little bit more and then use a 27-gauge cannula to hydrate the paracentesis and secure the wounds. I gently release and remove the cannula to lock the lens in place.

This is essentially the same as the technique described earlier with the I/A tip, except this is done through the paracentesis

with the cannula. The 27-gauge cannula offers better control for this maneuver than the I/A tip, which can leave a bit of an open wound. This could potentially cause the chamber to collapse, even with a 2.2- or 2.4-mm incision. Entering through the paracentesis reduces the risk of collapse and works just as well to produce the desired visual quality and acuities our patients expect.

We have performed more than 50 cases using this Purkinje image-guided posterior pressure capsule-capture technique. Our data indicate an increase in the number of patients achieving good functional vision and better near vision, as demonstrated by the ability of most patients to read 20/25 with good reading speeds after bilateral Tecnis Symfony implantation.



Some data are better obtained the old-fashioned

way. When choosing the lens power, I generally target -0.25 to -0.50 D. My cutoff is -0.75 D because patients who are left more myopic than this will not have acceptable distance vision. In my experience, the Symfony lens is more forgiving than a multifocal lens, and patients seem to see better than expected given their refractions and, especially, their levels of residual astigmatism. I perform the manifest refraction myself, especially on the first eye, for use in planning for the second eye. Autorefractometry is unreliable, and manifest refraction is a must to determine the refraction.



Realize that this is not a perfect science.

Technology requires oversight; it is not perfect yet. We can certainly use technology and objective measurements in preoperative planning, but these are never a guarantee of perfection. However, we can determine the lens centration after surgery as validation of our surgical technique. If possible, check the lens centration using the first Purkinje image. The OPD-Scan III has an image that can mark the line of sight using a red reflex image of the concentric diffractive rings of the lens. Confirming correct centration is a necessary step to ensuring the best outcomes for your patients.

CONCLUSION

Accept that, at times, a lens will simply not center perfectly, but know that employing the nine techniques described above will give your patients the greatest chance of excellent quality vision at all distances with the least risk of dysphotopsia from a poorly centered lens. Premium lenses with premium outcomes require a consistent workup and attention to detail when centering the lens to achieve the greatest outcomes for your patients. ■

Ron Baldassare, MD, CM, FRCSC, ABO

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- Financial disclosure: Consultant (Abbott Medical Optics)

PHACO UPDATES

The latest improvements and innovations.

Whitestar Signature Pro

BY SUMIT "SAM" GARG, MD



The Whitestar Signature Pro System (Abbott) has undergone software updates that improve its handling and performance. For me, the most notable change is the increased stability that results from fast, proactive responses. The machine samples IOP continuously and rapidly, testing the vacuum 250 times per second. It then anticipates changes to the pressure and makes the adjustments necessary to maintain the ideal IOP. In addition, the tubing has become less compliant. All of this results in less postocclusion surge and a more stable chamber (Figure).

INTERFACE IMPROVEMENTS

Improvements have also been made to the user interface and the foot pedal. My technicians and I find the user interface to be more intuitive, and the foot pedal is more ergonomic and responsive than the previous version. The latest upgrade to the system maintains my ability to switch quickly between a venturi or peristaltic pump. Like many other surgeons, I change pump settings for different stages of cataract removal, because I feel doing so provides me with maximum control and customization of my surgical procedure. As a straight chop surgeon, I use the peristaltic pump for the initial stages of my cataract procedure to hold the nucleus during my initial chops. Then, I transition to venturi for the remainder of the case and use the vacuum-based pump for fragment removal, cortical cleanup, and thorough removal of ophthalmic viscosurgical devices. The Ellips FX handpiece (Abbott) allows me the flexibility to choose my phaco tip while providing the benefits of elliptical motion of the phaco needle.

ADMINISTRATIVE

Other important upgrades to the system are directed toward the administrative side of cataract surgery. The cataract analysis and settings application records the relevant parameters of each case and allows me to enter notes as well. I can comment if the patient had a particularly dense cataract, Fuchs endothelial dystrophy, or other factors that might have influenced the case time or outcome. Postoperatively, I can review my parameters: how long the

“The advances on the Signature Pro platform promote increased efficiency and safety in cataract surgery.”

case took, what the turnover time was, and how much energy was used. I can compare my individual performance with that of my surgical center as a whole. This kind of benchmarking is important for improving performance and outcomes, and the surgery center manager can review and analyze information to find additional efficiencies. As in any business, the collection metrics is an invaluable tool to remaining at the top of the field, and I find that this application definitely helps.

Although the system does not look dramatically different from its predecessor, the advances on the Signature Pro platform promote increased efficiency and safety in cataract surgery.

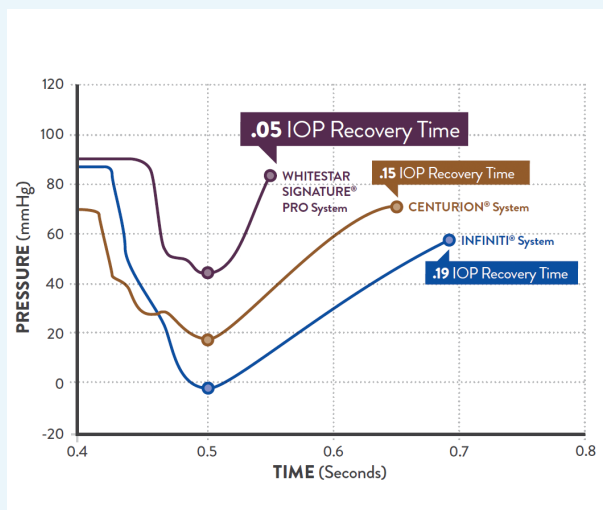


Figure. Upgrades to the Signature system result in less postocclusion surge and a more stable chamber in peristaltic mode.

Proper Toric IOL Alignment Begins With Centration

The ABCs of positioning toric IOLs.

BY DANIEL H. CHANG, MD

The challenges of properly aligning toric IOLs are familiar. Even with careful marking of the intended axis of correction on the peripheral cornea, the IOL will often align correctly with the mark on one side but not on the other. Perhaps the IOL will sit with the toric marks parallel to—but not exactly aligned with—the axial marks. Then, there is the issue of parallax: the lens appears to be aligned from one angle of view but not from another, making it hard to know whether the lens is actually positioned correctly. Many factors can make toric IOL alignment challenging, including the limitations of ink markings, changes in head position, pupillary dilation, fixation from preoperatively to intraoperatively, and the significant parallax that occurs when marks on the cornea are viewed relative to the IOL plane.

THE CORRECT AXIS OF ASTIGMATISM

Much of the discussion around the accurate positioning of toric IOLs concerns the identification of and placement on the correct axis of astigmatism. Correct axial alignment of a toric IOL is critical, but it must be preceded by proper

centration of the IOL. Just like an analog clock, if the hands are not mounted properly at the center of the clock face, they will not accurately point to the minute or hour marks. Similarly, when iris registration (IR) was introduced in corneal laser refractive surgery, the initial focus was on preventing treatment misalignment due to cyclorotation. It quickly became apparent, however, that, for most eyes, the compensation for pupillary centroid shift was the more significant contributor to accurate ablation than the rotational component.¹

When it comes to centration, we can learn from our experience with diffractive multifocal IOLs. These lenses' distinctive rings make centration (or lack thereof) more noticeable and have brought greater attention to the importance and manner of centering IOLs. Although toric lenses do not have rings to help us visualize the IOL's center, we can still use the same principles to improve toric lens centration.

PEARLS FOR CENTERING TORIC IOLs

There are several possible intraoperative reference points for centration. Although it may be

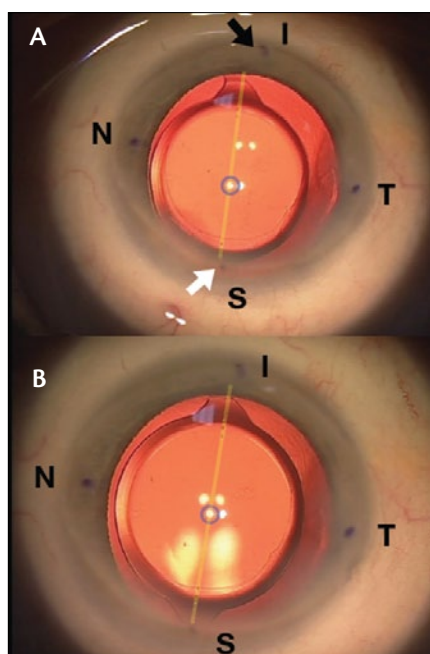


Figure 1. A toric IOL in a right eye that is well aligned superiorly (white arrow) but misaligned inferiorly (black arrow). Note that the IOL is centered on the CSCLR (circled in blue) (A). By moving the inferior haptic temporally, both sets of axial marks are well aligned. The IOL continues to be well centered on the CSCLR such that both corneal marks, both IOL axial marks, and the CSCLR all lie along the same line (B).

tempting to center a diffractive multifocal IOL on the pupil and a toric IOL on the limbus, these may not be the best references for centration. In my opinion, the surgeon should center on the coaxially sighted corneal light reflex (CSCLR), which correlates closely with the visual axis.

When marking the cardinal axes on the eye prior to toric IOL implantation, the marks should be along the 0° and/or 90° meridians, centered on the CSCLR. To achieve this orientation, the patient should ideally be fixating on a coaxial light as the surgeon marks the cardinal axes. I mark the 0° and 180° axes by referencing the pupil's image from my topographer, which images a true CSCLR. I use iris features and limbal contours from the topographic image to guide my preoperative marking of the cardinal axes at the slit lamp. I make all marks with a fine-tipped ink pen and indent the epithelium so that I can find the center of the mark even if the ink bleeds.

Intraoperatively, I have the patient fixate on a coaxial light source at the beginning of the case. On my Lumera (Carl Zeiss Meditec) operating microscope, this correlates with one of the two stereo coaxial lights. I then place the toric axis marker and make my axial marks, while taking care that they are centered on the aligned CSCLR. As mentioned earlier, the center of a toric IOL can be more challenging to localize than the center of a multifocal IOL, but it is still relatively easy to align the CSCLR between the two sets of alignment dots on a toric IOL. As I am rotating the IOL to match up its alignment dots with my corneal axial marks, I again ask the patient to fixate on the coaxial light source. When everything is aligned correctly and the patient is fixating at the coaxial light source, I should be able to draw a straight line through all five reference points—the two corneal axial marks, the two sets of axis-marking dots on the IOL, and the CSCLR (Figure 1). If the CSCLR is not aligned with the corneal axial marks, I prefer to

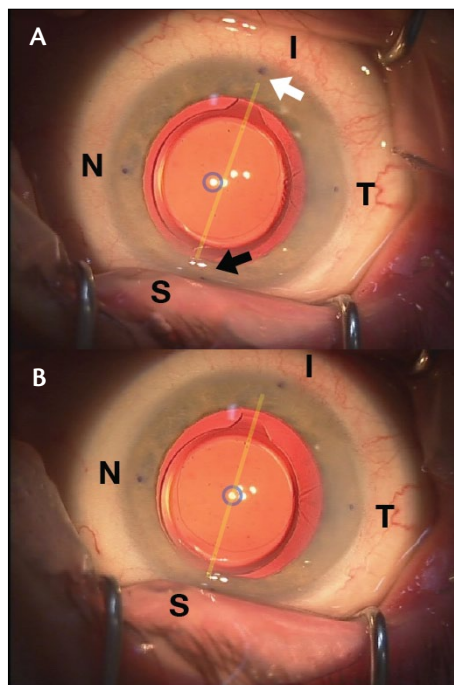


Figure 2. A toric IOL in a right eye that appears to be well aligned inferiorly (white arrow) but misaligned superiorly (black arrow). However, note that the CSCLR (circled in blue) is nasal to the center of the IOL (A). Instead of moving the superior haptic temporally, the inferior haptic is moved nasally such that the IOL is centered on the CSCLR and the IOL axial marks are parallel to the corneal marks (B). If the corneal marks had been aligned on the CSCLR during placement, they would be more nasal and fall along the line formed by the IOL axial marks and the CSCLR.

align the IOL with the CSCLR and parallel to the corneal axial marks (Figure 2). Good centration and patient fixation eliminate the concern for parallax so proper alignment can be confirmed.

DOES ALIGNMENT MATTER?

We know that each degree of rotational misalignment reduces the toric effect by 3.3%.² If the lens is decentered and misaligned, the reduction in effect could be even greater.

Fortunately, patients who opt for toric lenses are typically a little less demanding than other premium IOL patients in terms of expectations. My preferred toric implant, the Tecnis Toric (Abbott Medical Optics), tends to be somewhat forgiving of minor misalignment thanks to its superior chromatic and spherical aberration characteristics. As we surgeons increasingly focus on obtaining the best possible outcomes in premium IOL surgery, centration and alignment are both issues to which we should be paying closer attention.

CONCLUSION

Centering an IOL is an important component in optimizing the lens' position and achieving the best

possible visual results with any IOL. When implanting a toric lens, centration becomes the critical first step in achieving rotational alignment. Without good centration, we are only approximating the toric axis—hardly an ideal situation for any surgeon striving for precision in modern cataract surgery. ■

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Events

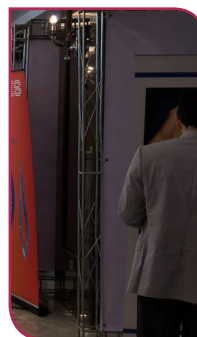


2nd International Basir Eye Health Research Center Congress

Basir Eye Health Research Center is among one of the most active Clinical research centers in Tehran. The center has been organizing a meeting on the latest ophthalmic achievements on May, 26th, 2017 at Basir Eye Clinic. In addition to the diverse scientific topics, the meeting reviewed high quality ophthalmic supplies and equipment. Among other topics, Technis

Symfony IOL, the premium intra ocular lens for correcting presbyopia was presented by Amico Yasna Pars scientific representative and welcomed by the participants.

Amico Yasna Pars represents many top level companies including ABBOTT the supplier of Symfony IOLs for correcting presbyopia.



25th Annual Seminar of Ophthalmology of Tabriz medical Science University

Tabriz University of Medical Sciences hosted its annual seminar from 12 to 14, July, 2017 at Kaya International Hotel in Tabriz. Although glaucoma and the ways to cope with it were the main theme of the meeting, a variety of papers, lectures and workshops were presented.

The event was a good opportunity for ophthalmic equipment companies to have a close contact with ophthalmologists, especially those of

the Azerbaijan region and update their information on ophthalmic equipment. For Amico Yasna Pars, it was a valuable opportunity to attend this important event and closely meet with ophthalmologists from the East Azarbaijan province to get more familiar with their needs in the field of ophthalmic equipment.

Upcomming Events

2 - 6 August 2017

Australasian Society of
Cataract and Refractive
Surgeons 21st Annual Con-
ference 2017

Queensland, Australia

11 - 15 August 2017

American Society of Retina
Specialists 35th Annual Sci-
entific Meeting 2017 (ASRS
2017)

Boston, USA

31 August – 2 September 2017

European Pediatric Oph-
thalmological Society 2017
(EPOS 2017)

Oxford, UK

7 - 8 September 2017

United Kingdom And Ireland
Society Of Cataract And
Refractive Surgeons 41st
Annual Meeting 2017
(UKISCRS 2017)

Hinckley, UK



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