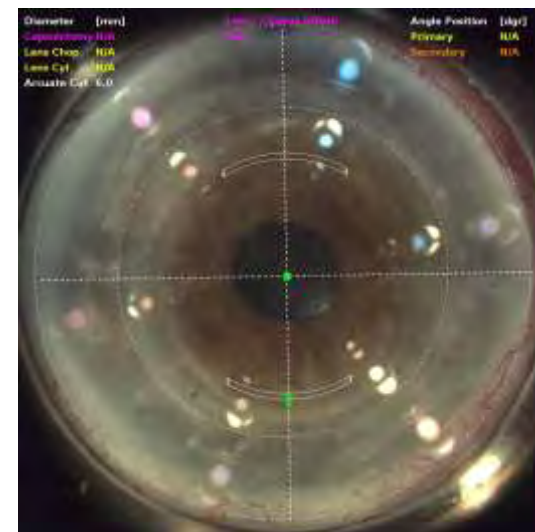
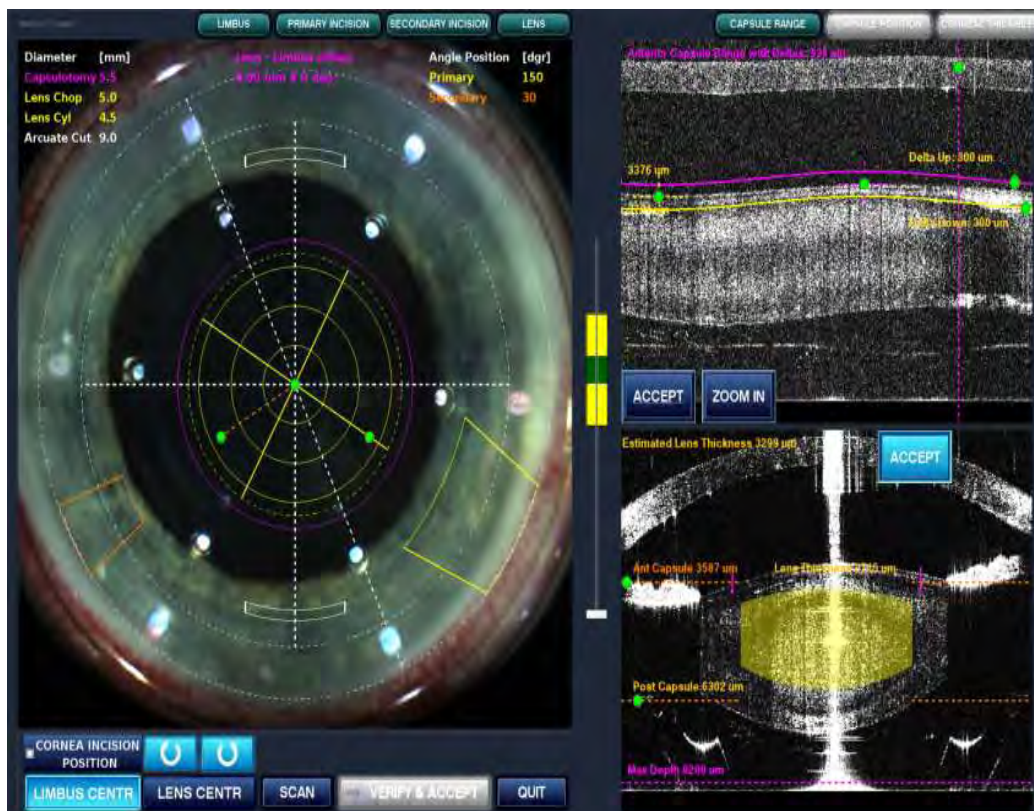


OCT-guided bladeless cataract surgery and astigmatic keratotomy 2012

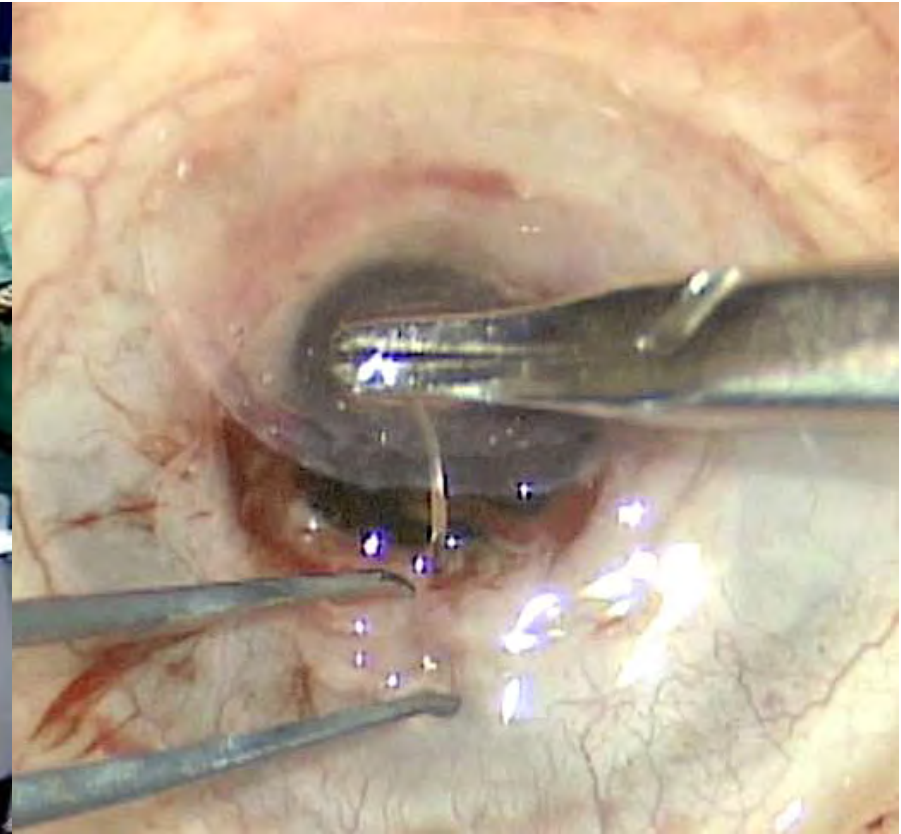
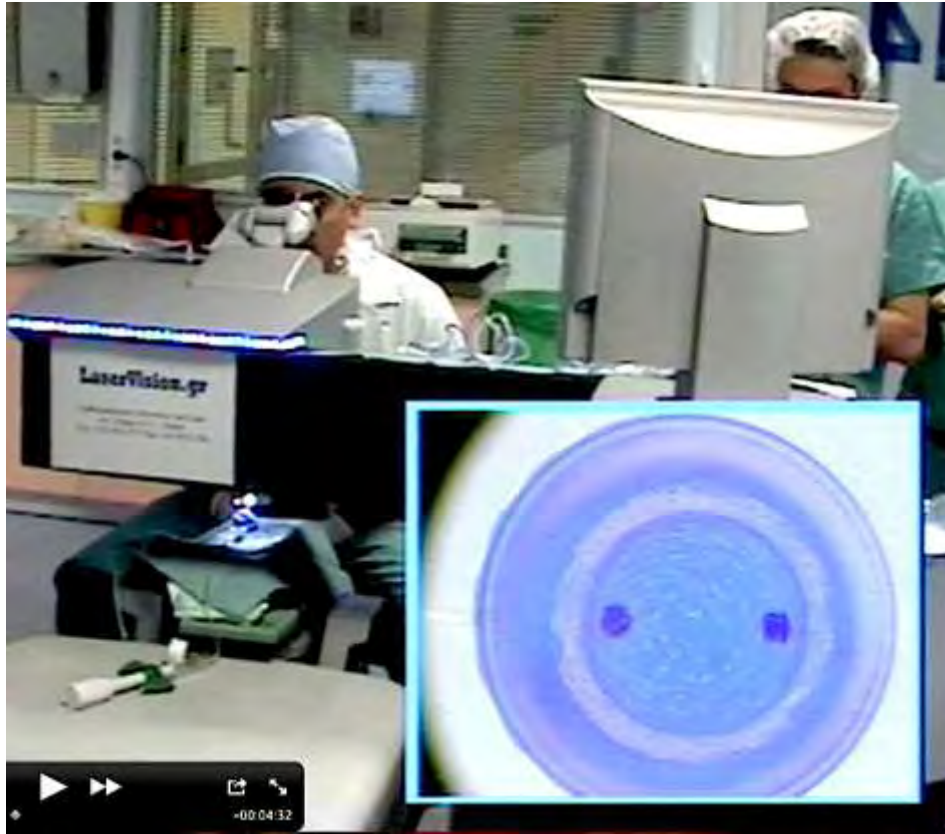


Anastasios John Kanellopoulos, MD
Clinical Professor NYU Medical School, NY
Director, Laservision.gr Institute, Athens, Greece

Financial disclosures: Alcon, Wavelight, Avedro, B&L



Femto PK



What is the goal of laser-assisted cataract surgery?

- To improve
 - Refractive outcomes
 - Safety profile
 - Patient comfort and satisfaction
- How can this be accomplished?
 - More precise and accurate *capsulotomy*
 - More precise and accurate cataract incision
 - More efficient lens disruption and removal
 - More precise and accurate relaxing incisions



Surgical Systems



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Laser (Bladeless) Cataract Surgery is Here to Stay

Throughout my 20 years of experience in ophthalmic surgery, nothing has impressed me more than my introduction to the concept of the femtosecond laser for ophthalmic use. I will never forget the first time I learned of this prospect—it was at the American Society of Cataract and Refractive Surgery (ASCRS) meeting in 2000. An investigative tool at the time, the prototype Intralase femtosecond laser (now Abbott Medical Optics Inc.) had potential applications in corneal and possibly anterior segment surgery.

It took only a few years to witness bladeless LASK become a mainstay in refractive surgery globally. Although we all know that you can perform very good LASK with a mechanical microkeratome, 6 years of experience with laser-only LASK surgery, initially with the Intralase and currently with the FS200 (Alcon Laboratories, Inc.), has convinced me that I will never go back to a bladed microkeratome. The high reproducibility and accurate flap parameters, regardless of corneal astigmatism, thickness, and diameter, as well as patient age, are a signature feature with almost all femtosecond laser systems. Similarly, after 6 months of experience in laser cataract surgery with the LenSx femtosecond laser (Alcon Laboratories, Inc.), I am starting to see some of the advantages of this technology, especially in high-risk and pseudoexfoliation cases compared with manual cataract surgery. One of my recent cases is featured at eyetube.net/?v=dehir.

This month, CRST Europe's cover stories feature a global perspective from a team of well-known cataract surgeons,

offering varied points of view on the application of the femtosecond laser in cataract surgery. Following the approval of the LenSx in the United States and in Europe, several other excellent and promising laser devices for cataract surgery are now available, all of which are discussed in this issue. As

you will see in each surgeon's article, the learning curves have been relatively short. There are some intrinsic restrictions in performing laser cataract surgery, however, such as achieving adequate pupil dilatation, avoiding lens fragmentation close to the posterior capsule (as this may risk posterior capsular rupture prior to entering the eye), performing careful hydrodissection (as there will be air within the capsular bag from the femtosecond-assisted lens fragmentation), and dealing with annoying pupil constriction after the femtosecond laser treatment has been

applied. Additionally, application of laser cataract surgery may necessitate an updated technique for lens fragment removal.

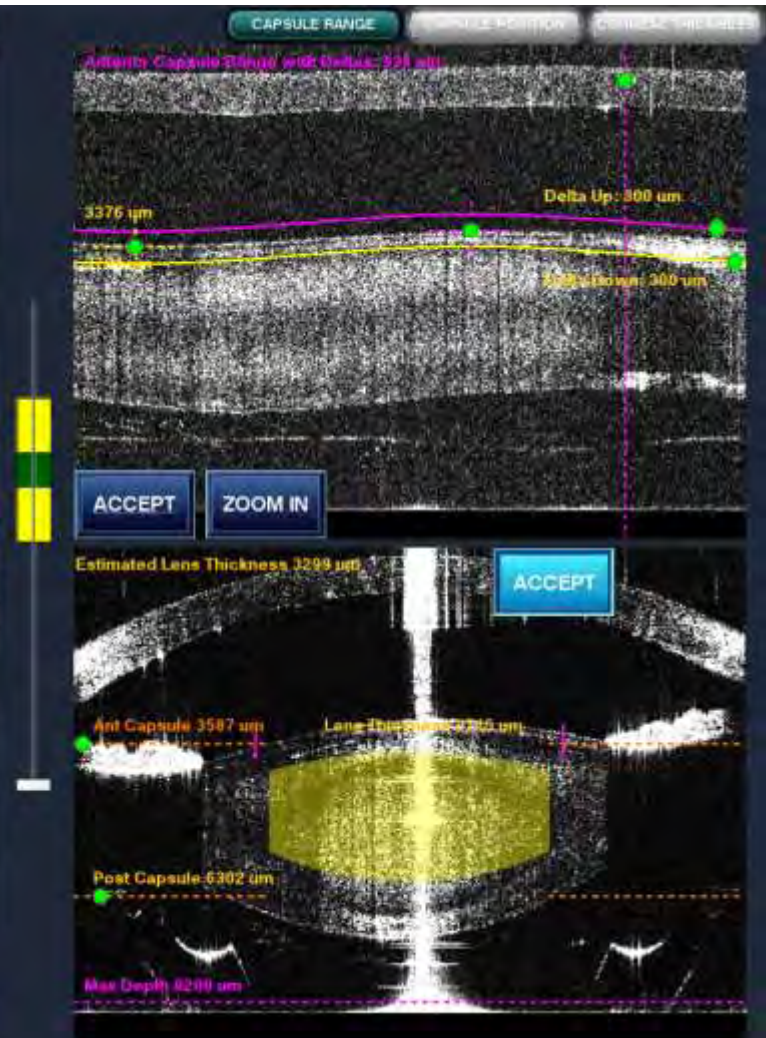
Most of the early adopters of this technology agree that, even at this early point, the femtosecond laser has established itself as a far more accurate tool than manual cataract surgery in regard to wound creation, impeccable positioning and construction of the capsulorrhexis, and significant reduction or elimination of phacoemulsification time by allowing prefragmentation of the lens.

Of course, the procedure is still in its infancy. It is now up to the ultimate surgical machine, which is nothing other than ourselves, the surgeons. Over time, we will devise and advance new femtosecond cataract techniques, new instruments, and possibly further upgrades of these technologies to make cataract surgery an even safer and easier procedure. ■



A. John Kanellopoulos, MD
Associate Chief Medical Editor





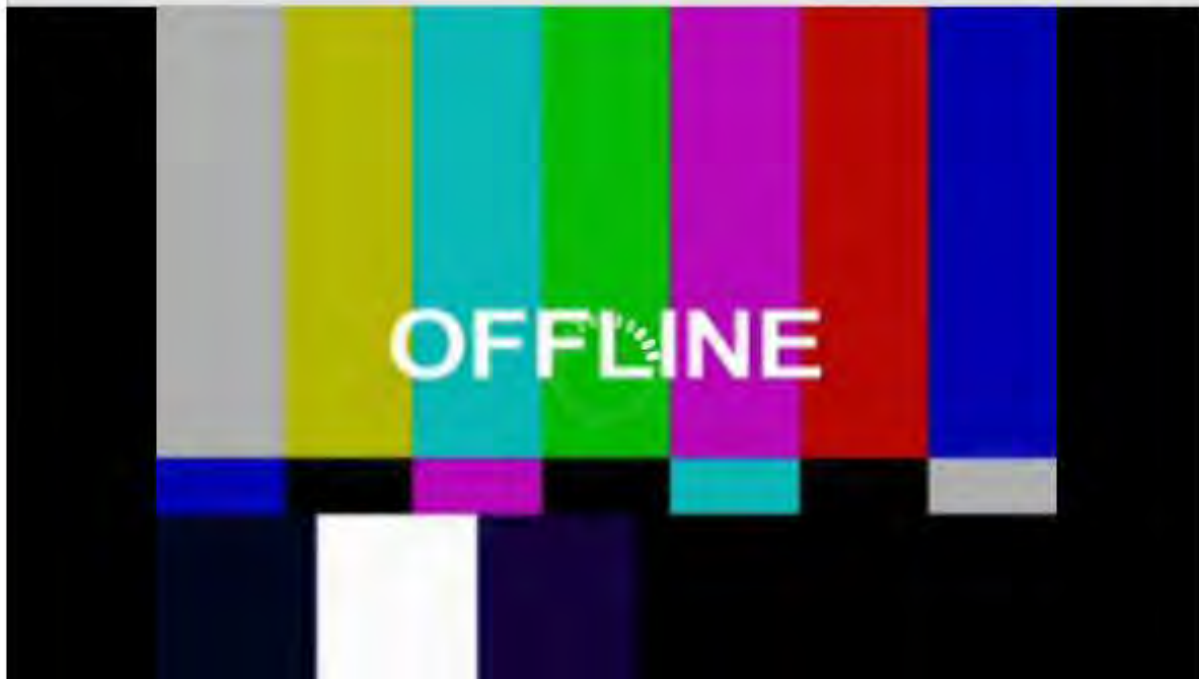
LenSx-Athens 2012



LaserVision.gr



Laservision.gr
Eye Institute for Laser



1 VIEWER

CHAT SHARE

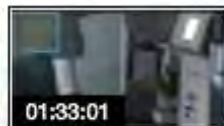
Latest Videos



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Live Show [Procaster]



09APR12 2



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Welcome to the 'laservision' room.

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Evaluation of femtosecond laser assisted clear cornea cataract surgery

ESCRS Milan 2012

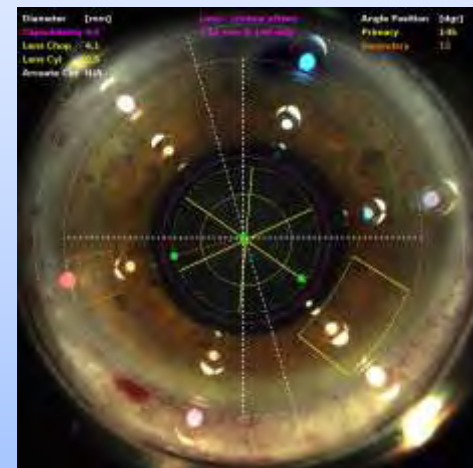
Socrates Dimitriou, MD¹-Augenlinik Theresienhohe

Janna Harder, MD²-Augenlinik Theresienhohe

A. John Kanellopoulos, MD³-Clinical Professor NYU Medical School, NY
Director, Laservision.gr Institute, Athens, Greece

Ioannis Datsaris, MD⁴-OMMA Ophthalmological Eye Institute of Athens

Financial Interest:None ^{1,2,4},Alcon/Wavelight³



Methods: 115 eyes of 78 consecutive patients were evaluated pre- and 6 months post-operatively for: age, UCVA, BSCVA, refraction, cylinder (C), capsulorrhexis diameter (Cd), topographic cylinder change (TCc), endothelium (ECC), and possible complications

Conclusions: The use of femtosecond laser assisted clear cornea cataract surgery is effective at achieving emmetropia in this series of patients.

Uncorrected visual acuity was 20/25.

Cylinder was reduced and endothelial cell count was preserved.

Two patients had incomplete capsulorrhexis that were completed manually.

No other complications were noted in this series. This novel bladeless femto-assisted clear cornea cataract surgery appears to be safe and effective in facilitating emmetropia. Current phacoemulsification cataract surgery has excellent visual results. However, this has led to an increase in patient expectations.

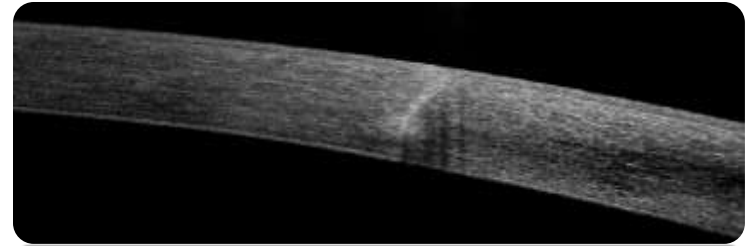
The use of femtosecond laser allows for a more precise capsulorrhexis which is necessary with the evolution of multifocal IOLs.⁸⁻¹⁰

Less phacoemulsification time is required, reducing energy exposure to the endothelium.¹¹ Cost considerations are still an issue.

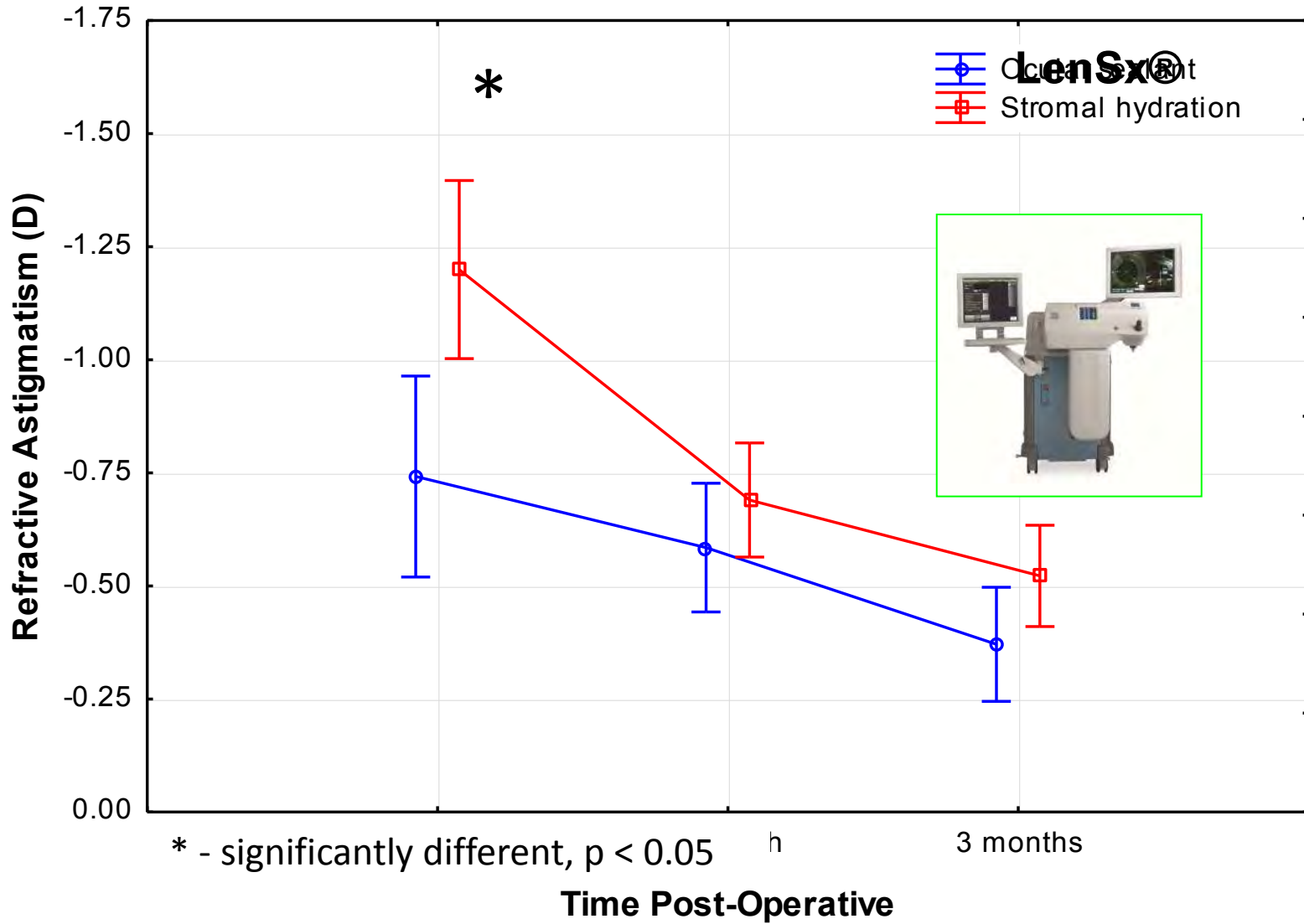


Laser Refractive Cataract Surgery - Arc Incisions

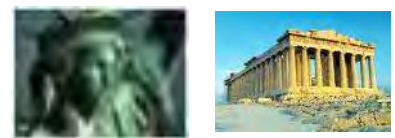
- Fully Customizable and adjustable
- Refractive incisions are no longer an art form. They are a science.
- Place Desired Incisions:
 - EXACT Size
 - EXACT Place
 - EXACT Depth
 - Every Time



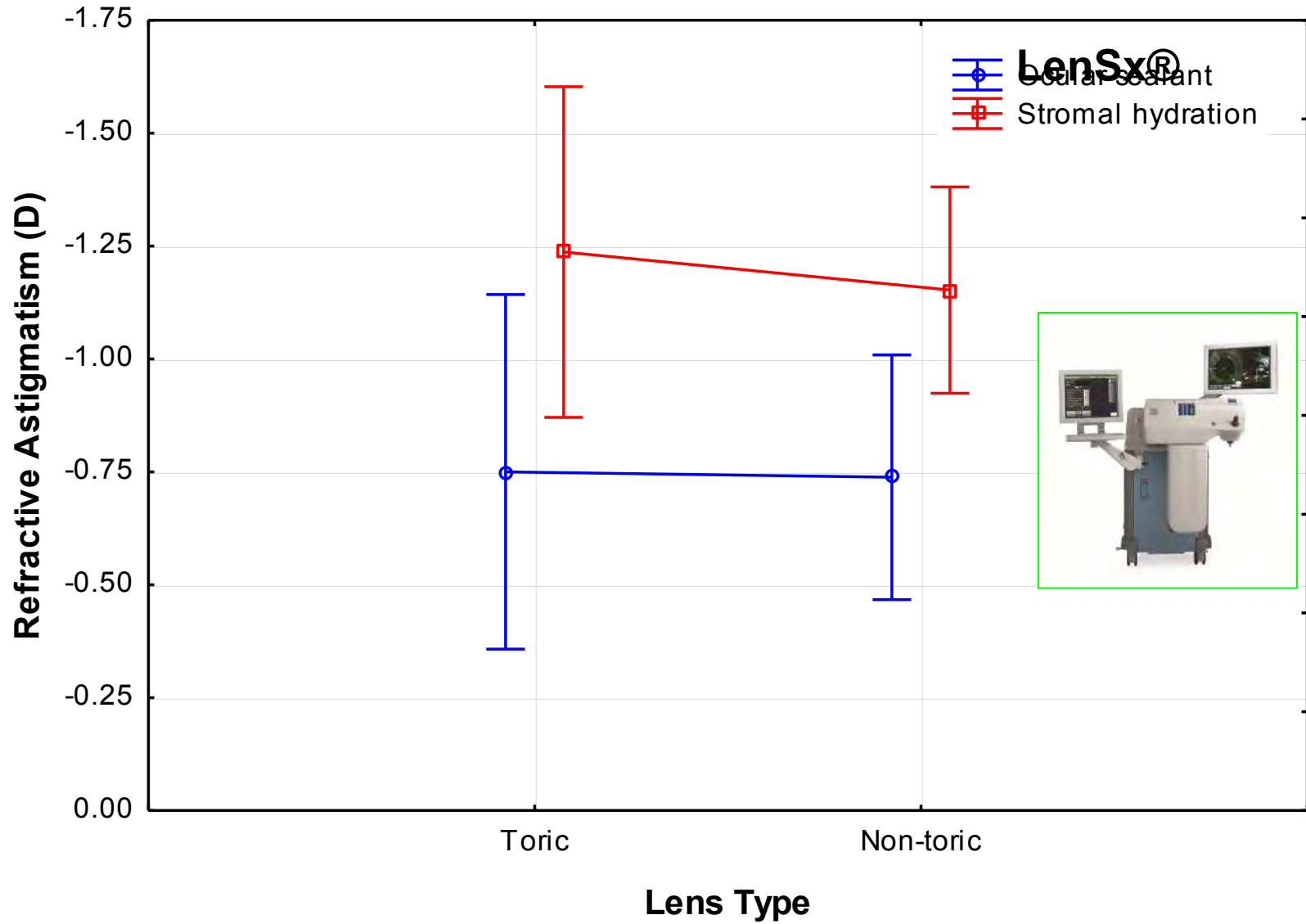
Vertical bars denote 0.95 confidence intervals



* - significantly different, $p < 0.05$ h 3 months



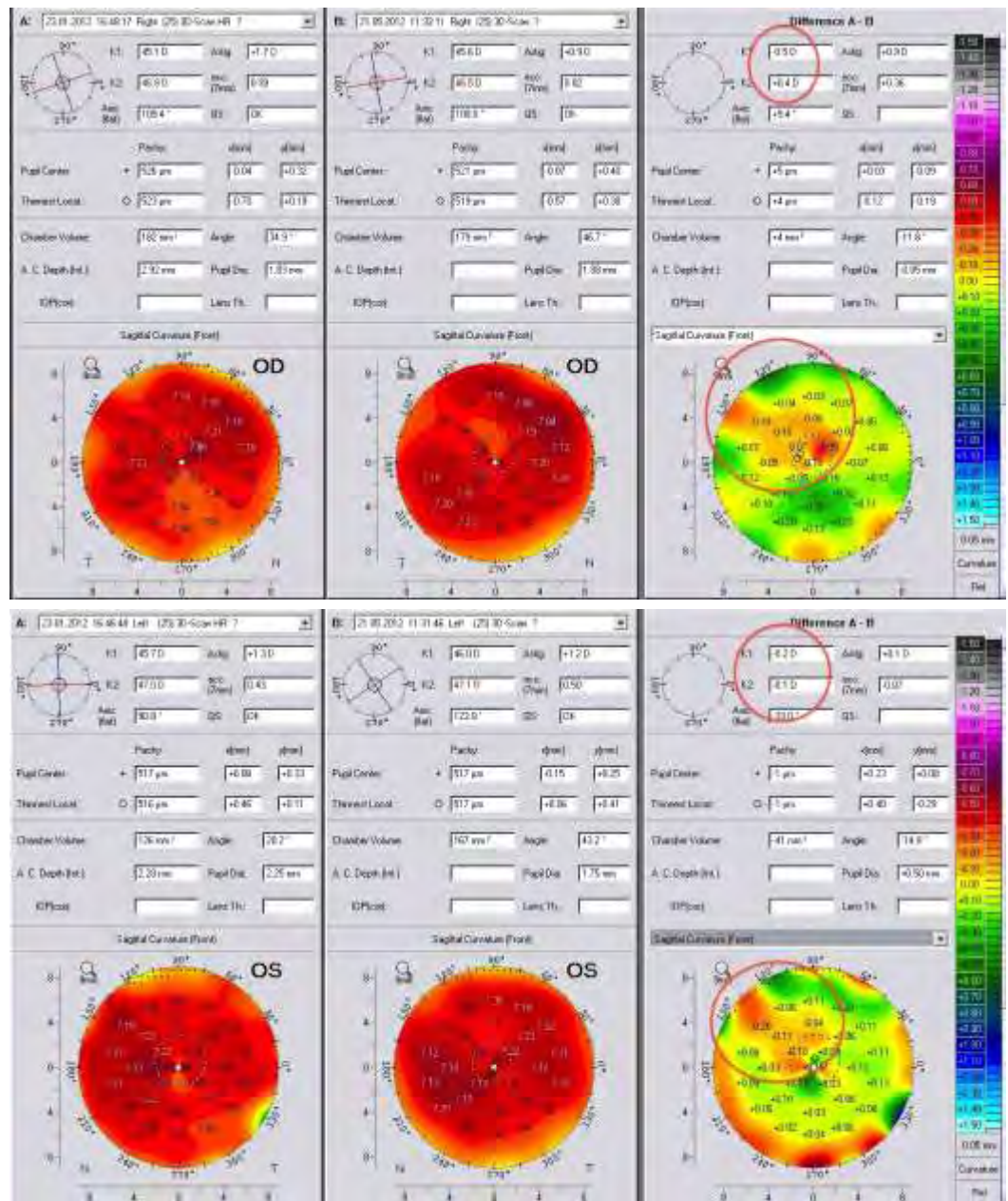
Vertical bars denote 0.95 confidence intervals



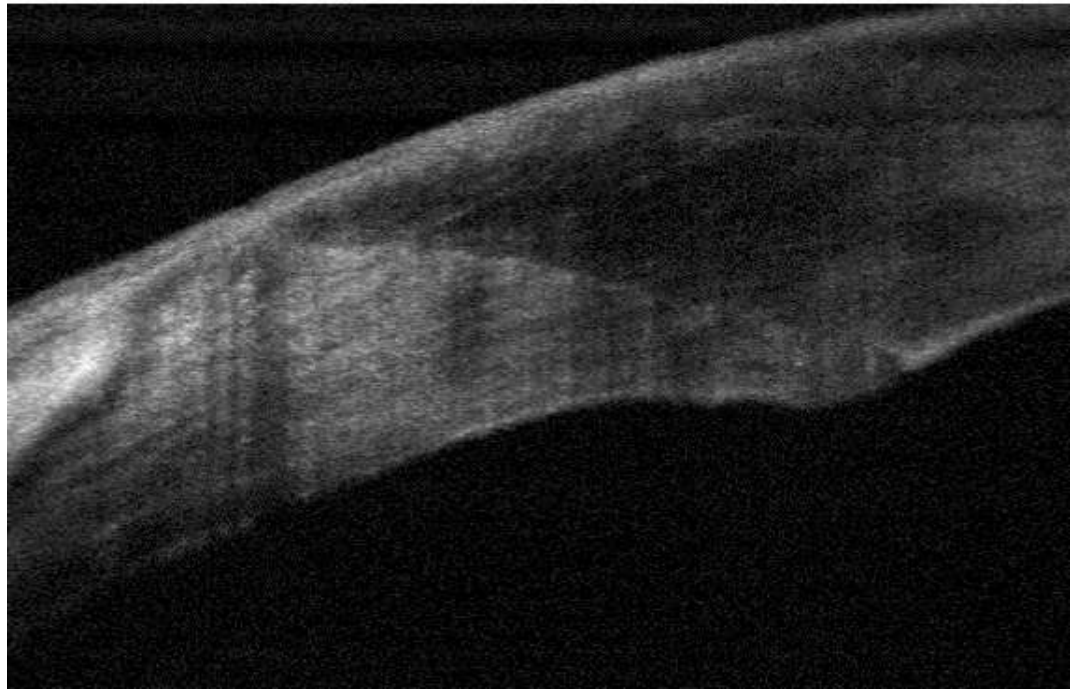
Contralateral eye 2.8mm main incision

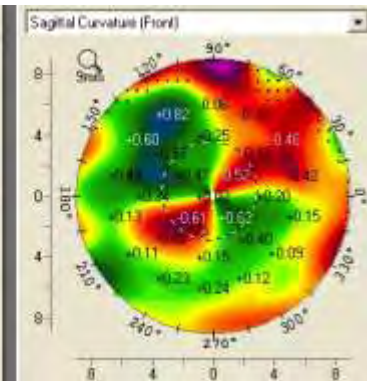
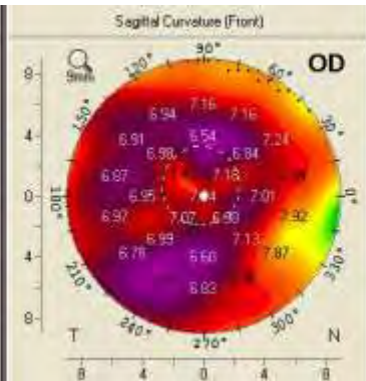
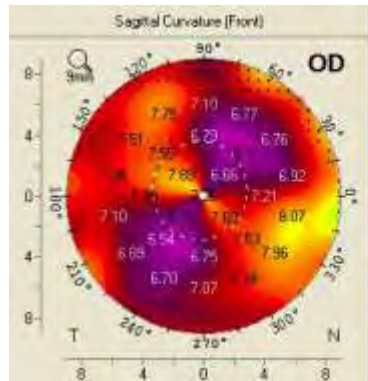
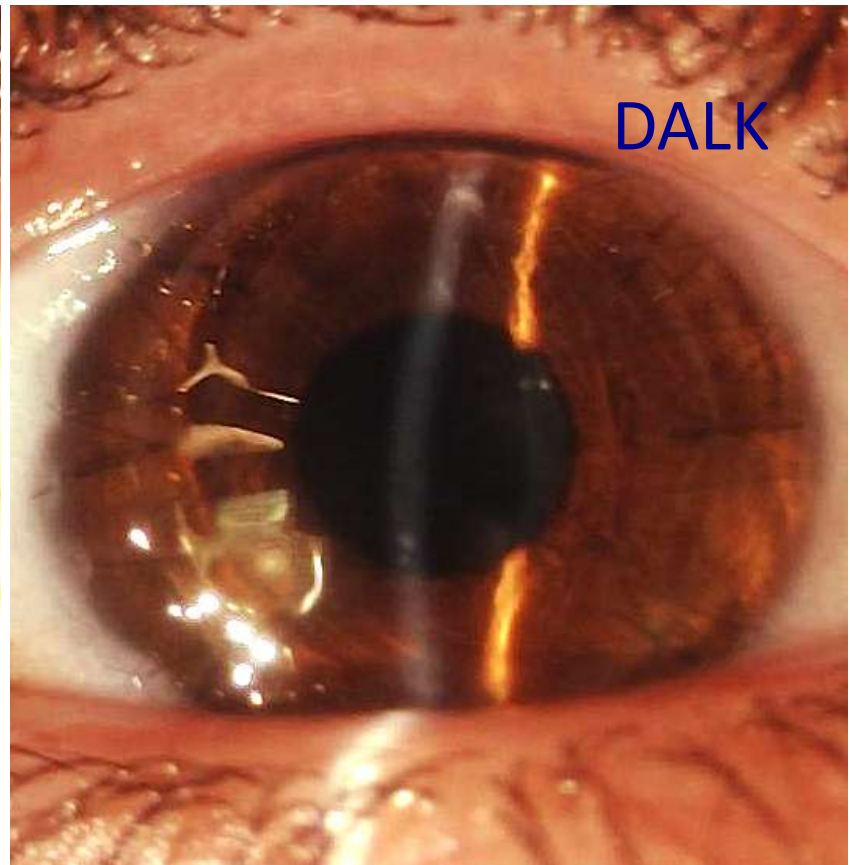
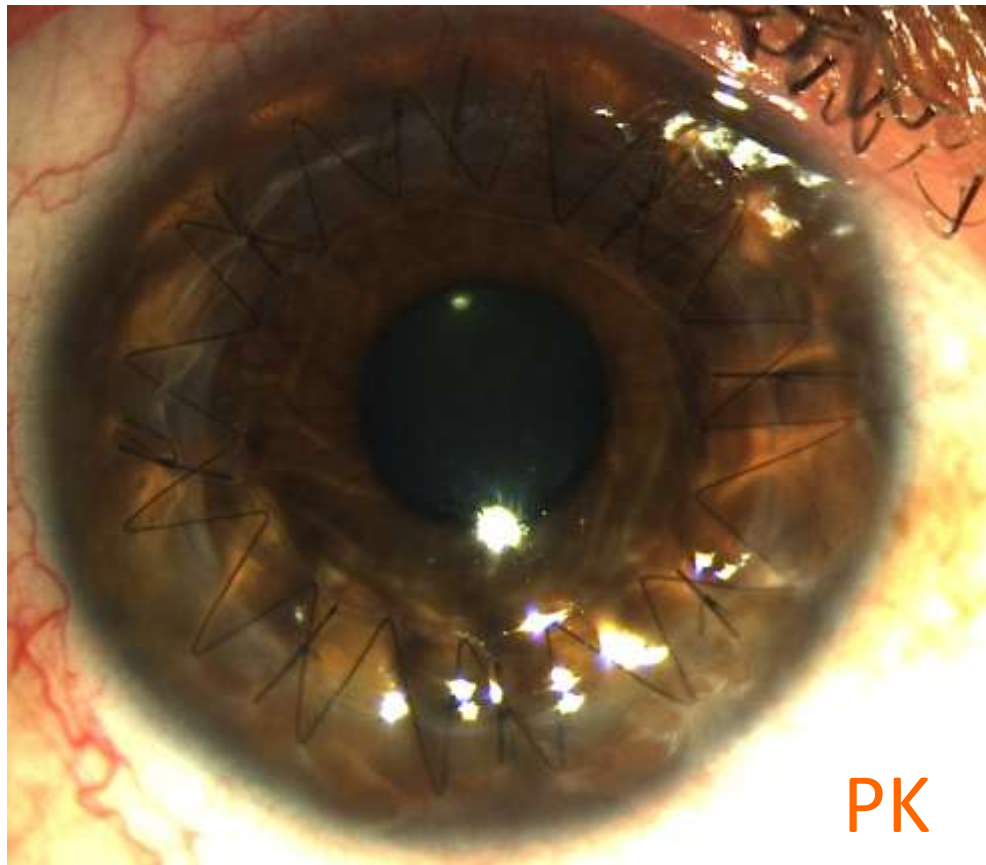
LenSx

Manual

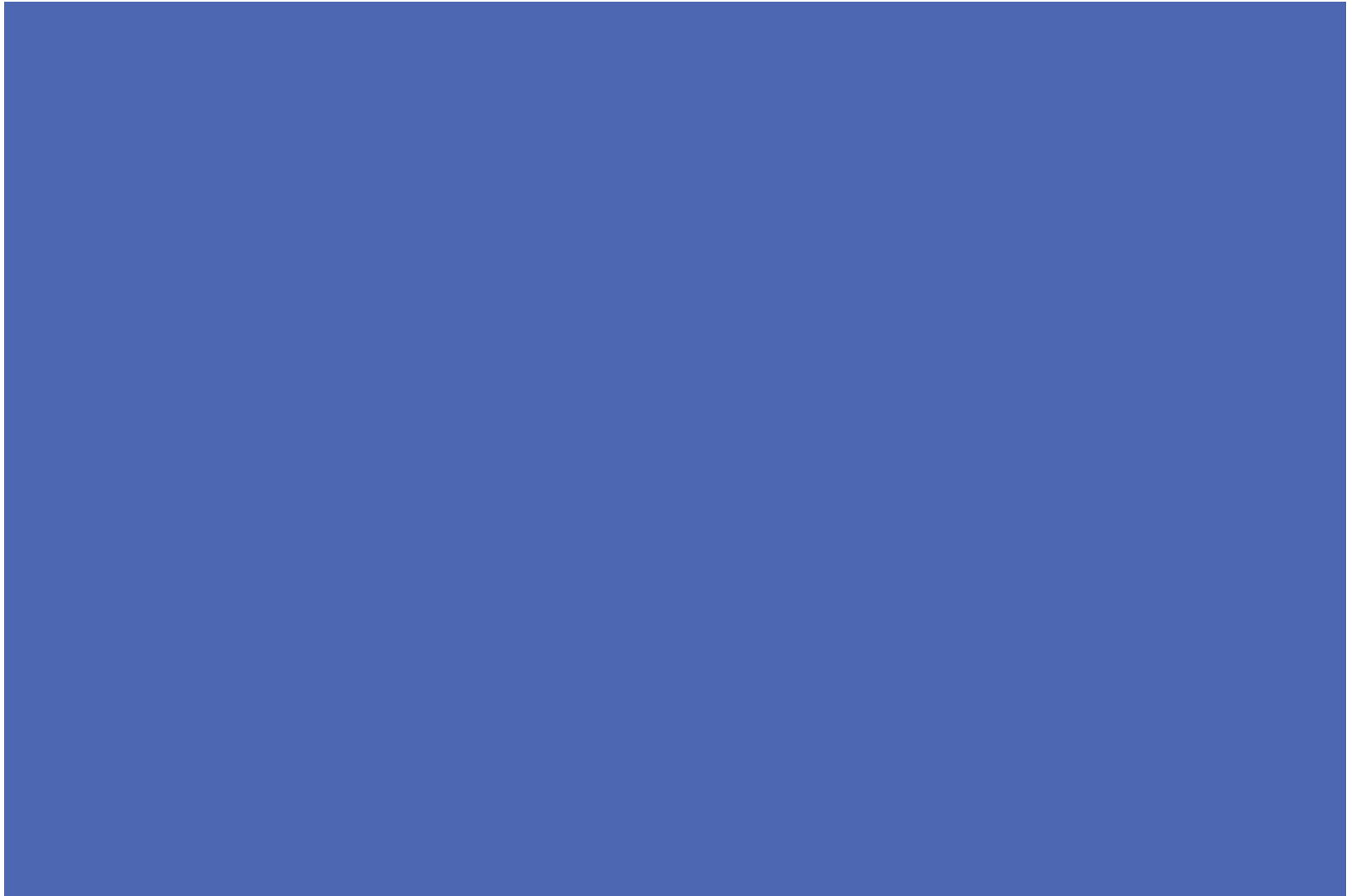


LenSx femto- incisions

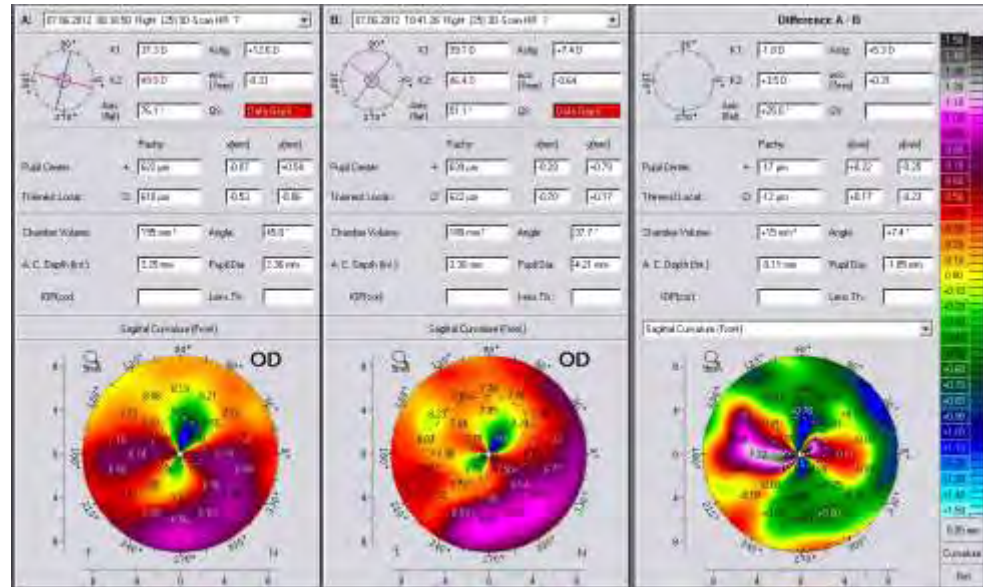
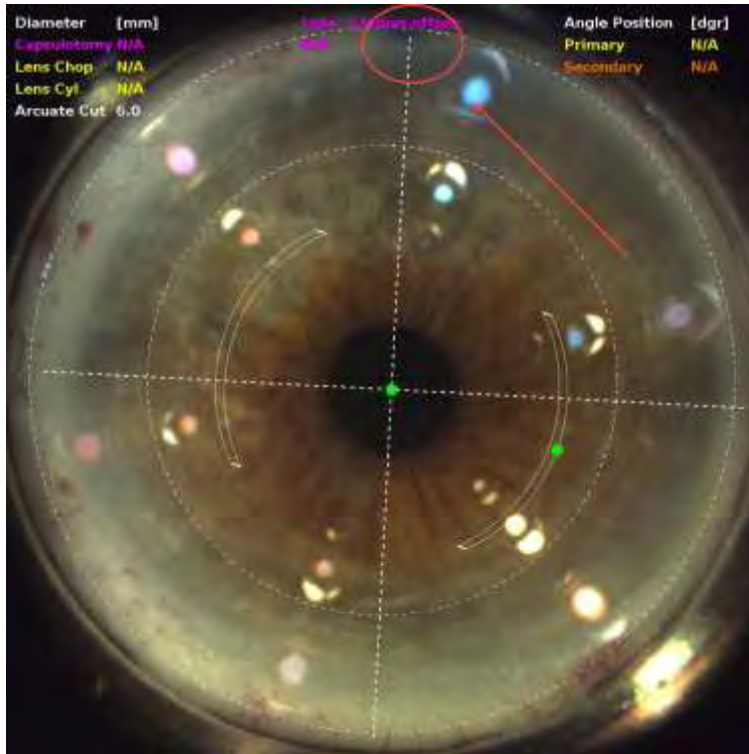




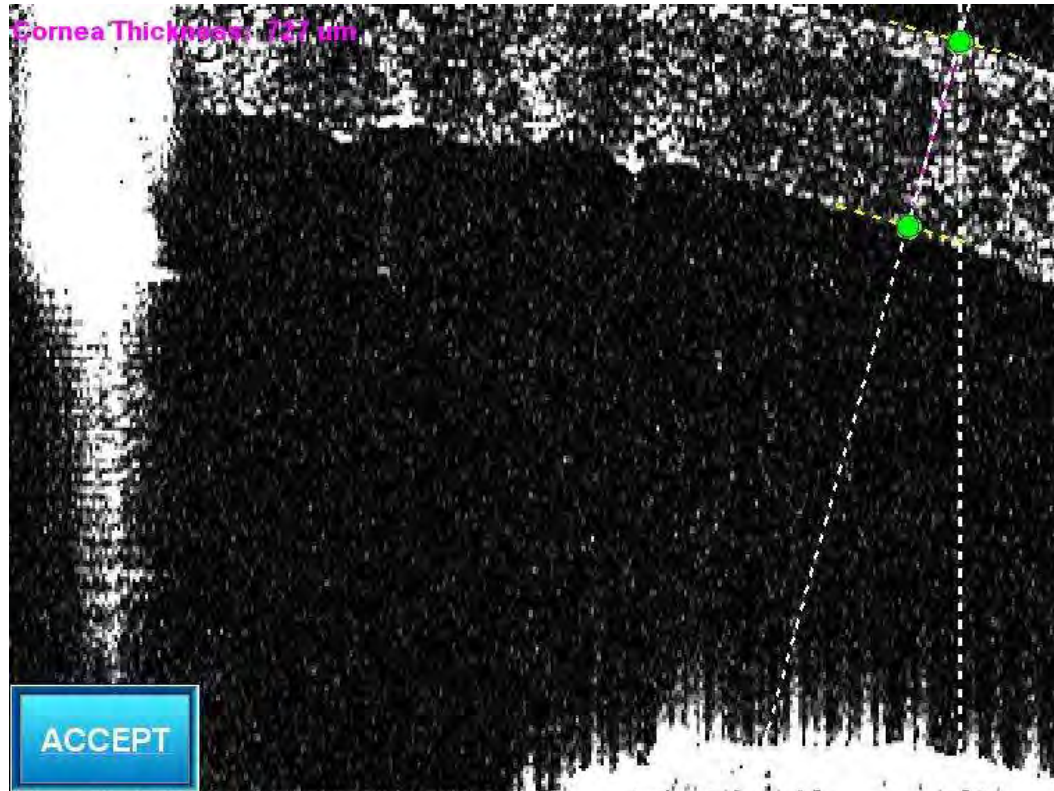
OCT-guided femto-Astigmatic keratotomy



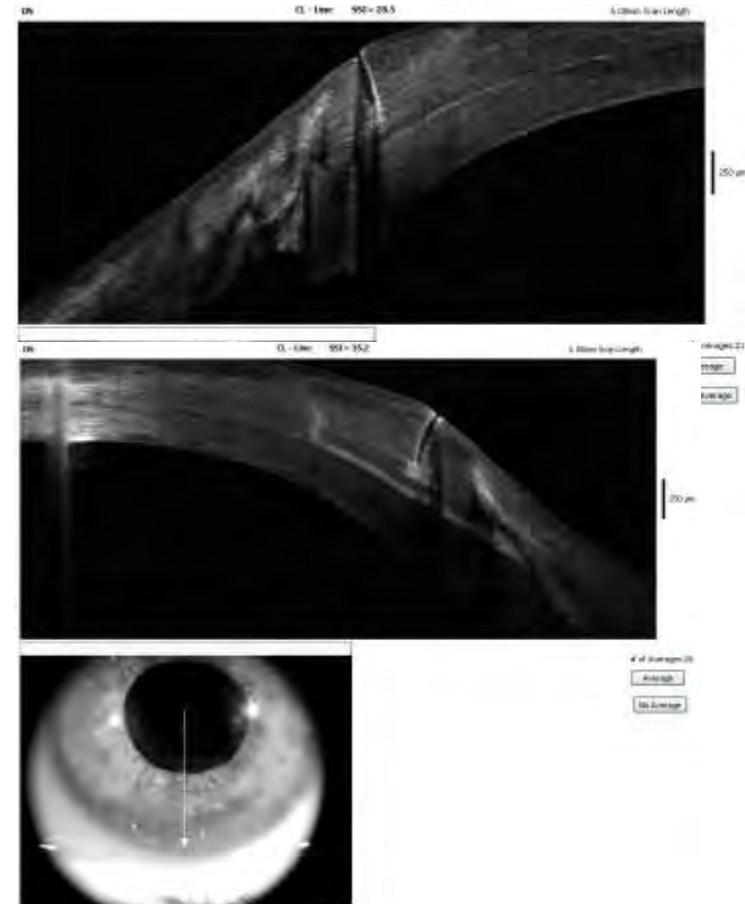
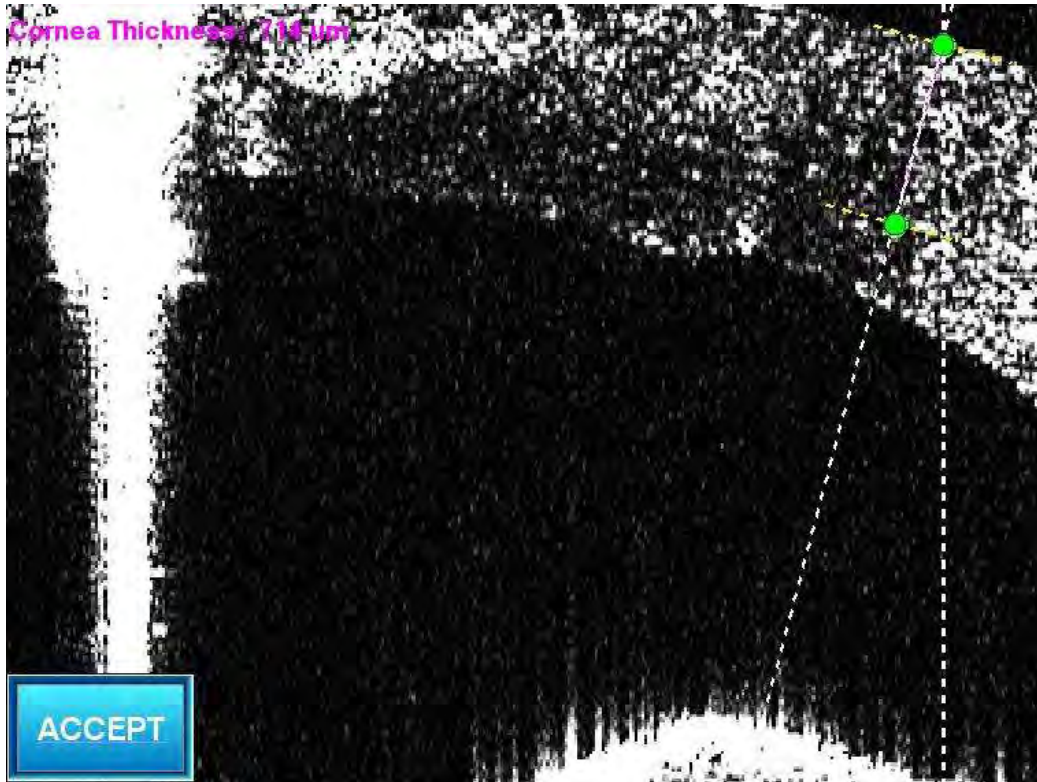
Rotating on 6° clock mark



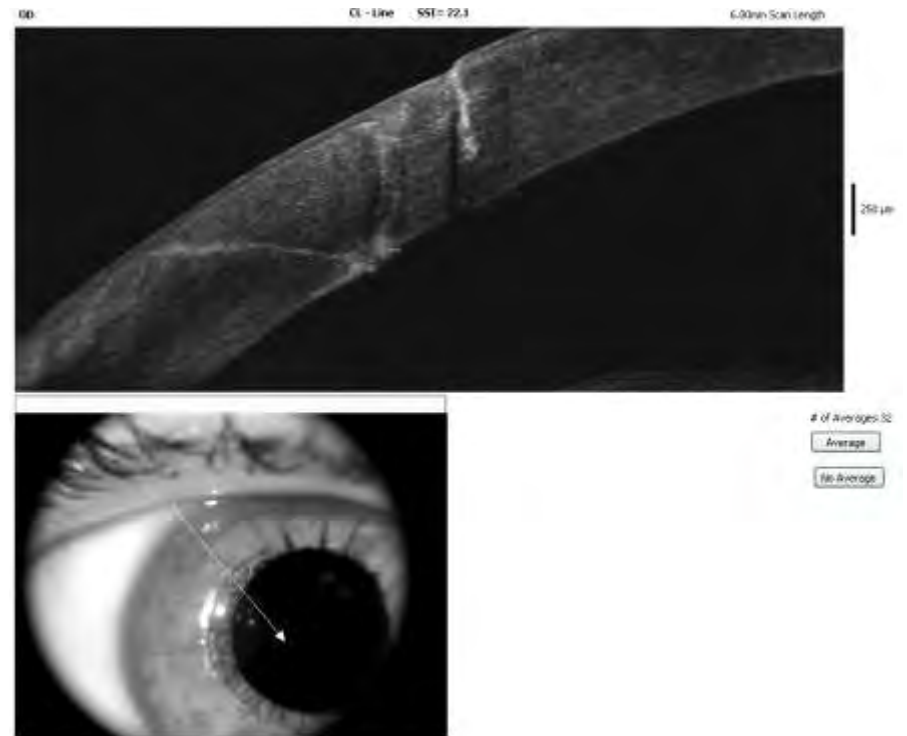
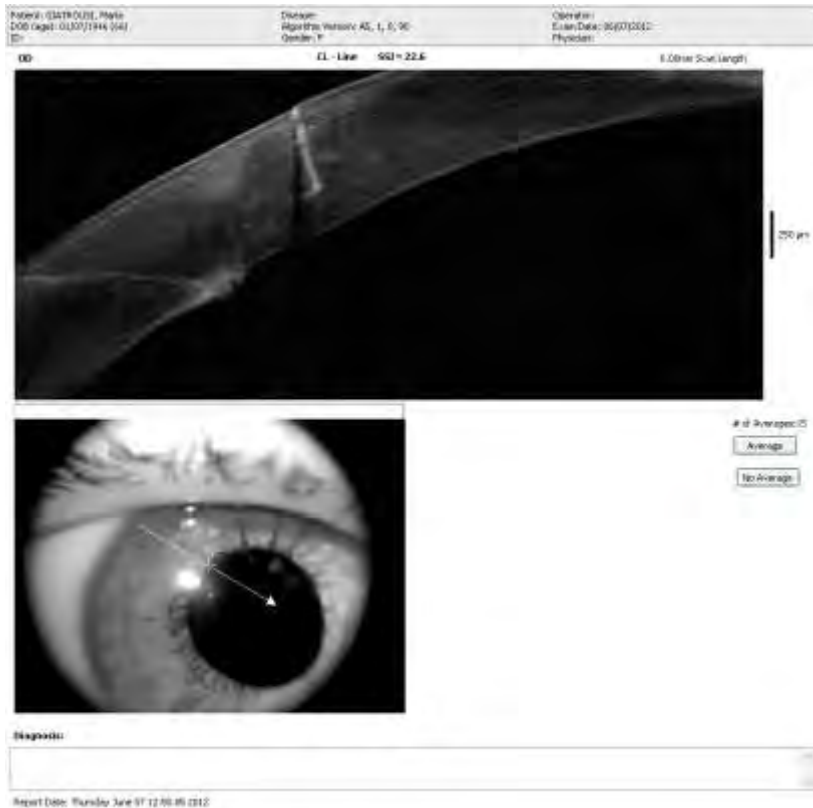
Adjusting thickness/depth



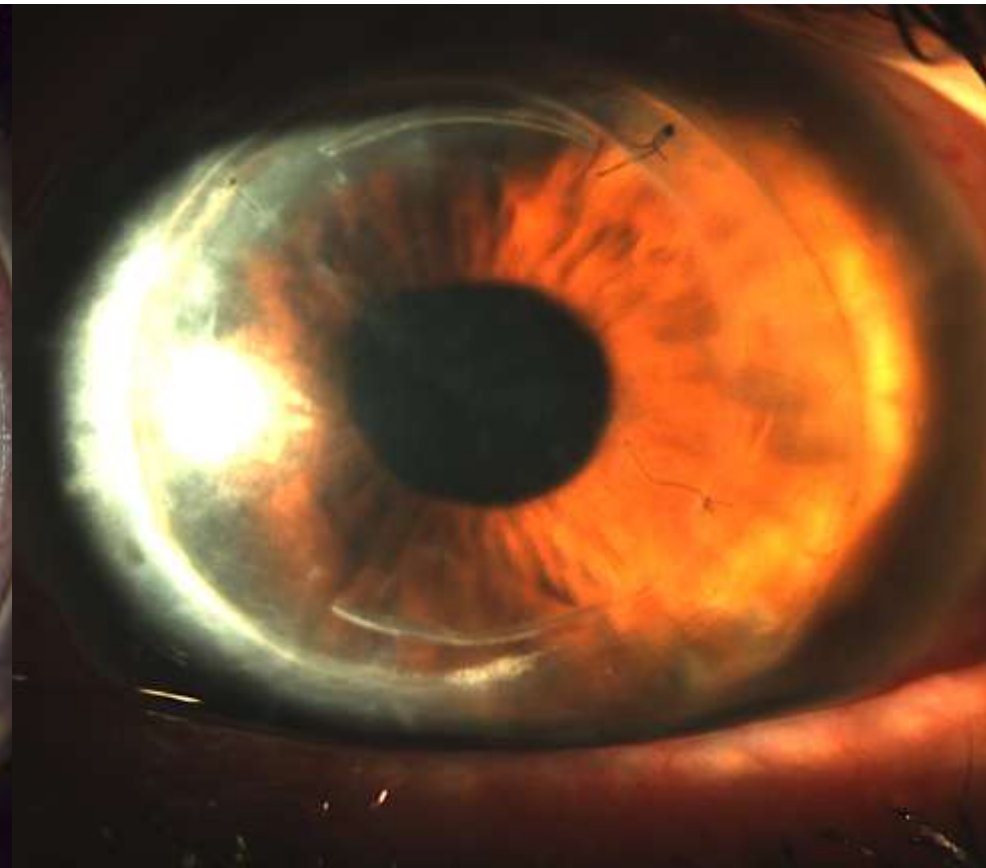
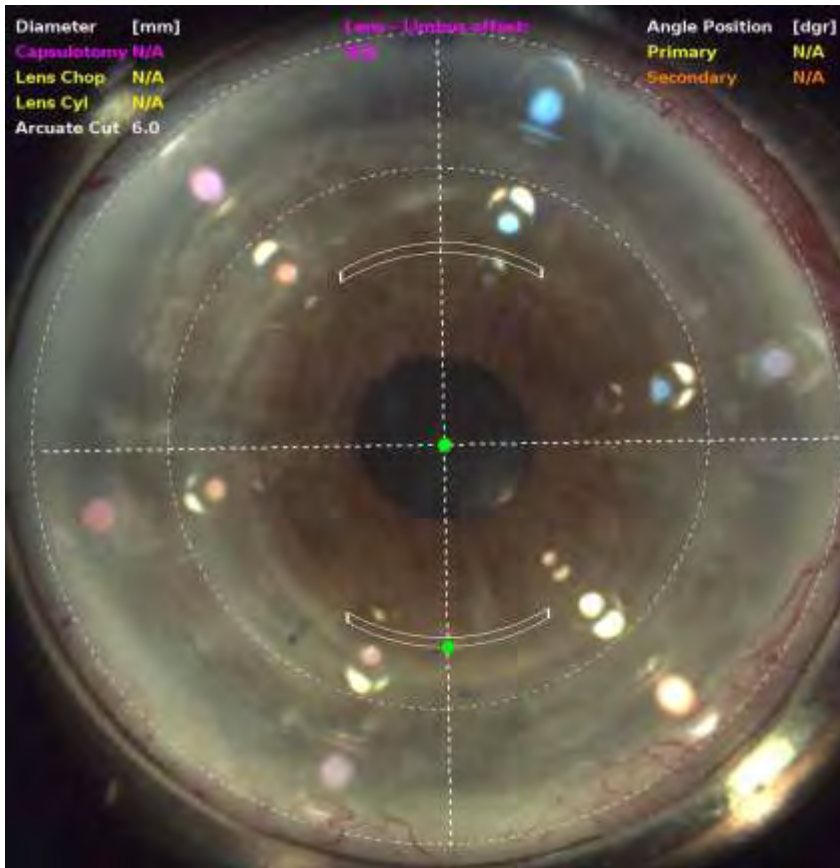
AK in DSAEK



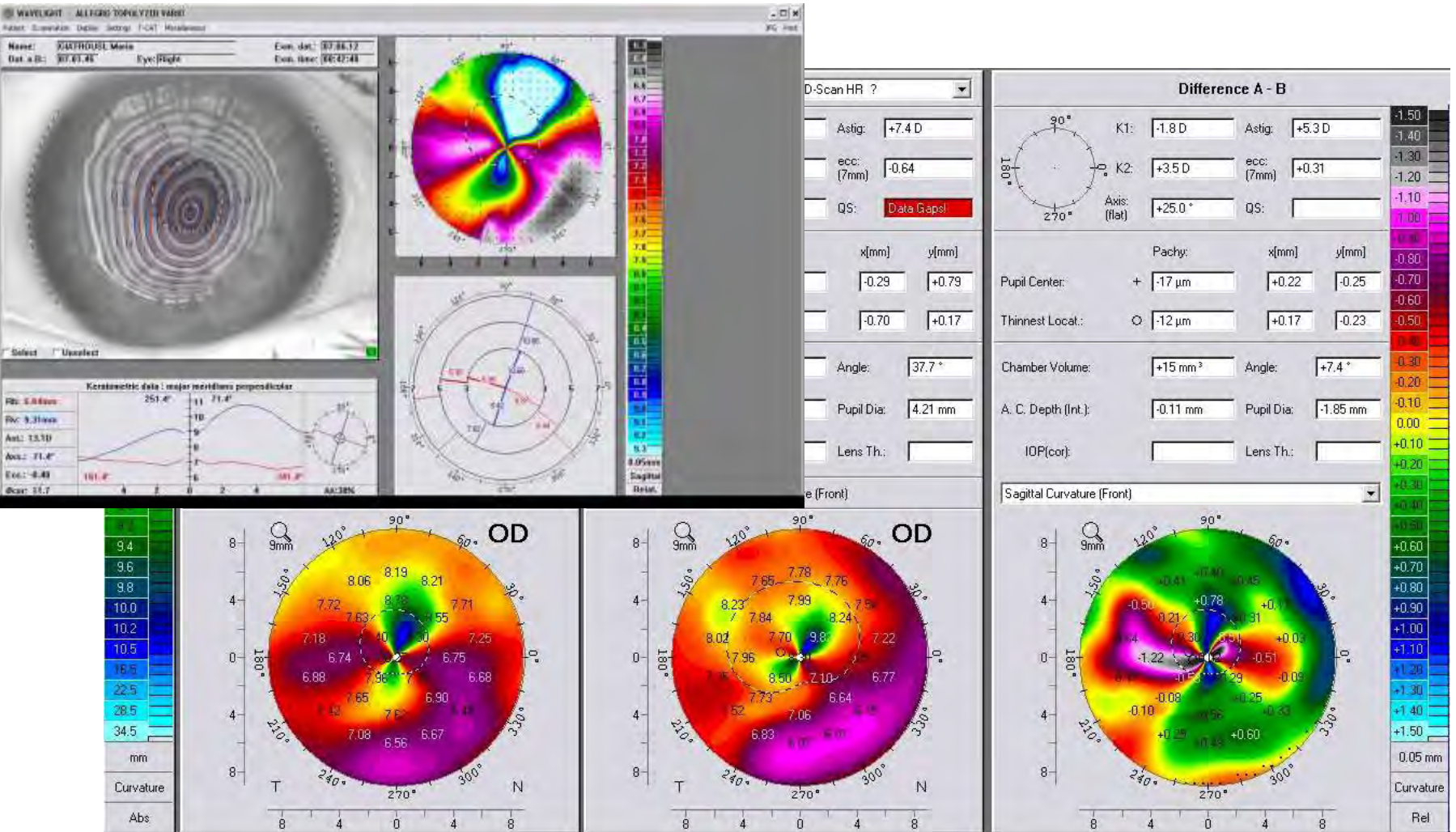
Before and after “opening” with Sinskey



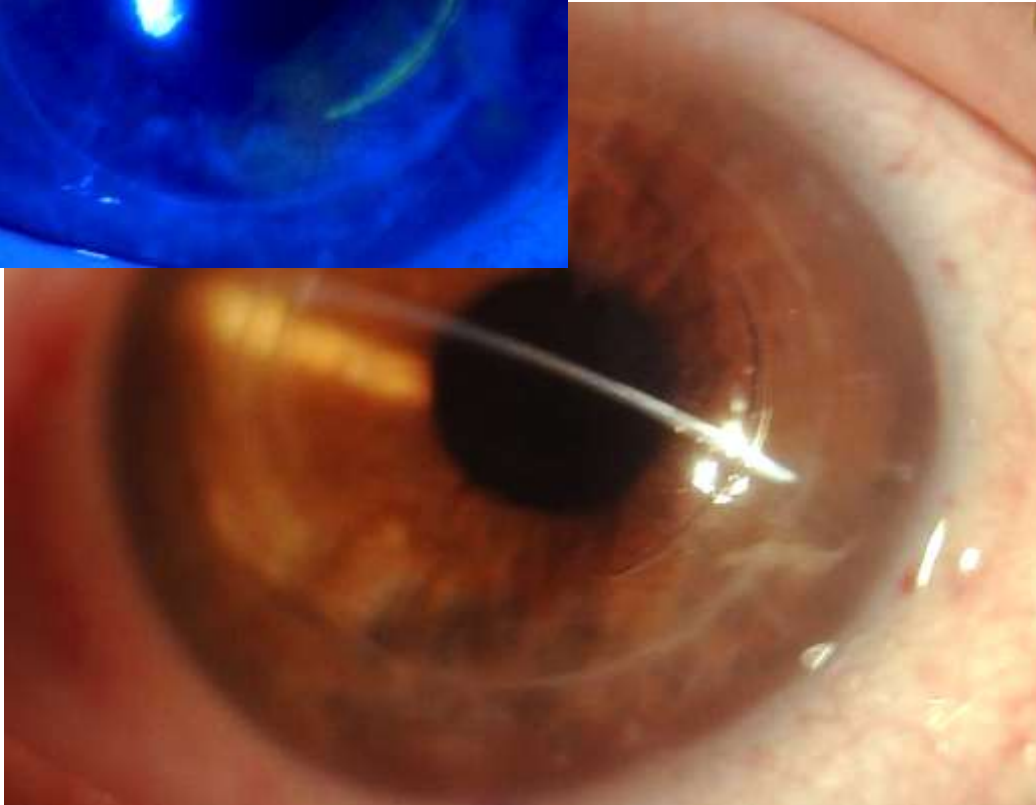
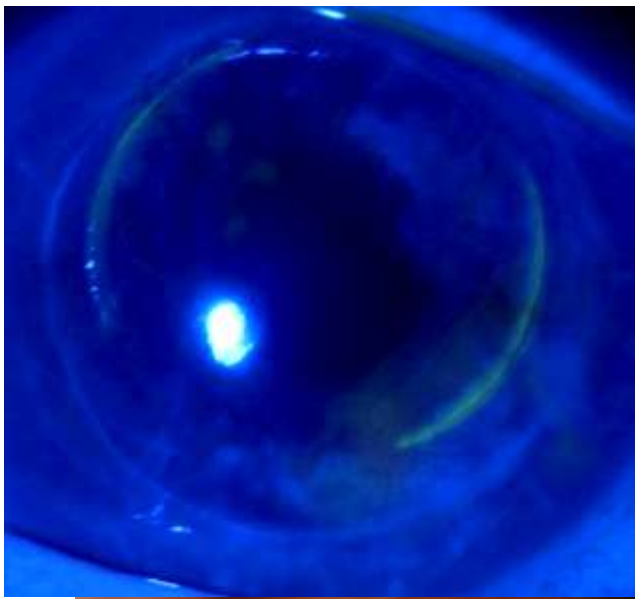
7mm OZ 60 degrees X 2



Before after LenSx AK

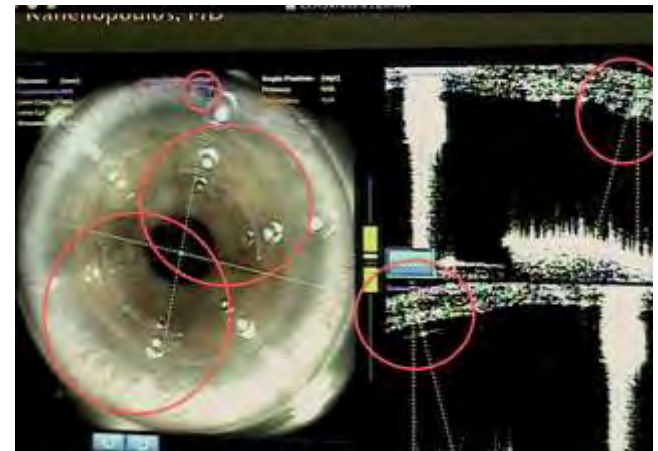


Precision:LenSx AK axis



Conclusions

- LenSx AK a superior tool in OCT-guided bladeless cataract surgery
- The incisions have proven fast, reproducible, customizable, adjustable, precise, and safe in our patient group with:
 - improvements in effective lens position (ELP) due to a precise rhexis, corneal astigmatism and visual acuity that is maintained several months out.
- The evolution of new techniques will make it a routine ever-day procedure



Thank you
www.brilliantvision.com

