ZEISS at 2015 AAO

ZEISS presents innovations that support ophthalmologists in their work

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At the 2015 Annual Meeting of the American Academy of Ophthalmology (AAO) in Las Vegas, ZEISS announces innovations for clinical excellence and practice performance in ophthalmology. In the field of retina and glaucoma, doctors can expand their treatment option based on the innovative ZEISS AngioPlex OCT Angiography that provides three-dimensional representations of the retina and the choroid, eliminating the risk of adverse reactions caused by injections into the eye: Blood vessels can now be displayed using optical coherence tomography (OCT). Furthermore, two new fundus cameras offer more detailed views in the diagnosis and follow-up of eye diseases.

Cataract surgeons can profit from the introduction of the IOLMaster® 700 with SWEPT Source Biometry™ to the U.S. market which is designed to reduce the risk of refractive surprises due to incorrect measurements. It allows doctors to identify irregular geometries of the eye or insufficient fixation during the diagnostic exam.

Additionally, the company reports on the minimally invasive refractive laser vision correction procedure SMILE. More than 300,000 eyes have been treated successfully with the procedure outside of the US. The fourth and last module of the Pre-Market Approval Application (PMA) was filed which is an important step in the FDA approval process.

Innovations for clinical excellence and practice performance in retina and glaucoma diagnosis and therapy

With the non-invasive AngioPlex OCT Angiography technique and two new high resolution fundus imaging solutions, ZEISS provides retina and glaucoma specialists with innovations that help them achieve very good outcomes for their patients.

Blood vessels can now be displayed using optical coherence tomography (OCT)

“We are proud to announce that ZEISS is the first company to bring the exciting new technology of OCT angiography to US customers. Our technology that can be easily integrated into routine clinical practice allows for earlier detection and management of micro-progressions based on ultra-clear 3D vascular images of the retina”, says Dr. Ludwin Monz, Chief Executive Officer of
ZEISS AngioPlex OCT Angiography assists physicians in displaying the blood vessels of the patient’s retina without having to inject fluorescent dye. The retina and choroid can be examined with the aid of optical coherence tomography (OCT) non-invasively in three-dimensional representations. This facilitates clinical decisions for physicians. AngioPlex is built on the proven CIRRUS platform and can thus easily be incorporated into clinical practice. The fast, single scan acquisition is no more difficult than a standard CIRRUS scan. “We hope the new non-invasive OCT angiography will become a routine imaging procedure in clinical practice”, says Dr. Ludwin Monz. It enables doctors to assess retinal microvasculature within the current workflow without the risks of dye injection: “This constitutes a real step forward for physicians and patients in non-invasive diagnosis of the eye”, Dr. Monz continues.

“AngioPlex OCT angiography will revolutionize the way we care for our patients. For diseases of the macula, AngioPlex will replace fluorescein and indocyanine green angiography because it is faster, cheaper, safer, non-invasive, doesn’t require dilation, and provides all the advantages of traditional OCT imaging while giving us superior images of the retinal and choroidal microvasculature”, says Dr. Philip J. Rosenfeld, Professor of Ophthalmology from the Bascom Palmer Eye Institute. He continues: “We can also segment different macular layers for better depth localization of diseases compared with angiography. Plus, in just a few seconds, it can be performed on the CIRRUS HD-OCT platform, and AngioPlex, along with FastTrac live tracking, provides motion free images for most patients, even the poor fixators. The potential for early detection and enhancing our treatment of microvascular diseases of the macula is tremendous. It’s an exciting time to be studying and treating retinal diseases in ophthalmology.”

ZEISS AngioPlex OCT Angiography is the first such technology that has received 510(k) clearance from the U.S. Food and Drug Administration (FDA).

New fundus cameras with brilliant image quality for especially fast and reliable diagnosis

A more detailed analysis of the back of the eye is made possible by two new ZEISS fundus cameras VISUCAM 224 and VISUCAM 524 for single MD, OD and group practices. Backed by an internal 24 MP sensor, an improved optical system and enhanced post-processing, the fundus cameras combine ease of use and brilliant pictures for fast and informative imaging. Both new VISUCAM models include Fundus Autofluorescence (FAF) as a standard feature to support current and emerging therapeutic management options for dry AMD. Other standard modalities such as color and red-free enhance the visualization of different anatomical features. Thanks to superior image quality, pictures taken by the new cameras also facilitate patient education.

The new VISUCAM 524 will also offer Fluorescein Angiography and optional Indocyanine Green Angiography for the assessment of vascular blood flow and leakage.

VISUCAM 224 / 524 is available in the US, Canada, the European Union and throughout Asia.

Reduce the risk of refractive surprises: IOLMaster 700 offers OCT imaging across the entire length
of the eye

ZEISS has established a gold standard in cataract diagnostics with the IOLMaster – the implantation of intraocular lenses (IOLs) has become a safe and routine procedure for doctors. Up until now, however, even a flawless operation and a high-quality lens could have led to unsatisfactory results, if irregular eye geometries or inadequate fixation were overlooked. The IOLMaster 700 was designed to help overcome this challenge. One highlight of this year’s show is the introduction of the IOLMaster 700 to the US. Apart from optical biometry, this device also offers OCT imaging across the entire length of the eye. The IOLMaster 700 identifies irregular geometries of the eye or insufficient fixation during the diagnostic exam. It enables cataract surgeons to view the complete longitudinal section of the eye, from the cornea to the retina. Irregular eye geometries, for example tilt or decentration of the crystalline lens axis, are therefore easier to identify. It is expected that this will help to reduce the risk of refractive surprises due to incorrect measurements. “The new IOLMaster 700 is an exciting addition to my practice. Not only does it bring impressive new technology which provides valuable new information, but it also improves my cataract workflow by being even faster and penetrating more cataracts than the previous generation. All of this is important to optimizing the refractive outcomes for my patients,” says Dr. Daniel H. Chang, MD, Cataract and Refractive Surgeon at the Empire Eye & Laser Center in Bakersfield, California.

“The new IOLMaster 700 enables surgeons to better detect unusual geometries of the eye and also gives support in case of poor fixators”, says Dr. Ludwin Monz, Chief Executive Officer of Carl Zeiss Meditec AG. The data from thousands of successful surgeries are incorporated in the development of the product. The IOLMaster 700 is fully compatible with previous versions and the user can leverage the complete database of the User Group of Laser Interference Biometry (ULIB). This database contains the optimized lens constants of more than 270 IOL models and is based on more than 50,000 cataract operations.

The unique "telecentric keratometry" allows particularly robust and reproducible measurement of the corneal surface. ZEISS is the only company that offers a biometer with telecentric, and thus distance-independent, keratometry. Its smart optical configuration allows robust and repeatable measurements – especially with restless patients – for excellent keratometry measurements.

Imaging of the fovea in the macula lutea also allows physicians to check for correct fixation. Compared with previous procedures, in which the measurement result was derived from an A scan curve, the image-based measurement with the IOLMaster 700 brings both physician and patient added safety, as the expected refractive outcome can be more reliably predicted.

In the new Haigis Suite, the ZEISS IOLMaster 700 provides the first on-board all-in-one solution for toric IOL power calculation, eliminating the need to key-in data into the IOL vendors’ online toric power calculation tools.

A surgical microscope for primary health care

The OPMI LUMERA® 300 from ZEISS that will also be displayed at the ZEISS booth at 2015 AAO brings the advantages of the OPMI LUMERA series to the routine segment. The device
offers an excellent price/performance ratio and requires a lower light intensity. This makes treatment less stressful for patients. In ophthalmic surgery, physicians benefit from the renowned quality of optics and illumination of the OPMI LUMERA product range. “With this surgical microscope ZEISS is expanding its product range for primary health care, particularly for customers in the fast-growing Asian and Latin American markets,” says Dr Ludwin Monz, Chief Executive of Carl Zeiss Meditec AG.

Minimally invasive procedure for corneal refractive correction: Experience with more than 300,000 eyes

Only a few years after its international introduction SMILE is on the way to become established as the 3rd generation of laser vision correction in addition to PRK and LASIK. Since the initial launch of the SMILE procedure from ZEISS in 2011 in Europe and other markets, more than 300,000 eyes have been treated successfully with this method, the first and to date only minimally invasive procedure for refractive laser correction. By now more than 350 international clinics and practices with more than 700 refractive surgeons are performing SMILE and offering this clinical procedure to their patients. Some surgeons have already done more than 10,000 cases. “With SMILE we have introduced a procedure to corneal refractive surgery that provides great benefits with small incision surgery. The cornea of the eye remains largely intact, accompanied by a high degree of predictability of the correction. The results are convincing more and more physicians and patients worldwide,” says Dr. Ludwin Monz.

The method has established itself in key markets such as Europe, China and India but not yet in the U.S. To evaluate the safety and effectiveness of the VisuMax® femtosecond laser lenticule removal procedure in the US, a first comprehensive study of spherical myopia has been completed – more than 300 eyes have been treated across five U.S. study sites. As part of a second study, physicians at five clinics have enrolled the first 100 myopia patients with astigmatism.

Most recently ReLEx SMILE has been approved in Canada. In the USA the fourth and last module of Pre-Market Approval Application was filed at the end of October.

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