



Michael C Knorz

Today's special: RLE with wavefront-guided LASIK

Devon Schuyler
in Las Vegas

OFFERING pseudophakic surgery as part of a "package" with wavefront-guided LASIK is a good recipe for high patient satisfaction, according to Michael C Knorz MD, who described this approach in a presentation during the refractive surgery specialty day at the annual meeting of the AAO.

"In general, the success rate of multifocal IOLs can be greatly enhanced by offering them as a package with wavefront-guided LASIK. Without LASIK, spectacle independence might be achieved in about 85 per cent to 90 per cent of patients. With LASIK, success rates are about 99 per cent. Adding multifocal IOLs to your practice should therefore include the potential for LASIK enhancements provided either by the surgeon himself or a partnering LASIK centre," Dr Knorz told *EuroTimes*.

Dr Knorz, of the FreeVis LASIK Center at University Medical Center in Mannheim, Germany, said that most candidates should have RLE or cataract surgery first, followed by LASIK if any residual ametropia is present after the IOL implantation. In order to prevent the incision from opening during LASIK flap creation, the interval between the two procedures should be at least three months for patients receiving a posterior limbal or scleral incision, and at least three to six months for those receiving a clear

corneal incision. If there is any doubt about wound stability, the surgeon should use surface ablation techniques.

For patients with pre-existing high astigmatism, defined as more than 2 D, the surgeon first creates a flap – which is not elevated – using the femtosecond laser (IntraLase). This reduces the waiting time between the lens implant and the LASIK. Next, the surgeon implants the intraocular lens. Finally, three or four weeks later, the surgeon can lift the flap and reshape the cornea if any residual ametropia is present. The IOL can be either monofocal or multifocal.

"These IOLs are designed to provide spectacle independency, but have a few side-effects such as haloes and glare at night. They are, therefore, indicated only in patients who do not want to use glasses."

He said that presbyopic hyperopes are ideal candidates, presbyopic high myopes are good candidates, and low myopes are poor candidates.

He uses three multifocal IOLs – the ReZoom (AMO), the ReSTOR (Alcon), and the Tecnis aspheric multifocal (AMO) – which he mixes and matches depending on the patient's requirements. For patients who require excellent distance and intermediate vision, he recommends placing the ReZoom in the dominant eye. If the patient has good near vision after this procedure, a second

ReZoom is used. If the patient reports good intermediate vision but some difficulties at near, a Tecnis multifocal IOL is used in the second eye. In countries where that IOL is not available he recommends using a ReSTOR IOL in the non-dominant eye.

For the LASIK portion of the procedure, Dr Knorz uses the Visx STAR S4 IR Excimer Laser System (AMO). He said that not only does customised LASIK using this system provide a perfect match between the measured and the treated area, it also allows for more precise treatment of astigmatism and reduction of higher-order aberrations.

When calculating the customised treatment, he said, it is mandatory to compare the WWaveScan refraction with the manifest refraction. If there are differences of more than 0.5 D between the manifest sphere and the wavefront sphere, the surgeon should use the "physician adjustment" feature to adjust the wavefront sphere to the manifest sphere. If the software does not permit this, wavefront-guided treatment should not be performed.

Surgeons who are new to this procedure or unsure of the best way to proceed should always use the PreVue lens, which allows the patient to view an approximation of the potential corrected vision prior to treatment.

Dr Knorz reported his results in a series of 22 eyes in 18 patients with an average age of 54 years. He performed RLE or cataract

surgery first in 13 eyes, and created the flap first in nine eyes. He used multifocal lenses in all eyes: 18 received the Tecnis aspheric multifocal lens, three the ReSTOR lens, and one the ReZoom lens.

He reported that the average spherical error dropped from 3.71 to 0.85 D after implanting the IOL, and that it dropped further – to just 0.12 D – after LASIK. Likewise, the average cylindrical error dropped from 2.04 to 1.04 D with IOL implantation, and to 0.23 D after LASIK. The customised LASIK also did not change higher-order aberrations significantly. Coma changed from 0.11 to 0.14 RMS, trefoil remained unchanged at 0.15 RMS, and spherical aberration changed from 0.11 to 0.09 RMS. Follow-up was at least three months in all eyes. None of the patients lost two or more lines of spectacle-corrected visual acuity.

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