

ABSTRACTS

of the International Scientific Symposium *What's New in Refractive Eye Surgery*

THE ROLE OF FEMTOSECOND LASER IN REFRACTIVE SURGERY ON THE LENS

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Femtosecond laser assisted cataract surgery offers the ophthalmologist a new option to improve the results of cataract surgery. The potential benefits of laser assisted cataract surgery are efficacy and safety. Efficacy enables more predictable and accurate capsulotomy, more consistent corneal incision construction, and better refractive results. Advances in so called premium intraocular lenses such as aspheric surfaces, toricity, multifocality and ability to be implanted through smaller incisions provide a better visual outcome.

In order to benefit from the advanced features, it is necessary to position the IOL more precisely in the capsular bag and the Femtosecond laser provides this. Safety is because of less ultrasound energy, less risk of capsule tears, less incision leakage and astigmatism.

However, the potential benefits of this new technique still need to be proved in actual practice. The femtosecond laser technology is easy to learn and it is possible to make a precisely shaped capsulotomy with the desired diameter in most cases. Femto laser nuclear fragmentation facilitates phacoemulsification and reduce ultrasound power however it is not possible to fragment hard cataracts. The use of femto second laser in patients with small pupil is only possible by the help of pupil dilating devices which on the other hand make the operation more complicated thus

jeopardizing the safety of the procedure. It is possible to do precise corneal relaxing incisions to correct astigmatism.

Keywords: femtosecond laser; cataract surgery; refractive surgery.

ADD-ON LENSES IN THE TREATMENT OF RESIDUAL REFRACTIVE ERROR

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Add-on lenses are used in patients who had already undergone cataract surgery with monofocal intraocular lens (IOL) implantation (pseudophakic eyes!) but need an improvement of their vision in two ways: a) due to the residual refractive error after cataract surgery, which can be spherical or astigmatism, patients must wear glasses for clear distance vision, or b) would like to be independent of glasses for near and thus need an implantation of multifocal add-on lens over the already existing monofocal IOL. The implantation is a simple atraumatic procedure carried out under topical anaesthesia through a sclero-corneal incision. In case of astigmatism correction, the add-on IOL is oriented along the steepest corneal meridian with the aid of corneal topographical monitoring and it provides lasting correction of the residual astigmatism. In case of spherical refractive error in pseudophakic eyes, add-on lenses can equally correct the spherical error. Add-on multifocal lens implant can restore near vision in a similar manner to a multifocal lens implanted in the first instance at the time of cataract surgery. This allows patients to 'upgrade' the function of their monofocal lens at a later date to enable them vision comparable to patients which have had a multifocal lens implant as first procedure. Importantly, the procedure of add-on lenses implantation is a reversible procedure so the lens can be easily explanted for any possible reason (e.g. patient cannot get used to multifocality). The author presented her personal experience with Add-on lens implantation for both previously mentioned indications.

Keywords: add-on lenses; residual refractive error; postoperative astigmatism; multifocal intraocular lenses.