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1 year experience of fs-laser-assisted cataract surgery: quality, complications, outcomes

Session Details

Session Title: Femtolasar Cataract Surgery
 Session Date/Time: Tuesday 08/10/2013 | 14:00-16:15
 Paper Time: 14:15
 Venue: Auditorium (First Floor)
 First Author: : P.Hoffmann *GERMANY*
 Co Author(s) : C. Lindemann

Abstract Details

Purpose:

To evaluate process quality and clinical outcomes of fs-laser-assisted cataract surgery (LACS) compared to conventional phacoemulsification

Setting:

Private eye clinic in Germany

Methods:

Between July 2012 and March 2013, 266 eyes underwent LACS with the Technolas Victus Laser Platform by two different surgeons. All eyes received dual optical biometry, dual topography and raytracing IOL calculation. 45 eyes received simultaneous arcuate keratotomies for reduction of astigmatism. All intraoperative parameters of laser and phaco machine were monitored. Postoperatively, visual acuity, refraction, aberrometry (natural mesopic pupil), topography, optical pachymetry, axial and lateral IOL position and tilt were examined. All procedures were carried out with coaxial microphaco using incision widths between 1.8 and 2.3 mm. Centration of the treatment zone considered the angle θ . A cohort of 100 eyes operated manually with the same IOLs and diagnostic procedures acted as a control group. For correction of corneal astigmatism between 1 and 2 dpt, a new AK nomogram was developed.

Results:

Median phaco time was reduced from 2.3 s to 1.2 s equivalent to a saving of 6.6 J. No reduction was achieved in nucleus removal time (72s) and BSS consumption (77 ml). Laser capsulotomy was carried out with a mean energy of 6979 nJ and resulted in 92.9% free floating, 6.4% slightly adherent and 0.8% incomplete capsulotomies. Nucleus fragmentation used either 6 or 8 radial "pizza cuts" or a combination of 4 pizza cuts and 4-8 circular cuts with a mean energy of 7632 nJ. Total laser energy was between 8 and 15 J. One (0.4%) posterior capsule rupture occurred (not related to the laser). Laser group eyes had slightly better visual acuity (0.71 vs. 0.60 geometric mean) and less corneal swelling (21 μ m vs. 28 μ m) on day one. After one month, no differences could be observed regarding visual acuity, refractive precision and higher order aberrations. Refractive predictability seemed somewhat better at the 6 month visit (MAE 0.29 dpt vs. 0.34 dpt). Arcuate keratotomies showed a correction index of 0.79/0.83 after 1/3 months. 84%/80% of eyes had θ 0.75 dpt of residual astigmatism at one/three months.

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Conclusions:

Fs-laser-assisted cataract surgery is the icing on the cake of already very high quality level procedures. It does deliver supreme results when combined with first class diagnostics and preop planning, aberration correcting implants and aberration neutral micro incisions. Laser AKs are very consistent and predictable.

Financial Interest:

NONE