11th ESCRS Winter Refractive Surgery Meeting

Athens 2007

2-4 February 2007

in conjunction with the 21st Meeting of the
Hellenic Society of Intraocular Implant and Refractive Surgery

BOOK OF ABSTRACTS

ESCRS

European Society of Cataract & Refractive Surgeons

POSTERS

KULIKOVA, IRINA L.

RESULTS OF NON-CONTACT LASER THERMOKERATOPLASTY IN CHILDREN WITH HIGH HYPEROPIC ANISOMETROPIA

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PURPOSE: We investigated efficacy, predictability, stability and safety of non-contact laser thermokeratoplasty (Glass-Yb:Er LTK, wavelength of 1.54 µm) to correct hyperopia and hyperopic astigmatism and to treat refractive amblyopia in children with high anisometropia in whom conventional treatments have failed.
SETTING: Svyatoslav Fyodorov SI IRTC Eye Microsurgery Complex, Cheboksary Branch, Russia.
METHODS: LTK was performed on 68 patients (68 eyes). Mean age was 11.5 years. The mean manifest refraction spherical equivalent (MRSE) was +2.75 ±1.21 D (range +1.0 to +4.0 D), the mean sphere was +2.55±1.33 D (range +1.25 to+ 4.0 D), the mean cylinder was +1.43±0.87 D (range 0.0 to +3.0 D). Minimum follow-up was 18 months. Fifty patients (73.5%) were not able to function binocularly. Mean preoperative endothelial cell density was 2320 cells/mm_. Unilateral treatments was performed under topical anesthesia using Glass-Yb:Er LTK nomogram. The optical zone was 6.0 mm.
RESULTS: At 18 months, mean MRSE was +1.05 D, MRSE was within ±1.0 D in 76% of eyes. At 36 months, mean MRSE was +1.09 D, MRSE was within ±1.0 D in 74% of eyes; uncorrected visual acuity (UCVA) was 1-4 lines better than preoperative best spectacle-corrected visual acuity (BSCVA) in 69% of eyes. Preoperatively UCVA of 20/40 or better was present in 19%, postoperatively - in 73% of eyes. Postoperatively BSCVA improved by at least 3 lines in all eyes, and none of the eyes lost BSCVA. Thirty seven patients from 50 (74%) were able to function binocularly. Endothelial cell loss was 4.6 %.
CONCLUSIONS: Our study show that Glass-Yb:Er LTK was safe and effective for correction of hyperopia and hyperopic astigmatism, treatment of refractive amblyopia and improvement of binocular vision in children with high anisometropia, when conventional therapies had failed.

KYMIONIS, GEORGE

ELEVEN-YEAR FOLLOW-UP OF LASER IN SITU KERATOMILEUSIS

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PURPOSE: To report the long-term (eleven year) outcome (stability and complications) of laser in situ keratomileusis (LASIK) in patients with high myopia.
SETTING: University of refractive surgery center, Greece.
METHODS: Seven patients (four with bilateral and three with unilateral treatment) aged 34 to 50 years (mean ± standard deviation, SD, 41.7±6.5 years) who underwent myopic LASIK (two men and five women) and had completed 11 years of follow-up were included in the study (mean ± SD, 140.18±6.70 months, ranged from 132 to 150 months).
RESULTS: At 11 years, spherical equivalent error was statistically significantly reduced (pre-LASIK, mean ± SD: -12.96 (D) ±3.17 (range, -19.00 to -10.00D) to -1.14 ± 1.67 D (range, -4.25 to 1.00 D) (P<001). Predictability of postoperative refraction at sixth months and eleven years after LASIK showed that six eyes (55%) were within 1 diopter (D) of intended correction. No late postoperative complications occurred in this series of patients who were satisfied with the final outcome at 73% of the overall eyes (8 eyes-5 patients).
CONCLUSIONS: LASIK was moderately predictable for the correction of high degrees of myopia in this study. After the sixth postoperative month, refractive and topographic stability were obtained while no long term sight-threatening complications were found during the follow-up period.

LABORANTE, ANTONIO

COMPARISON OF INDUCED CORNEAL ABERRATIONS WITH MECHANICAL MICROKERATOME AND INTRALASE FEMTOSECOND LASER ONE YEAR AFTER LASER IN SITU KERATOMILEUSIS

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PURPOSE: To compare corneal aberration changes one year after myopic laser in situ keratomileusis (LASIK) performed with mechanical microkeratome and IntraLase femtosecond laser.
SETTING: Institute of Ophthalmology, Catholic University, Rome, and Ophthalmology Department, IRCCS - 'Casa Sollievo della Sofferenza' Hospital, San Giovanni Rotondo, Foggia, Italy.
METHODS: 47 eyes of 28 myopic patients were evaluated: 24 eyes of 15 patients underwent LASIK with a mechanical microkeratome (Hansatome, Bausch & Lomb), and 23 eyes of 13 patients underwent LASIK with the IntraLase femtosecond laser. Topography data were used to calculate corneal aberrations with 7.0mm pupil, before and one year after surgery. The Increasing Factor (IF), defined as the ratio between the postoperative and preoperative mean value of the optical aberration, was calculated. The method of Mulhern and coauthors was used to evaluate the centration of ablation. The Student t test was used for the statistical analysis.
RESULTS: The postoperative mean decentration of ablation was <0.5mm. After the standard excimer laser ablation, all aberrations statistically changed in both groups (p<0.05). The IF similarly increased in two groups for spherical-like aberration, whereas greatly increased in the Hansatome group for total and coma-like aberrations.
CONCLUSIONS: Wavefront corneal aberrations change significantly one year after myopic LASIK performed with Hansatome microkeratome as well as with IntraLase femtosecond laser. Both the procedures induce higher order aberrations in the anterior corneal surface, but the amount of coma-like aberration increases more with the mechanical microkeratome.

LAM, FOOK CHANG

SPONTANEOUS PERFORATION OF THE CORNEA IN MILD KERATOCONUS

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PURPOSE: Spontaneous perforation of the cornea in hydrops from keratoconus is exceedingly rare. The handful of reported cases have been in patients with advanced keratoconus. We therefore present a case of spontaneous perforation of acute hydrops in a patient with only mild keratoconus.
SETTING: A 34-year-old female patient with mild keratoconus presented with acute hydrops and spontaneous perforation despite having no other risk factors.
METHODS: The clinical features at presentation, management and eventual visual outcome of our patient are described together with photographs. We also review the literature looking at risk factors for the spontaneous perforation in corneal ectatic conditions, the management used in other reported cases and compare the outcomes of different case reports.
RESULTS: All previous reported cases were in severe keratoconus and required corneal grafting for preserving the integrity of the globe and/or visual rehabilitation. Our patient only had mild keratoconus and was managed successfully with corneal gluing alone and retained a visual acuity of 6/6 with spectacle correction. Possible risk factors for spontaneous perforation during hydrops in keratoconus are topical steroid treatment, raised intraocular pressure, and eye rubbing.
CONCLUSIONS: We demonstrate that acute hydrops and spontaneous perforation can occur with only mild keratoconus in the absence of other risk factors.