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BOOK OF ABSTRACTS

POSTERS

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OPTICAL COHERENCE TOMOGRAPHY IN TREATMENT SPOT ANALYSIS OF THERMOKERATOCOAGULATION AND LASER THERMOKERATOPLASTY ON CHILDREN'S CORNEAS

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PURPOSE: The comparative analysis of the remote results of the influence of thermokeratocoagulation (TKN) and non-contact laser thermokeratoplasty (Glass-Yb:Er LTK, wavelength 1.54 μm) on children's cornea and refraction results.
SETTING: Svyatoslav N. Fyodorov SI IRTC Eye Microsurgery Complex, Cheboksary Branch, Russia.
METHODS: This study included 5 patients after TKC and 7 patients after Glass-Yb:Er LTK in 2-5 years after monolateral treatment (on average 3.5 years). Mean patient age was 10. 5 years (range 8 to 13 years). The mean preoperative manifest refraction spherical equivalent (MRSE) was +4.95±1.55 D (range +1.5 to +7.0 D), mean refractive astigmatism was -2.25 ±1.08 D (range -4.0 to -1.0 D). The measurements of cornea were performed using optical coherence tomography (Viasante TM OCT, Zeiss).
RESULTS: Total regress of refraction effect after TKC was observed at the moment of patients' check-up. According to the OCT data scars formed in the stroma of the cornea, at the treatment spot sites, the depth of the scars mostly achieved half of cornea. After Glass-Yb:Er LTK MRSE was +2.83 D (range +1.0 to +4.25D), mean astigmatism was -1.25 D (range0.75 to -2.15D). According to OCT the scars, which formed at the treatment spot sites were situated in stroma of cornea, penetrating all corneal thickness. The scar had a form of cut cone, the smaller basis of which was directed to the posterior epithelium, its diameter - 25% of the basis at the anterior corneal surface.
CONCLUSIONS: Optical coherence tomography is high precision and reliable method in objective assessment of the results of TKC and Glass-Yb:Er LTK influence on children cornea. Refraction results of the surgeries based on thermal influence on cornea directly depends on the characteristics of the equipment used. At 3.5 years the mean refraction effect of Glass-Yb:Er LTK was 2.15D in children, after TKC total regress of refraction effect was observed.