Shihao Chen, J Clin Exp Ophthalmol 2017, 8:3 (Suppl)
DOI: 10.4172/2155-9570-C1-063

Corneal collagen crosslinking for post-LASIK corneal ectasia: One year follow-up

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Purpose: To evaluate the outcomes of corneal collagen crosslinking for management of progressive corneal ectasia after refractive surgery.

Methods: Collagen crosslinking was performed in 15 eyes of 13 patients with post-LASIK keratectasia. Crosslinking was performed either with LASIK flap lift (n=8; A-CXL, 365 nm, 30 mW/cm2 irradiance, 3 minutes) or with epithelium-on, flap-on (n=7; T-CXL, 365 nm, 3 mW/cm2 irradiance, 30 minutes) technique. The main outcome measures included change in logMAR uncorrected distance visual acuity, corneal thickness and Scheimpflug based corneal keratometry at the end of 12 months.

Results: The uncorrected distance visual acuity improved after A-CXL (1.05±0.45 vs. 0.92±0.31; p=0.394) and T-CXL (1.02±0.48 vs. 0.76±0.51; p=0.087). A significant flattening of maximum keratometry (Kmax) was noted after T-CXL (59.4±9.2 vs. 56.0±9.7; p=0.020) whereas the mean Kmax continued to increase after A-CXL (57.7±7.4 vs. 58.8±8.2; p=0.099). The central and thinnest pachymetry and posterior corneal elevation remained stable after A-CXL and T-CXL at the end of one year. There was no significant endothelial cell loss after A-CXL or T-CXL. Significant intergroup differences were noted in Kmax values at the end of one year (p=0.0180).

Conclusions: In our study collagen crosslinking in post-LASIK keratectasia resulted in mild improvement in visual acuity. Corneal flattening was noted after transepithelial crosslinking without LASIK flap lift. No adverse effects of crosslinking were noted in any of the cases.

Biography

Shihao Chen is the Director of Refractive Surgery Center of Affiliated Eye Hospital of Wenzhou Medical University. He is also the Adjunct Clinical Professor of Pacific University since 2009. He is the Committee Member of Laser Medicine of Zhejiang Medical Society and Refractive Surgery Group of Chinese Non-Public Ophthalmology Society, ESCRS, ASCRS, IACLE and COS. He is also the Editorial Member of Chinese Version of SCI Journals *Cornea* and *Optometry and Vision Science*. He has published dozens of SCI articles, including F1000 faculty recommended article. His honors include National Education Ministry Achievements award and several provincial scientific and technical progress awards.

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