

Global Summit on **OPHTHAMOLOGY, CORNEA DISORDERS AND TREATMENTS**

December 02, 2021 | Webinar

Customized Stromal Lenticule Implantation for Keratoconus**Azad Sanginabadi***Iran University of Medical Sciences*

PURPOSE: To investigate the potential benefit of keratoconus surgery using customized corneal stromal donor lenticules obtained from myopic small incision lenticule extraction (SMILE) surgery by femtosecond laser.

METHODS: In this prospective, consecutive, non-comparative series of cases, 22 lenticules were obtained from 22 myopic patients who had SMILE with a lenticule central thickness of greater than 110 μm . The lenticules were implanted in 22 eyes with advanced keratoconus. The lenticules were customized for the purpose of the implantation with either a simple necklace or necklace-with-ring shape (compound form) depending on the corneal thickness and corneal topography configuration of the implanted keratoconic eyes. The lenticules were implanted into a 9.5-mm corneal lamellar pocket created by the femtosecond laser. Changes in densitometry, thickness, confocal microscopy, corrected distance visual acuity (CDVA), and endothelial cell density were investigated.

RESULTS: Intrastromal lenticule implantation was successfully performed in all cases without any complication. Corneal thickness showed a mean enhancement of 100.4 μm at the thinnest point. On biomicroscopy, all corneas were clear at 1 year postoperatively and there was a significant improvement in corneal densitometry during the entire follow-up period. Confocal biomicroscopy showed collagen reactivation without any inflammatory features caused by the implanted fresh lenticules. CDVA improved from 0.70 to 0.49 logMAR ($P = .001$) and keratometry decreased from 54.68 ± 2.77 to 51.95 ± 2.21 diopters ($P = .006$).

CONCLUSIONS: Customized SMILE lenticule implantation by femtosecond laser proved to be feasible, resulting in an improvement in vision, topography, and refraction in the implanted eyes.

Biography

Azad Sanginabadi has completed his MSc at the age of 25 years from Iran University of Medical Sciences. He is Founder and director of the International Health Tourism Company "cheshmpezeshkan". He has published more than 18 papers in reputed journals and has been serving as an editorial board member of reputed.

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