

Corneal Safety and Stability in Cases of Small Incision Lenticule Extraction with Collagen Cross-Linking (SMILE Xtra)

Ihab m. Osman

Ophthalmology Department, Faculty of Medicine, Alexandria University, Alexandria, Egypt



Abstract

Purpose: To assess the safety and stability in cases of small incision lenticule extraction with collagen cross-linking (SMILE Xtra).

Methods: This study was a retrospective interventional comparative study that included 60 eyes of 30 patients divided equally into two groups: SMILE Xtra and SMILE alone. Inclusion criteria were patients >18 years of age, myopic error >6 D, thinner cornea <520 microns, and abnormal corneal topography. Outcome data were recorded including uncorrected distance visual acuity and corrected distance visual acuity (UDVA and CDVA), manifest refraction spherical equivalent (MRSE), central corneal thickness, average keratometry, endothelial cell density, corneal resistance factor (CRF), and corneal densitometry. Follow-up period was 24 months.

Results: There was a significant difference between the 2 groups regarding UDVA, CDVA, and MRSE at 1 month. In the SMILE Xtra group, 90% of eyes had postoperative UDVA of 20/20 and 97% had UDVA of 20/30 at 24 months. At 24 months, 26 eyes (87%) vs. 25 eyes (84%) were within ± 0.50 D of attempted correction in SMILE Xtra and SMILE groups, respectively. Regarding stability, both groups showed improvement of MRSE at 1st month postoperatively and remained stable along the 24 months of follow-up. CRF and corneal densitometry were higher in the SMILE Xtra group along the whole follow-up period ($p < 0.001$).

Conclusion: Combining corneal cross-linking with SMILE procedure (SMILE Xtra) is a promising tool to prevent ectasia in high-risk patients. It is a safe and simple procedure that can be offered to patients undergoing SMILE with risk for ectasia.

Biography:

Ihab m. Osman is working as Assistant professor of ophthalmology. He has published more than 9 papers in reputed journals. He completed his Bachelor's Degree in Medicine & Surgery (M.B.Ch.B.) 2000. Faculty of Medicine, Alexandria University; Egypt and Master Degree in Ophthalmology (M.Sc.) 2005

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