Application of the smile-derived glued lenticule patch graft in microperforations and partial-thickness corneal defects.

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Abstract:

Purpose: To report the initial clinical outcomes of the small incision lenticule extraction (SMILE)-derived glued lenticule patch graft for management of microperforations and complicated corneal tears. Methods: In this single-center case series, 7 eyes (of 7 patients) that presented with microperforations, partial-thickness corneal defect, and traumatic complicated corneal tear were repaired with a lenticule patch graft obtained from Refractive Lenticule Extraction (ReLEx) with the SMILE procedure. The patch was secured to the recipient eye using fibrin glue. Preoperatively, anterior segment optical coherence tomography was used to assess the depth of the defect and to decide the thickness of the lenticule. Patients were followed up on days 1, 7, and 15 and at 1 and 3 months postoperatively. Main outcome parameters measured were best-corrected visual acuity, clarity of the graft, and restoration of optical and tectonic integrity. Results: All surgeries were uneventful. Significant improvement in visual acuity was seen from 15 days onward in 5 of 7 eyes. The lenticule graft was well apposed and remained clear until the last follow-up visit in all eyes treated. Conclusions: The patch graft from the SMILE-derived lenticule using fibrin glue seems to serve as a safe, feasible, and inexpensive surgical option for the management of microperforations and complicated corneal tears, especially in centers that perform the SMILE procedure in large numbers.