DEEP ANTERIOR LAMELLAR KERATOPLASTY IN THE EARLY PHASE OF LEARNING CURVE

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Objective: To report the early experience of deep anterior lamellar keratoplasty (DALK).

Design: Retrospective interventional case series.

Methods: We retrospectively reviewed 16 patients (16 eyes) who had undergone DALK in a corneal transplant surgeon's early phase of DALK learning. Preoperative diagnosis included advanced keratoconus (8 eyes) and corneal stromal scars associated with previous contact lens-related keratitis (4 eyes), herpetic keratitis (1 eye), and trauma (3 eyes). DALK was performed by using Angwar's big-bubble technique, assisted by the small-bubble technique if required. Outcome measures included intraoperative and postoperative complications, graft clarity, postoperative best-corrected visual acuity (BCVA) and corneal endothelial cell density.

Results: The mean age of the patients was 32.1 ± 16.9 years (range, 17 to 77 years). The mean postoperative follow-up period was 15.8 months, ranging from 8 to 33 months. Intraoperative microperforation occurred in 5 eyes; however, none required converting DALK to penetrating keratoplasty. Postoperatively, detachment of the Descemet membrane (DM) was observed in 4 patients, and all of them could be successfully reattached after intracameral injection of 20% SF6 or air. By the end of the study, all patients attained a clear graft without rejection or endothelial decompensation. Excluding one patient with amblyopia, the mean preoperative and postoperative BCVA (logMAR) for eyes with a minimum of 8 months of follow-up were 0.93 ± 0.48 and 0.60 ± 0.52, respectively. The mean endothelial cell loss was estimated to be 14%. Eyes with intraoperative microperforation tended to have a greater endothelial cell loss and a higher incidence of DM detachment.

Conclusion: DALK is a viable alternative to PK for corneal stromal disorders. Although the incidences of intraoperative microperforation and postoperative DM detachment were not low in the early phase of the learning curve, favorable outcome is possible with timely and appropriate management of these complications.