Clinical Outcomes of Deep Anterior Lamellar Keratoplasty at Ramathibodi Hospital

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Objective: To evaluate outcomes of deep anterior lamellar keratoplasty (DALK) using the big bubble technique at Ramathibodi hospital.

Patients and Methods: The medical records of 38 patients (42 eyes) who underwent successful optical DALK from July 2006 to December 2012 at Ramathibodi hospital were reviewed retrospectively. Main outcome measures were graft survival, change in Snellen visual acuity, and complications.

Results: There were 19 male and 19 female with a mean age of 39.06 ± 19.30 years. Mean follow-up period was 36.24 ± 22.08 months. Preoperative diagnoses included corneal scar (14 eyes), corneal dystrophy (14 eyes), and keratoconus (14 eyes). DALK alone was performed in 41 eyes (97.6%) and only one eye (2.4%) had triple DALK (DALK with phacoemulsification with intraocular lens insertion). The overall graft survival rate was 92.4%. Twenty-eight eyes had an improvement in Snellen visual acuity of at least 2 lines. Intraoperative complications included microperforation in 6 eyes (14.3%) and macroperforation in 3 eyes (10.1%). Postoperative complications were Descemet's membrane detachment in 11 eyes (26.2%), primary graft failure in 1 eye (2.4%), pupillary block in 2 eyes (4.7%) and transient intraocular pressure elevation during the first 6 months in 22 eyes (52.4%). A preoperative diagnosis of corneal scar was significantly associated with intraoperative complication ($P < 0.05$). There was no significant correlation between intra- or post-operative complications and final visual outcome.

Conclusions: DALK using big bubble technique is useful and safe for corneal diseases limited to corneal stroma. Corneal scar may be a predictive factor for intraoperative complications.