Clinical outcomes of deep anterior lamellar keratoplasty (DALK) in keratoconus patients.

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Objective: To report the clinical outcomes of deep anterior lamellar keratoplasty (DALK) in keratoconus patients.

Methods: Ten eyes of 10 patients with high grade keratoconus who underwent DALK between January 2018 and January 2019 were included. Patient records were reviewed retrospectively. Demographic characteristics, duration of follow-up, pre- and postoperative visual acuity, objective refraction, complications were recorded.

Results: The mean patient age was 37.6 years. The male/female ratio was 8/2. All patients were contact lens intolerant and 6 patients had corneal stromal opacities. Duration of postoperative follow-up was 6.3±4.3 months. At latest follow-up, Snellen BCVA of 0.8 or better was present in 4 eyes (40%), 0.5-0.8 in 5 eyes (50%) and 0.5 or worse in 1 eye (10%). The mean preoperative refractive cylinder was 5.42±3.55 D and decreased to 3.20±2.42 D at the end of postoperative follow-up (p<0.05). There was an intraoperative micro perforation in 2 eyes and DALK could be completed successfully in all patients. Big bubble could be obtained in 4 patients and manual lamellar dissection was used in the rest of the patients. Figure 1 shows intraoperative image of the patient during lamellar dissection of the recipient bed. No rejection episodes were observed postoperatively. 4 patients had minimal interphase clouding which did not cause significant visual disturbance.

Conclusions: DALK is a useful and safe procedure for corneal transplantation in keratoconus patients. Micro perforations during surgery are the main intraoperative complication however most can be handled successfully without conversion to penetrating keratoplasty. Manual lamellar dissection can be performed safely in cases where the big bubble formation cannot be achieved.