

Corneal transplantation in young children with congenital hereditary endothelial dystrophy

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Purpose: To describe the surgical success rate and visual results of penetrating keratoplasty in a series of young children with congenital hereditary endothelial dystrophy and to summarize the current literature on outcomes of keratoplasty for congenital hereditary endothelial dystrophy, with particular attention to the timing of surgery.

Methods: The authors conducted a retrospective study of children aged 12 years and younger who underwent penetrating keratoplasty between 1975 and 1994 at four participating eye centers, and who were followed for at least 6 months postoperatively. For this report, 21 corneal transplants performed in 16 eyes of nine patients with congenital hereditary endothelial dystrophy were studied. Patients' median age at the time of first keratoplasty was 40 months (range, 3 months to 10 years).

Results: During a mean follow-up period of over 70 months (range, 6 to 240 months), 11 (69%) of 16 eyes retained full graft

clarity. The 2-years survival rate of first grafts was 71% (95% confidence interval, 47% to 95%).

Postoperative visual acuity improvement of 1 or more Snellen lines was seen in five of 10 eyes in which the patients were old enough for accurate assessment of visual acuity; however, just four of these 10 eyes attained a visual acuity of 20/200 or better.

Conclusions: Penetrating keratoplasty for congenital hereditary endothelial dystrophy in has a reasonable chance of surgical success when performed at a young age, the prognosis for improved visual acuity in children appears to be more guarded. Decisions on the timing of surgical intervention for congenital hereditary endothelial dystrophy should be made on a case-by-case basis. Although the threat of irreversible amblyopia in untreated eyes and good surgical success rates even among very young children argue for the consideration of relatively early surgical intervention in the most severely affected cases, there is evidence to support delaying surgery in some cases.

Superior hinge laser in situ keratomileusis

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Purpose: The learning curve and experience with the first 400 superior hinge laser in situ keratomileusis (LASIK) procedures performed with the Hansatome microkeratome are reported. We present information on intraoperative complications, management, practical aspects, and the effectiveness of this microkeratome used with the Nidek EC-5000 excimer laser.

Methods: All LASIK procedures were performed by authors, according to the traditional technique described by

Lucio Buratto. Intraoperative complications in the first 400 superior hinge LASIK procedures were evaluated.

Results: Most procedures had no complications. Bleeding of the perilimbal corneal vessels was the most frequent complication; other complications observed were not considered serious.

Conclusions: The superior hinge LASIK procedure with the Hansatome showed an easy learning curve, without the serious complications that frequently occur in this phase. It was suitable for all the treatments with the Nidek EC-5000 excimer laser.

Evaluation of Teflon-coated intraocular lenses in an organ culture method

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Purpose: Teflon AF®, the first amorphous and transparent form of Teflon, has been proposed as a coating of polymethylmethacrylate (PMMA) intraocular lenses (IOLs), to render them highly hydrophobic and increase their biocompatibility. We have used an organ culture method to evaluate cell adhesion, proliferation and migration on Teflon-coated IOLs.

Methods: 1mm² corneal explants from 14-day-old chicken embryos were placed on a semi-solid culture medium and covered with uncoated PMMA (N = 36) and Teflon-coated PMMA (N = 36) IOLs, and 2 controls, Thermanox (N = 84) and Latex (N = 36). After incubation (7 days - 37°C), a digital imaging system was used to measure the areas of the cell migration layers on the materials. The cells were then removed

with trypsin-EDTA and the cells detached at times up to 75 min were counted (Coulter® Multisizer System). The values were used to construct a cell disconnecting curve for each material. Statistical significance was determined by Kruskal-Wallis non-parametric test and Dunn's multiple post-comparisons test.

Results: The areas of cell migration layers on the 4 materials were significantly different ($p < 0.0001$). The areas on uncoated and Teflon-coated IOLs were also different ($p < 0.05$). Cell disconnecting curves demonstrated that cells adhered less strongly to Teflon-coated IOLs than to the other materials.

Conclusion: This organ culture method demonstrated that the coating of PMMA IOLs with Teflon AF® is correlated with anti-adhesive and anti-proliferative properties.

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