

CORNEA AND EXTERNAL EYE

MEDIUM TERM RESULTS OF PENETRATING KERATOPLASTY

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Purpose: This is a retrospective evaluation of penetrating keratoplasty for optical purpose in the Eye Clinic of the Clinical Emergency Hospital "St. Spiridon "Iasi.

Methods: The study evaluated 51 eyes of 50 patients, mean age of patients was 50.8 years. Indications for penetrating keratoplasty were: stage IV keratoconus (31.3%), chronic corneal edema (29.4%), corneal dystrophies (17.6%), corneal leukoma (17.6%) and irreversible graft rejection (3.9%). Penetrating keratoplasties were performed by the same surgeon. Postoperatively, patients were evaluated regularly through a comprehensive eye exam. Mean follow-up was 22.7 months post-keratoplasty (SD \pm 20.8)

Results: During follow-up 73% did not show any postoperative complication, while 17% of cases showed an increased intraocular pressure; 10% developed acute graft rejection. Survival without acute rejection of the transplant is 95% at one year and 93% at two years. Aphakic or pseudophakic cases have higher risk of developing high intraocular pressure compared to phakic eye (41% vs 3%). Among patients where the keratoplasty was performed on phakic eye (28), only one developed secondary cataract. Glaucoma before the intervention is a risk factor for increased intraocular pressure unlike patients without glaucoma. Also, performing penetrating keratoplasty combined with another procedure in the same operation increases the risk of ocular hypertension in 32% versus 18% for keratoplasty alone. Secondary astigmatism 3 months or more after keratoplasty recorded values between -3.5 and + 5 D. 30 patients(63.8%) had a final visual acuity between 0.3-0.9 Snellen line. 27.4% of patients had a better visual acuity compared to fellow eye.

Conclusion: Penetrating keratoplasty results are influenced by preoperative status, type of surgery and also by rigorous long-term follow-up of patients to prevent and address complications as soon as possible.

FEMTOSECOND LASER ASSISTED KERATOPLASTY FOR KERATOCONUS

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Purpose: To evaluate the results of treatment of keratoconus of different stages by femtosecond laser assisted procedure.

Methods: Femtosecond laser (AMO Intralase 60kHz) assisted penetrating keratoplasty (FS-PKP) with "combined" trephination profile was performed for 115 eyes (main group), and traditional penetrating keratoplasty - for 112 eyes (control group) with stage 4 keratoconus. The 2 groups were compared in terms of UCVA, BSCVA, postoperative astigmatism and endothelial cell (EC) loss. An original technique of femtosecond laser-assisted deep anterior lamellar keratoplasty (FS-DALK) with optimized cutting algorithm allowing to result "mushroom-shape" transplant and recipient's bed edge and avoid using sharp instruments for making big-bubble, was performed for 34 eyes (main group), and manual deep anterior lamellar keratoplasty (DALK) – for 35 eyes (control group) with stages 2 and 3 of keratoconus. The 2 groups were compared in terms of UCVA, BSCVA, postoperative astigmatism, EC loss, central graft thickness and residual recipient's tissue thickness. Also, corneal hysteresis (CH) and corneal resistance factor (CFR) were