Corneal transplantation in children with Peters anomaly and mesenchymal dysgeneses

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Objective: The purpose of the study is to describe graft and visual outcomes of penetrating keratoplasty among young children with Peters anomaly and associated mesenchymal dysgeneses.

Design: The design was a multicenter retrospective analysis of the indications and outcome on pediatric keratoplasty.

Participants: The records of all children aged 12 years and younger who underwent penetrating keratoplasty for mesenchymal dysgenesis between January 1975 and May 1993 at the participating centers were reviewed.

Measures: The data were analyzed regarding graft survival and postoperative visual acuity.

Results: Forty-seven corneal transplants in 36 eyes of 29 patients with mesenchymal dysgenesis were studied. The majority of eyes operated on (30) had Peters anomaly (83%). Patients' mean age at the time of keratoplasty was 7 months. After a mean follow-up period of 38 months, 61% of eyes retained full graft clarity. One and 3-year survival rates were 79% (95% confidence interval [CI] = 65% - 93%) and 62% (95% CI = 45% - 79%), respectively. Postoperative corneal ulcers/nonhealing epithelial defects (P = 0.03), and additional noncorneal surgical procedures at the time of transplantation (P = 0.05) were associated with graft failure. Provision of postoperative optical aids (P = 0.01) was associated with better postoperative visual acuity levels.

Conclusions: Penetrating keratoplasty for Peters anomaly and related mesenchymal dysgeneses in young children has a reasonable chance of success during the critical years of visual maturation and is associated with satisfactory visual results in one third to half the cases. The data suggest that complicated cases requiring additional surgical procedures have a worse prognosis.

Prospective and controlled study of ophthalmopathy after radioiodine therapy for Graves' hyperthyroidism

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The effects of radioiodine (^{131}I) therapy for hyperthroidism on the ocular process of Graves' disease is controversial. In order to evaluate the outcome of ophthalmopathy after radioiodine therapy for thyrotoxicosis we studied prospectively 30 Graves' hyperthyroid patients, 22 submitted to radioiodine (^{131}I) treatment (group A) and 8 treated with antithyroid drugs (group B). All patients were evaluated by clinical ophthalmologic examination, and ocular proptosis (OP) was measured with both a Hertel exophthalmometer (HE) and computed tomography (CT) before and 4 to 7 months after therapy. No statistical difference was obtained between pre- and post-treatment OP measurements in each eye in either group, and we did not observe worsening in the ophthalmopathy of patients treated with drugs or radioiodine. After therapy, there was an improvement in the clinical signs of ophthalmopathy in 59% of group A and in 37.5% of group B patients. We found a significant correlation between OP measured by HE and by CT. CT findings showed an increase in orbital fat and/or muscle thickening in all patients at baseline, proving to be a useful procedure for ophthalmologic diagnosis in doubtful cases. No patient in either group developed hypothyroidism or elevated TSH levels during the study period; this may explain our good results in the evolution of Graves' ophthalmopathy after treatment with ^{131}I and antithyroid drugs. Euthyroidism seems to be an important factor in the outcome of ophthalmopaty after therapy, whatever the mode of treatment chosen to achieve it.

Experimental studies with perfluoro-octane for hemostasis during vitreoretinal surgery

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Purpose: To investigate the effect of perfluoro-octane on coagulation studies and on intraoperative hemostasis during vitreoretinal surgery in an animal model.

Methods: In vitro study - comparison of coagulation profiles (bleeding time, whole blood clotting time, partial thromboplastin time, and one-stage prothrombin time) of blood taken from healthy volunteers with and without the addition of perfluoro-octane.

In vivo study - comparison of times taken to achieve hemostasis in a rabbit model with large retinal arterial bleeding in vitrectomized and aphakic eyes with and without intraocular injection of perfluoro-octane.

Results: In vitro study - perfluoro-octane had no significant effect on coagulation profiles.

In vivo study - intraocular perfluoro-octane significantly reduced the time to achieve hemostasis ($P < 0.01$) at all infusion bottle heights in vitrectomized and aphakic rabbit eyes.

Conclusions: Perfluoro-octane may be used to control bleeding during vitreoretinal surgery. A direct effect on the clotting cascade could not be demonstrated.