

THE LITERATURE

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RANDOMIZED TRIAL COMPARING MULTILAYER AMNIOTIC MEMBRANE TRANSPLANTATION WITH SCLERAL AND CORNEAL GRAFTS FOR THE TREATMENT OF SCLERAL THINNING AFTER PTERYGIUM SURGERY ASSOCIATED WITH BETA THERAPY

de Farias CC, Sterlenich T, de Sousa LB, et al¹

ABSTRACT SUMMARY

De Farias et al randomized 26 eyes with scleral thinning as a consequence of beta therapy after pterygium surgery to receive either multilayer amniotic membrane transplantation (AMT), lamellar corneal transplantation (LCT), or lamellar scleral transplantation (LST). The investigators performed an ophthalmologic examination and ultrasound biomicroscopy to assess scleral thinning preoperatively and 30, 90, and 180 days postoperatively. The main outcome measures were an increase in scleral thickness, epithelialization of the ocular surface, and preservation of the ocular globe.

According to the investigators, regardless of the surgical technique used (AMT, LCT, or LST), no clinical or statistical changes in corrected distance visual acuity occurred. The median preoperative scleral thickness was similar in all three groups (AMT = 0.45 mm; LST = 0.48 mm; LCT = 0.52 mm [$P = .257$]). Six months after surgery, however, the median thickness in the AMT group (0.19) was significantly less than that in the LCT group (0.57; $P = .27$) or the LST group (0.76; $P = .19$). Epithelialization occurred in all eyes, and a high rate of reabsorption of the amniotic membrane was observed.

The investigators concluded that LCT was the best option for the structural treatment of scleral thinning followed by LST with a conjunctival flap. A high rate of reabsorption was found with AMT, which was the least effective of the three therapeutic options and should not be used for this condition, the investigators said.

DISCUSSION

Scleral thinning after beta radiation for pterygium surgery can be a terrible postoperative complication. Although several treatment options are available, this study by de Farias et al suggests which options provide the best long-term results. Although beta radiation has become less prevalent for pterygium surgery, similar scleral thinning has been seen with aggressive cautery as well as after the application of

mitomycin C.² It therefore may be prudent to use lamellar scleral grafts.

COMPARISON OF THE MECHANICAL PROPERTIES OF THE ANTERIOR LENS CAPSULE FOLLOWING MANUAL CAPSULORHEXIS AND FEMTOSECOND LASER CAPSULOTOMY

Sándor GL, Kiss Z, Bocskai ZI, et al³

ABSTRACT SUMMARY

Sándor et al evaluated and compared the mechanical properties of anterior capsular openings created with the continuous curvilinear capsulorhexis (CCC; $n = 50$) technique and femtosecond laser capsulotomy (FLC; $n = 30$) in ex vivo porcine lens capsule specimens. The investigators stretched the capsular openings to determine the rupture force required and used scanning electron microscopy to assess the morphologic profile of the cut capsular edges.

The investigators determined that capsular openings created with a laser ruptured with less force than those made manually ($P < .01$, Mann-Whitney U test). The average circumference stretching ratio in the CCC group was greater than in the FLC group ($P = .0468$, Mann-Whitney U test). When less than 71 millinewton, no capsular tear occurred in either group. When less than 91 millinewton, no capsular tear occurred in the FLC group, but the probability of capsular tears was 9% for the CCC group. Additionally, scanning electron microscopy examination revealed that the laser openings had serrated edges, whereas the manually created openings had smooth edges.

DISCUSSION

Femtosecond laser cataract surgery offers several advantages over traditional surgery, including decreased phaco time, a need for less balanced salt solution, and more predictable effective lens placement.⁴ That said, although the capsulorhexis is more precise when created by a laser, the tendency for an anterior capsule tear may be higher with this approach.

REDUCED INTRAOCULAR PRESSURE AFTER CATARACT SURGERY IN PATIENTS WITH NARROW ANGLES AND CHRONIC ANGLE-CLOSURE GLAUCOMA

Brown RH, Zhong L, Whitman AL, et al⁵

ABSTRACT SUMMARY

Brown et al evaluated the effect of cataract surgery on IOP in patients with narrow angles and chronic angle-closure glaucoma (ACG). They also sought to determine whether

the change in IOP was correlated with the preoperative IOP, axial length, and anterior chamber depth (ACD).

The investigators reviewed the charts of 56 patients (83 eyes) with narrow angles or chronic ACG who had cataract surgery. All eyes had previously undergone laser iridotomy. Data recorded included pre- and postoperative IOP, axial length, and ACD. The mean follow-up was 3 years \pm 2.3 (standard deviation).

According to the study, the mean reduction in IOP in all eyes was 3.28 mm Hg (18%), with 88% of eyes having a decrease in IOP. There was a significant correlation between preoperative IOP and the magnitude of IOP reduction ($r = 0.68$, $P < .001$). The mean decrease in IOP was 5.3 mm Hg in eyes with a preoperative IOP above 20 mm Hg, 4.6 mm Hg in eyes with a preoperative IOP of 18 to 20 mm Hg, 2.5 mm Hg in eyes with a preoperative IOP of 15 to 18 mm Hg, and 1.4 mm Hg in eyes with a preoperative IOP of 15 mm Hg or less. The investigators determined that, for each 1-mm increase in ACD, there was an additional increase of 1.84 mm Hg in IOP. Axial length was not statistically correlated with changes in IOP after surgery.

Cataract surgery reduced IOP in patients with narrow angles and chronic ACG. The magnitude of the reduction was highly correlated with preoperative IOP but weakly correlated with ACD.

DISCUSSION

Cataract surgery has been previously described as a treatment for ACG.⁶ This study by Brown et al elucidates the

predictive preoperative variables for a reduction in IOP. Larger decreases should be anticipated in patients with a high preoperative IOP as well as deep anterior chambers. As cataract surgeons become more experienced with microinvasive glaucoma surgery, they may become better at predicting which cataract patients will require additional procedures at the time of surgery to lower IOP. ■

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