Epithelial Downgrowth Following Insertion of an Ahmed Glaucoma Implant

Epithelial downgrowth has been reported as a complication of various forms of ocular surgery, including trabeculectomy, cataract surgery, and penetrating keratoplasty. It can result in visual compromise and is difficult to treat, often requiring aggressive surgical means. To the best of our knowledge, epithelial downgrowth has not been reported as a complication of a Seton implant. We report a case of histopathologically documented epithelial downgrowth following insertion of an Ahmed glaucoma implant.

Report of a Case. An 84-year-old white woman was first seen in our office in October 1991. Her ocular history was significant for myopic degeneration with posterior staphylooma and primary open-angle glaucoma in both eyes treated with twice-daily 0.5% timolol maleate. Corrected visual acuity was 20/30 OD and 20/40 OS. She had undergone extracapsular cataract extraction and left aphakic approximately 30 years earlier. She required 180° laser trabecuoplasty in her right eye in 1996, followed by a second 180° trabecuoplasty in 1997. She subsequently required a trabeculectomy with mitomycin in the right eye in November 1997, followed by an Ahmed glaucoma implant in April 1998 for uncontrolled intraocular pressure from 30 to 40 mm Hg. Her visual acuity had decreased to counting fingers due to a combination of myopic degeneration, glaucoma, and corneal edema from elevated intraocular pressure. Her visual acuity subsequently improved to 20/80 following surgery. Four months after surgery, a retrocorneal membrane was first noted. Six months after implantation, rapid progression of the retrocorneal membrane was noted. In April 1999, 1 year after implantation, she developed band keratopathy, which decreased her visual acuity to counting fingers, and she underwent EDTA chelation therapy in June 1999. Due to progressive corneal opacification resulting in visual acuity of hand motions, the patient required penetrating keratoplasty in January 2000. An iris biopsy involving the retrocorneal membrane was also performed for diagnostic purposes. Histopathologic examination of the corneal specimen showed a bilayer of cells on the endothelium with round nuclei typical of epithelial cells (Figure 1). The iris specimen revealed obvious epithelial downgrowth (Figure 2). In July 2000, the retrocorneal membrane recurred. No further diagnostic or therapeutic intervention has been attempted thus far. The patient's intraocular pressure has remained controlled at around 12 mm Hg, but her visual acuity has remained at hand motions because of a recurrence of...
Comment. Although it is tempting to conclude that epithelial downgrowth was a result of the Ahmed glaucoma implant, one must remember that this patient had had multiple previous ocular surgical procedures that may have been responsible for, or predisposed her to, this complication. Nonetheless, the chronology of events strongly suggests that the Ahmed implant was indeed responsible. Despite her multiple procedures, she showed no sign of epithelial downgrowth until 4 months after implantation.

Epithelial downgrowth is a rare but important complication of glaucoma shunt procedures. As in this case, it may cause further reduction in vision and require further surgical intervention. Epithelial downgrowth may also potentially occlude the lumen and result in loss of pressure control. Prophylactic steps, such as antimetabolite use over the anterior chamber entry site, may be taken to lessen the likelihood of this complication. Substances other than silicone may deter the adherence of epithelial cells and may be better suited for use in fashioning the tube portion of the implant. Further research is warranted to determine the exact cause of this important complication and to determine how to best decrease its incidence. Glaucoma surgeons should be aware of the possibility of epithelial downgrowth following glaucoma shunt procedures.

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Traumatic Cataract
After Inadvertent Laser Discharge

Focal cataract formation may occur after Nd:YAG laser peripheral iridotomy; however, the lenticular opacities are typically small and outside of the visual axis. A 33-year-old man developed a traumatic cataract after spontaneous Nd:YAG laser discharge through the left pupil. A focal defect in the posterior portion of the left lens with subcapsular and cortical opacities necessitated cataract extraction.

Report of a Case. A 33-year-old man with a history of myopia and pigment dispersion underwent successful Nd:YAG laser iridotomy in his right eye 3 weeks prior to our seeing him. Best-corrected visual acuity was 20/20 OU and he had normal findings on automated perimetry. On returning for iridotomy in his left eye, prior to placing his forehead against the restraint at the laser-equipped slitlamp, he and the surgeon heard a noise that sounded as if the laser had discharged. The treating physician noted that the safety marker on the laser was illuminated and instructed the patient to place his forehead forward. As the patient was positioning his forehead, he heard a second sound that was accompanied with pain and blurred vision in his left eye. To treat the pain and blurred vision, he was placed on a regimen of 0.2% brimonidine tartrate twice per day and 1% prednisolone acetate every hour in the left eye.

He was seen the following day for neuro-ophthalmic examination because of progressive blurring of vision in his left eye. Best-corrected visual acuity was 20/20 OD and 20/40 OS. Examination of the anterior segment revealed a patent peripheral iridectomy in the 12-o’clock position of the right eye. The left iris was normal, without evidence of a stromal defect. A focal defect within the posterior portion of the lens as well as a subcapsular cataract and a cortical cataract with a rosette configuration were noted in the left lens (Figure). There was no evidence

A, Slitlamp photograph of the left eye showing a round focal defect in the posterior portion of the lens in association with surrounding subcapsular and cortical lens opacification. B, Retroillumination of the left lens showing lenticonular opacity with a rosette formation.