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.4 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.

Daniel A. Jewelewicz, MD
Steven I. Rosenfeld, MD
Steven M. Litinsky, MD
Delray Beach, Fla

Corresponding author and reprints: Daniel A. Jewelewicz, MD, Delray Eye Associates, 16201 S Military Trail, Delray Beach, FL 33484 (e-mail: djewel@eyetowncenter.com).


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 slit-lamp, 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 lenticular opacity with a rosette formation.
of anterior chamber cells or flare and the intraocular pressure was 14 mm Hg OU. There was no relative afferent pupillary defect and findings from the remainder of his neuro-ophthalmic evaluation, including examination of the retina, were normal. The vision in his left eye remained unchanged over the ensuing 4 weeks and he underwent cataract extraction and posterior chamber intraocular lens implantation in the left eye.

Comment. The treating physician called the laser manufacturer and was informed that the unit had been moved several days prior to the attempted treatment of this patient's left eye. The laser had been left in the service mode so that the safety/standby feature was still disabled and the spontaneous discharge resulted in a pulse of 6.3 mJ through the pupil and thus resulted in the formation of a traumatic cataract.

Cataract formation is a well-recognized complication of laser peripheral iridotomy. The lenticular opacities are focal, adjacent to the iridotomy site, and do not typically cause visual impairment. A study by Wand and coworkers of 100 patients undergoing iridotomy with the Nd:YAG laser found that only 3 patients required cataract extraction within 1 year, and all 3 had a prior history of cataracts before laser treatment. A perforation cataract has been reported in a previously 3 weeks after laser treatment. However, the patient in their case, proved rather ineffective. It has been suggested that hyperbaric oxygen treatment might be effective if given sufficiently early (ie, very soon after symptoms develop). It is not recommended as a routine because it is not a curative treatment and, while it may be beneficial in some cases, it is not a treatment of choice for all patients. Serial MRI at short intervals following MRI signs of injury, before the occurrence of visual loss. This would be the case, magnetic resonance imaging (MRI) scans. Enhancement of the optic nerves or chiasm after gadolinium injection is a consistent finding, and swelling may also be present. In the following case, MRI signs of radiation injury to the optic chiasm were demonstrable several months before the vision became impaired.

Report of a Case. A 71-year-old woman developed painless binocular diplopia from a left-sided sixth nerve palsy. A biopsy showed that a left cavernous sinus, clivus, and sphenoïd sinus mass demonstrated on an MRI scan was an atypical meningioma. Visual function was normal. The patient underwent radiation (conventional external beam) with a total dose of 55 Gy. One year after the completion of radiation, an MRI scan showed gadolinium enhancement of the optic chiasm (Figure) and optic nerves; the patient was immediately referred for a magnetic resonance imaging evaluation. She had a visual acuity of 20/20 OU, normal color vision (Ishihara test), normal visual fields on kinetic (Goldmann) and static (Humphrey 30-2 program) testing, and normal pupils and fundi. No abnormalities were detected when the tests were repeated 2 months later. However, 3 weeks after that examination (15 months after the completion of radiation), the patient noticed a decrease in her visual acuity: to 20/40 OD and 20/30 OS with dyschromatopsia (Ishihara test) in the right eye. Goldmann perimetry showed a central and inferior defect in the right eye and a central and temporal defect in the left eye. Both optic discs appeared slightly pale.

The patient was promptly treated with high-dose intravenous methylprednisolone, and hyperbaric oxygen treatment was instituted within 11 days of the onset of symptoms. Neither measure helped and her visual function relentlessly declined, eventuating in total bilateral blindness.

Comment. The findings in this case may be important for 2 reasons. First, although I am unaware of other examples, in some cases of anterior visual pathway radiation injury, MRI signs may antedate a decline in visual function. Of interest in this regard is the observation in patients who undergo radiation for uveal melanomas that abnormal visual evoked potentials may be recorded prior to radiation-induced visual loss presumed to be consequent to optic nerve injury. Unfortunately, these patients were not studied with MRI.

Second, there may be treatment implications. Current forms of treatment for radiation injury of the optic nerve and chiasm have, as in this case, proved rather ineffective. It has been suggested that hyperbaric oxygen treatment might be effective if given sufficiently early (ie, very soon after symptoms develop). Perhaps this treatment would be more beneficial if it were given immediately following MRI signs of injury, before the occurrence of visual loss. This would require MRI in asymptomatic patients. Serial MRI at short intervals would not be feasible in all patients but could be reserved for those at par-