Recurrent Endophthalmitis After Neodymium: YAG Laser Capsulotomy

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Bacterial endophthalmitis is a serious complication after cataract surgery. Reported complications of neodymium (Nd):YAG laser capsulotomy have included cystoid macular edema, secondary glaucoma, retinal detachment, elevated intraocular pressure, and endophthalmitis. To our knowledge, recurrent endophthalmitis after Nd:YAG laser capsulotomy may be rare. We recently encountered a patient with this condition.

Case Report
A 69-year-old woman was referred to our clinic on July 1, 1998, with complaints of blurred vision and pain in her right eye. Her family history was noncontributory. She underwent phacoemulsification and aspiration with a foldable intraocular lens implantation and sutureless wound closure in the right eye on July 30, 1997. No complications occurred during cataract surgery. After surgery, 0.3% ofloxacin and 1% prednisolone acetate were topically instilled 4 times daily. On August 1, 1997, she complained of pain in her right eye. Visual acuity in that eye was 0.1. Hypopyon, posterior capsular clouding, and vitreous opacity were found in the right eye. Samples of the anterior chamber yielded Staphylococcus aureus. The patient was given an intravenous injection of cefozopran, 2 g/d, and piperacillin sodium, 2 g/d, from August 1 to August 12. On August 13, 1997, hypopyon and vitreous opacity disappeared, but the posterior capsular clouding remained, and the visual acuity in the right eye was 0.3. Thereafter, no inflammatory signs were noted during the follow-up period of almost 10 months.

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On May 11, 1998, a Nd:YAG laser capsulotomy was performed in the patient’s right eye. After capsulotomy, a small number of intracameral cells were found, but her visual acuity in that eye increased to 1.0. In early June 1998, the number of intracameral cells increased. The patient was given an intravenous injection of ceftizoxime, 2 g/d, and piperacillin sodium, 2 g/d, but the intracameral cells did not diminish. On June 17, her visual acuity in the right eye decreased and hypopyon developed.

On examination on July 1, her visual acuity was 0.01 in the right eye and 0.2 in the left. Her intraocular pressures were 23 mm Hg, right eye, and 11 mm Hg, left eye. Corneal edema and hypopyon in her right anterior chamber were seen (Fig 1). The cornea and anterior chamber appeared clear in her left eye. Cortical opacity was noted in the left lens. The right fundus was invisible. A small macular hole was found in her left fundus. Cultures of the aqueous and vitreous samples were negative for bacteria.

A topical regimen of 0.3% ofloxacin, 0.6% gentamicin sulfate, and 0.5% atropine sulfate 4 times daily was prescribed. The patient was given intravenous injection of imipenem and cilastatin, 1 g/d, and piperacillin sodium, 2 g/d, from July 1 to July 15. The intracameral cells and hypopyon gradually decreased.

On July 21, retinal detachment in her right eye was found on an ultrasonogram. Pars plana vitrectomy, removal of the intraocular lens and residual lens material, fluid-gas exchange, and endophotocoagulation were performed on July 24. No retinal breaks were found during surgery. Intravitreal injection of vancomycin hydrochloride, 200 µg, was given at the end of surgery. The cytologic study of the excised specimen from the vitreous with Gram and Giemsa stains showed many polymorphonuclear leukocytes but no abnormal organisms. Repeated cultures of the aqueous and vitreous specimens were negative for bacteria. Postoperatively, the patient received intravenous administration of imipenem and cilastatin, 1 g/d, for 14 days, and inflammatory signs in the right eye diminished. The postoperative course was uneventful.

No retinal detachment was found during the 5-month follow-up period. Visual acuity in the right eye was 0.2 on December 17, 1998.

Discussion
Endophthalmitis is a serious complication that can occur after cataract surgery. Javitt and coworkers, in 1991, reported that the incidence of endophthalmitis following cataract surgery was 0.14%, based on a series of 324,032 patients. Our patient had recurrent endophthalmitis and retinal detachment after Nd:YAG laser capsulotomy. Endophthalmitis after Nd:YAG laser was first reported by Tetz and coworkers. To our knowledge, only a few patients with endophthalmitis after Nd:YAG laser capsulotomy, who had undergone extracapsular cataract extraction, have been previously described. In our patient, S. aureus was isolated at the first occurrence of endophthalmitis but was not found at the second episode of endophthalmitis. Sterile endophthalmitis has previously occurred by hypersensitivity reaction to the patient’s own lens protein. In our patient, it is possible that the episode of endophthalmitis could be due to resensitization of lens protein, and sterile endophthalmitis may have occurred due to lens protein antigen after Nd:YAG laser capsulotomy.

Ophthalmologists should be aware that recurrent endophthalmitis and retinal detachment may occur after Nd:YAG laser capsulotomy.

References

Fig 1.—Corneal edema and hypopyon in the anterior chamber of the right eye.