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SHORT COMMUNICATION

Phacoemulsification surgery and foldable intraocular lens implantation in a child with regressed retinoblastoma

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PURPOSE. *The management of retinoblastoma has been shifting toward conservative treatment. Visual preservation has become a concern as tumor regression is achieved. To report the surgical approach and outcome of a radiation-induced cataract in an only eye with regressed retinoblastoma.*
METHODS. *Single case report and review of literature.*
RESULTS. *Small incision sutureless phacoemulsification and implant of an acrylic foldable intraocular lens was performed. Best-corrected visual acuity 1 year after surgery was 20/20. No tumor recurrence has been noted after 27 months of follow-up.*
CONCLUSIONS. *Phacoemulsification and foldable intraocular lens implant seemed to be an appropriate therapeutic option for this case. (Eur J Ophthalmol 2005; 15: 821-2)*

KEY WORDS. *Cataract, Foldable IOL, Phacoemulsification, Radiation, Retinoblastoma, Treatment*

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INTRODUCTION

The management of retinoblastoma involves many variables and should be individualized. Enucleation is reserved for unilateral cases or unsalvageable eyes. Radiation, laser/thermotherapy, and chemotherapy are important conservative treatment modalities (1). Recently, there has been a shift toward conservative treatment for retinoblastoma that can lead to ocular complications such as cataract and retinopathy (2, 3). Ocular media opacities complicate retinoblastoma management by precluding tumor visualization (1).

Intraocular lens (IOL) implantation has become the standard for correction of aphakia in children older than 2 years (4). IOLs in pediatric patients are an attempt to decrease amblyopia (5). Modern cataract surgery evolved to small-incision, sutureless phacoemulsification technique that, combined with posterior chamber foldable IOL, produces excellent visual results (6, 7). Reports show that posterior chamber polymethyl methacrylate (PMMA) IOL implants are beneficial visually and generally well-tolerated in eyes with radiation-induced cataracts and regressed retinoblastoma (1, 3, 5).

Purpose

The purpose of this case report is to describe the surgical approach and outcome of cataract surgery with IOL implantation for a radiation-induced cataract in the only eye of a child with regressed retinoblastoma after treatment.

Case report

A 5 year-old boy, diagnosed with bilateral sporadic retinoblastoma at age 3, was treated with systemic chemotherapy, enucleation of the unsalvageable left eye (OS), and external beam radiation therapy due to vitreous seeds in the right eye (OD). After treatment, he had 20/25 visual acuity OD and three type II regression lesions. Approximately 3 years after radiation therapy, vision OD de-

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creased to 20/100 due to cataract. CT scan of the brain and orbits showed no signs of tumor recurrence. Based on the child's age and tumor treatment results, cataract surgery was advised. Small incision sutureless phacoemulsification surgery under general anesthesia using the Legacy System (Alcon Laboratories Inc., Fort Worth, TX) was performed as previously reported and followed by posterior chamber hydrophobic acrylic foldable IOL implant (AcrySof, Model SA60AT, Alcon Laboratories Inc.) (7, 8). Surgery was uneventful. One week after surgery visual acuity was 20/25 OD and a year later, 20/20. The patient has been followed postoperatively for 27 months. He has experienced minor clouding of his posterior capsule that has not required a capsulotomy and has shown no signs of tumor recurrence.

DISCUSSION

Aggressive conservative treatment for retinoblastoma has achieved a good rate of globe salvage without impairing survival (2). Regardless of the type of radiotherapy used, cataract may be induced (9, 10). Other causes of reversible visual loss after intraocular retinoblastoma therapy include vitreous hemorrhage and rhegmatogenous retinal detachment (1, 3, 9). Managing these problems improves vision and allows better tumor monitoring (1).

The reported experience with cataract surgery in patients treated for retinoblastoma is limited (1-3, 5, 7, 9, 10). Several surgical techniques have been reported, and the various surgeons have used different IOL types. The reported cases have also had variable visual potential related to tumor location and prior treatments and different ages of the children at the time of surgery (3, 5, 9, 10). Meanwhile, cataract surgery and intraocular implants have evolved to allow safer, less traumatic, and consequently more efficient procedures even in pediatric patients (4, 6). A recent study has shown considerably lower rates of synechiae and cell deposits in pediatric patients implanted with AcrySof IOL as opposed to PMMA IOL (8). Visual axis opacity is a disabling complication in pediatric cataract surgery (4). AcrySof IOL has maintained a clear visual axis in 60.2% of 103 eyes of children with a mean age of 5.2 ± 5.0 years (range 0.2 to 16.0) with congenital cataract followed up for an average of 2.3 ± 0.9 years (range 1.0 to 4.0 years), suggesting that this particular IOL could be advantageous for retinoblastoma patients (8). Our patient currently has been followed for the same time as the average of that series and presents a minor posterior capsule haze that has not compromised his vision.

Although retinoblastoma recurrence after cataract surgery has been reported in a small number of cases, our patient has not experienced such a problem to date (1, 3). To our knowledge, successful management of radiation-induced cataract in retinoblastoma by small-incision sutureless phacoemulsification and posterior chamber foldable IOL implant has not been previously reported.

The authors have no proprietary interest in any aspect of the article.

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