

CASE REPORT

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Surgical approach to retinal detachment with primary congenital glaucoma

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Abstract

We present the clinical features and treatment approach of a case with congenital glaucoma, trabeculectomy and rhegmatogenous RD, and other ophthalmic complications. A 41-year-old male patient with trabeculectomy due to congenital glaucoma in both eyes was admitted to our clinic due to decreased visual acuity for the past three days. Visual acuity was at the level of hand movement in the right eye, and his left eye was phthisic. The bleb on the upper nasal side of the right eye was well formed but cystic and avascular. Fundus examination revealed a patchy RD in the upper half including the macula. Phacoemulsification and intraocular lens (IOL) implantation combined with pars plana vitrectomy-liquid-perfluorocarbon-air-silicone oil change and endolaser application was performed under general anesthesia. Silicone oil tamponade was removed 2 months later, and IOL was implanted with optic capture in the same session. The final visual acuity was 1/10. There was non-functional, avascular and flat bleb due to bleb sclerosis. From the beginning to the last follow-ups, progressive shallowing of the bleb was observed in anterior OCT sections. In a patient with monocular buphthalmos, cataract surgery combined with RD surgery involves multiple risks. In this case, we achieved good visual and anatomic outcome of the retina, but we had bleb functional loss because of bleb sclerosis. We recommend periodic fundus examinations in patients with congenital glaucoma. Rhegmatogenous RD in patients with congenital glaucoma can be reattached, but full recovery may not be achieved.

Keywords: Congenital glaucoma, retinal detachment, trabeculectomy

Introduction

Rhegmatogenous retinal detachment (RD) is rarely seen in cases of surgical intervention due to congenital glaucoma. We present the clinical features and treatment approach of a case with congenital glaucoma, trabeculectomy and rhegmatogenous RD, and other ophthalmic complications.

Case Report

A 41-year-old male patient with trabeculectomy due to congenital glaucoma in both eyes was admitted to our clinic due to decreased visual acuity for the past three days. He had been using topical dorzolamide-timolol maleate and brimonidine for about 30 years. He was diagnosed with buphthalmos in the right eye and phthisis in the left eye. The left eye had RD surgery previously. Visual acuity was at the level of hand movement in the right eye, and the left eye had no light perception. The autorefractometer was -7.00 (-1.75 90) in the right eye. Corneal diameter of the right eye was 14 mm, and Haab striae were present. Intraocular pressure (IOP) was 20 mmHg. The axial length was 29.51 mm and pachymetry was 600 μ m. Keratometry values were K1: 34.33, K2: 36.29 diopter. The bleb on the upper nasal side of the right eye was well formed but cystic and avascular on slit-lamp biomicroscope examination. Conjunctival hyperemia was also present [Figure 1 A].

Fundus examination revealed a patchy RD in the upper half including the macula, and no tears were present. Cup disk ratio was 7/10. B mode ultrasound showed that the right eye had RD in the upper half, and detachment of the posterior hyaloid was present [Figure 1 B].

Phacoemulsification and intraocular lens (IOL) implantation combined with pars plana vitrectomy-liquid-perfluorocarbon-air-silicone oil change and endolaser application was performed under general anesthesia.

Post-op corrected visual acuity was 1/10. There was slight nasal decentralization in the bag IOL. IOP was measured to be 28 mmHg with dorzolamide hydrochloride and timolol maleate combination at 1 month and oral acetazolamide treatment was added. Silicone oil tamponade was removed 2 months later. IOL was implanted with optic capture by creating posterior capsulotomy to provide centralization in the same session.

The final visual acuity of the patient was 1/10 (-1.75*15) at the first month visit after post-silicone removal. Visual acuity has not changed at the sixth month. There was non-functional, avascular and flat bleb due to bleb sclerosis.

From the beginning to the last follow-ups, progressive shallowing of the bleb was observed in anterior OCT sections [Figure 2].

Fundus examination showed a fully attached retina and mild optic disc pallor [Figure 3].

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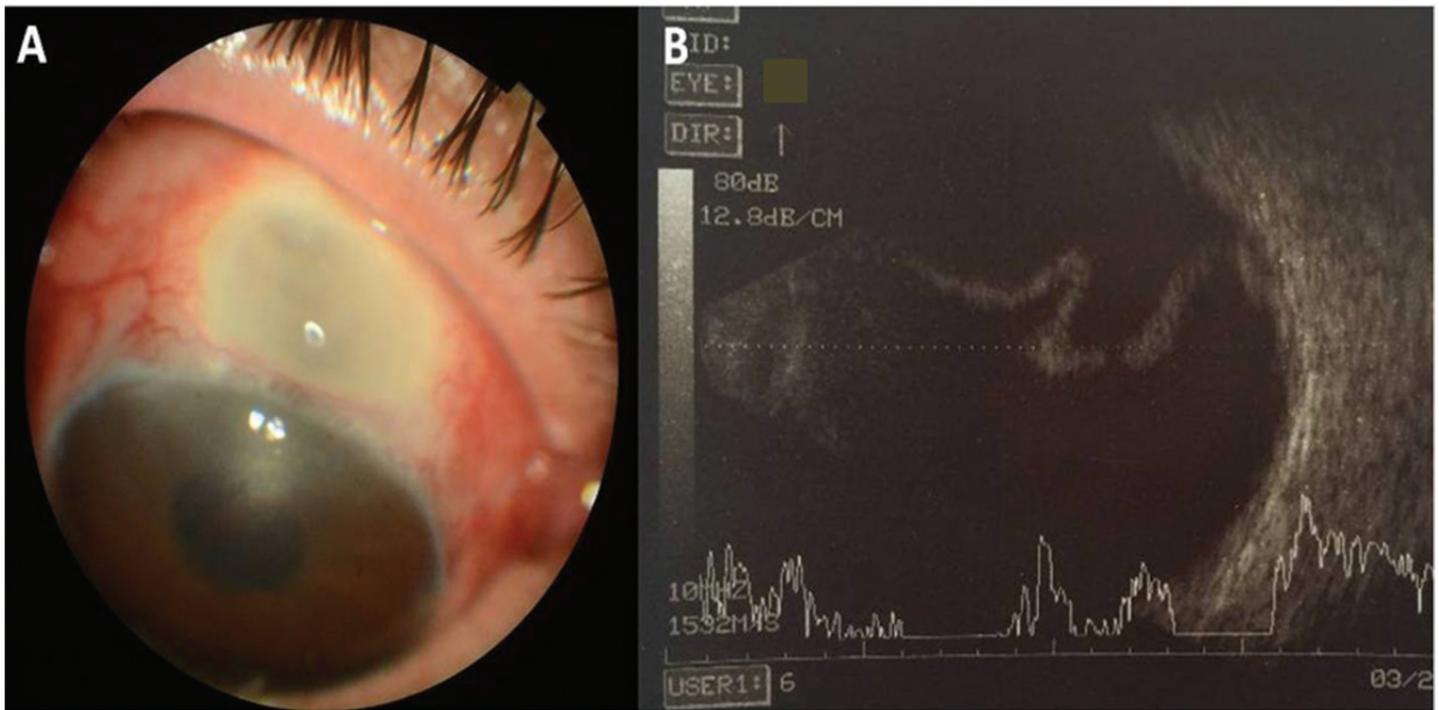


Figure 1 A. Anterior segment view of trabeculectomy bleb and B: Retinal detachment is seen in ocular B- mode ultrasonography before surgery

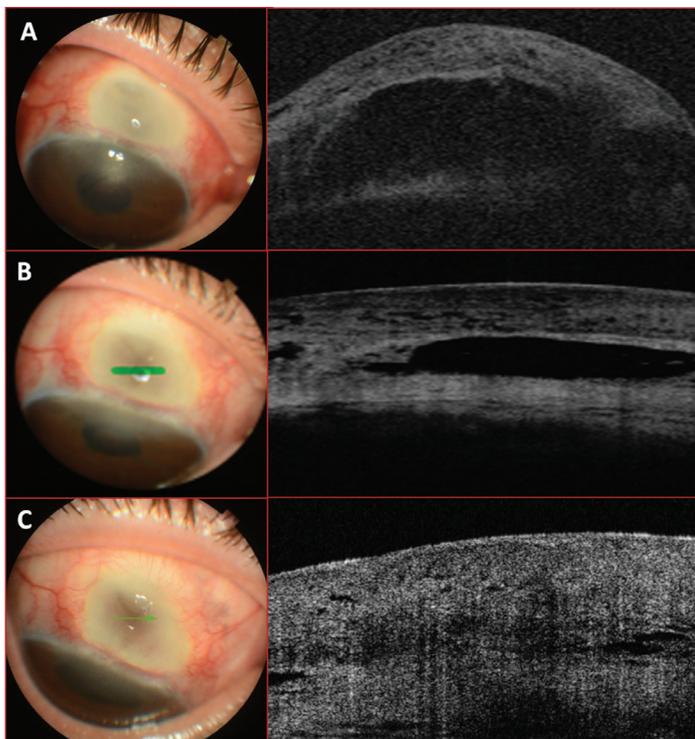


Figure 2. Image of avascular bleb and horizontal cross-section view in anterior segment OCT, A: preoperative, B: at 2 months postoperatively, C: at 6 months

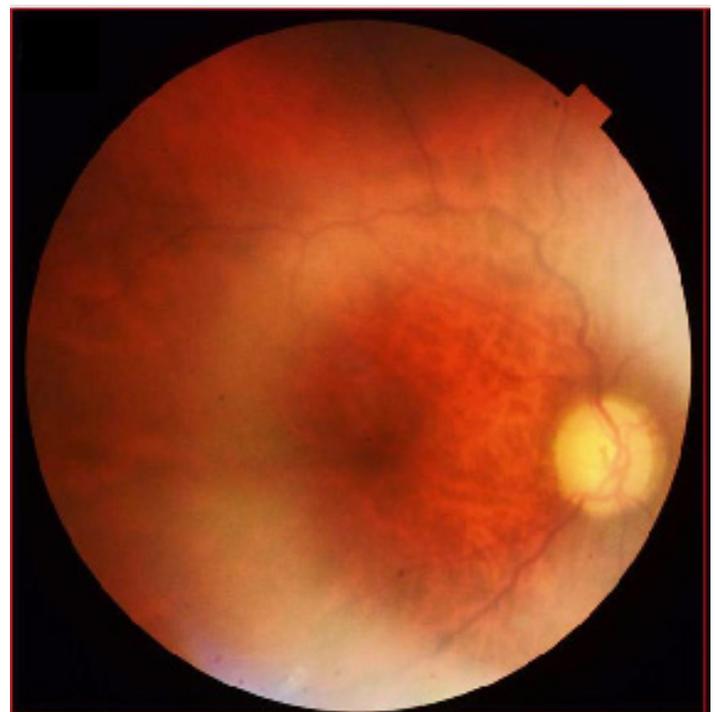


Figure 3. Fundus image at 6 months postoperatively.

Conclusion

Axenfeld reported the first case of congenital glaucoma associated with RD, believing that RD was one of the reasons for blindness in congenital glaucomas. Satofuka et al. studied 3 RD cases. Ruptures in the equator region of the RD were regarded as the cause in 3 cases with myopia patients at 14, 43 and 48 years of age. They all had a history of surgery due to congenital glaucoma [1]. RD was treated with surgical vitrectomy, but visual acuity remained

low. The authors thought that posterior vitreous detachment due to advanced vitreous liquefaction in high myopic eyes causes the RD.

The Arabian Peninsula is the most common site of primary congenital glaucoma. Al-harhi et al. studied 34 cases of non-traumatic RD and coexisting primary congenital glaucoma [2]. Buftalmos, elevated IOP and corneal scarring were present in all cases. In 7 of 26 cases after trabeculectomy, intravitreal hemorrhage and choroidal detachment were seen. Total RD was detected in 33

eyes and PVR in 21 eyes. It is emphasized that RD is noticed late because of decreased vision before RD.

Dietlein TS has indicated that cataract extraction may lead to increased IOP mid-term and long-term in the case of well-functioning filter bleb [3]. It has been suggested that other filtration surgery may be required, and that the IOL may be decentralized. Dua HS suggests that extracapsular cataract extraction with a posterior chamber IOL sutured to the posterior surface of the iris and anterior capsule is a useful option in patients with anterior megalophthalmos and cataract [4]. We implanted IOL with optic capture by creating posterior capsulotomy to provide centralization.

In a patient with monocular buphthalmos, cataract surgery combined with RD surgery involves multiple risks such as corneal decompensation, intraocular hemorrhage, intraocular pressure (IOP) rising and proliferative vitreoretinopathy. In this case, we achieved good visual and anatomic outcome of the retina, but we

had bleb functional loss because of bleb sclerosis. We recommend periodic fundus examinations in patients with congenital glaucoma. Rhegmatogenous RD in patients with congenital glaucoma can be reattached, but full recovery may not be achieved.

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