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SHORT COMMUNICATION

Case report

Propionibacterium acnes endophthalmitis in Ahmed glaucoma valve

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PURPOSE. *To report a case of* Propionibacterium acnes *endophthalmitis in a patient with an Ahmed glaucoma valve.*
CASE REPORT. *A nine-year-old boy with bilateral congenital glaucoma, with an Ahmed glaucoma valve implanted in the left eye, had recurrent conjunctival dehiscence and endophthalmitis.*
RESULTS. *Vitreous cultures demonstrated the presence of* Propionibacterium acnes*.*
CONCLUSIONS. *This is the first reported case of* Propionibacterium acnes *endophthalmitis in an Ahmed glaucoma valve and the second one in a glaucoma drainage device. We strongly recommend using a patch graft to prevent and treat tube exposure. Conjunctival grafts may be useful to close the conjunctiva when there is marked scarring to prevent patch exposure and melting or extrusion. (Eur J Ophthalmol 2001; 11: 383-5)*

KEY WORDS. Propionibacterium acnes*, Endophthalmitis, Ahmed valve, Glaucoma drainage device, Tube exposure, Batch grafts*

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INTRODUCTION

Endophthalmitis is an uncommon complication after aqueous tube shunt implantation. *Propionibacterium acnes* endophthalmitis is well known after cataract surgery, but only one case has been described in a Molteno glaucoma device. We report a case in a patient with an Ahmed glaucoma valve and recurrent conjunctival dehiscence.

Case report

A nine-year-old boy had bilateral congenital glaucoma secondary to facial angioma. Trabeculectomy had been performed on his left eye twice at ages 2 months and 5 years, and on his right eye at age 5 years. At age 9 years, an Ahmed glaucoma valve was implanted in the left eye under a patch graft and the tube was introduced in the anterior chamber through a tunnel made by a 23 G needle. Pressure control was good but three weeks after surgery conjunctival dehiscence along the conjuntival suture was noted with tube exposure. It recurred twice despite repeated conjunctival suture; the first time no patch was used but the second time a fascia lata patch was placed on the dehiscence and the conjunctiva sutured over it.

Five months after valve implantation the boy was admitted to hospital with pain in his left eye, visual acuity reduced to hand movements, purulent discharge, conjunctival dehiscence with tube exposure, flare 3+, anterior chamber cells 2+, intraocular pressure 30 mmHg, and a whitish plaque over the lens. Samples for culture were taken from the anterior chamber and the conjunctival dehiscence was sutured with direct closure. With topical and systemic anti-inflammatory and antibiotic therapy the inflammation was rapidly resolved. Anterior chamber cultures were negative. Two weeks

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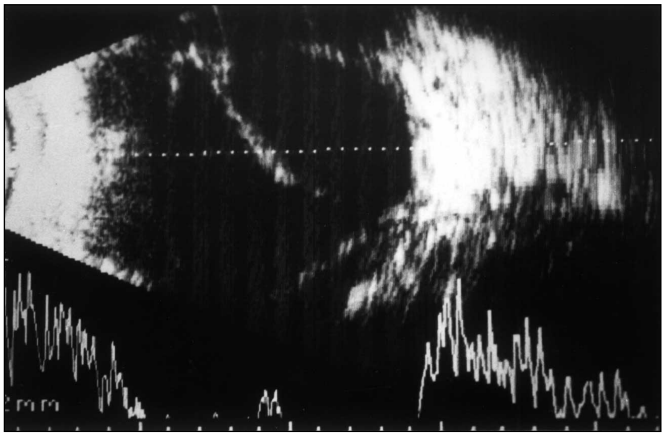

Fig. 1 - *Ecography showing massive choroidal detachment.*

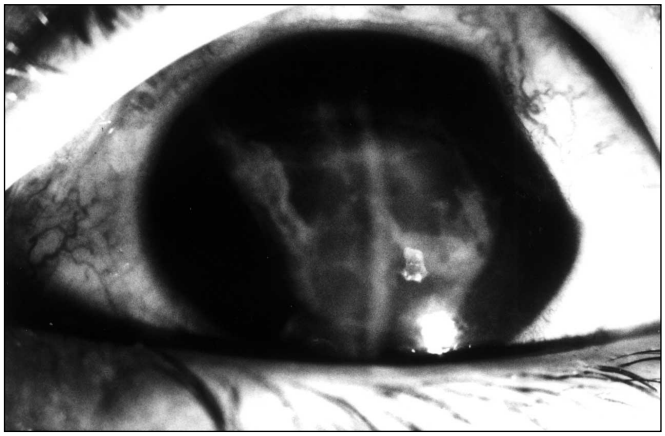

Fig. 2 - *Whitish membrane growing along the tube in the anterior chamber.*

later the visual acuity was 20/200, intraocular pressure was 8 mmHg without treatment; there was a posterior capsular cataract and the fundus was normal except for the optic disc cupping. In the follow-up, the conjunctival dehiscence recurred again, and was finally closed by a fascia lata implant and a conjunctival graft from the inferior conjunctival sac. After that, topical treatment was gradually reduced.

Seven weeks after discontinuation of topical antibiotic treatment, the boy was admitted again with visual acuity reduced to light perception, purulent dicharge, corneal edema with inferior endothelial precipitates, intraocular pressure 30 mmHg and a whitish fibrinous material which almost filled the anterior chamber and precluded the visualisation of the iris and the valve tube, but there was no hypopion and no conjunctival dehiscence. With anti-inflammatory and antibiotic therapy the anterior chamber cleared, and a dense vitreous condensation could be seen just behind the lens. Echography showed a large nasal choroidal detachment (Fig. 1). On the following days, a whitish membrane could be seen growing along the Ahmed tube from the posterior chamber towards the limbus (Fig. 2). The valve was removed, as was the lens, and a pars plana vitrectomy was done, revealing a total retinal detachment and retraction.

RESULTS

Vitreous cultures demonstrated the presence of *Propionibacterium acnes*, but valve cultures were negative.

DISCUSSION

This is the second reported case of *Propionibacterium acnes* endopthalmitis in a glacuoma shunt device and the first one in an Ahmed valve. *Propionibacterium acnes* endophthalmitis is well known after cataract surgery, and typically presents as a late-onset, recurrent, steroid-responsive uveitis occuring months or even years after intraocular lens implantation. *Propionibacterium acnes* is a gram-positive anaerobic bacillus whose natural habitat is the human sebaceous follicle. Its affinity for silicone and plastics such as the PMMA of the intraocular lenses may aid in its sequestration and the development of endophthalmitis.

Fanous and Cohn (1) reported in 1997 the first known case of *Propionibacterium acnes* endophthalmitis in a patient with a glaucoma tube device; the patient had undergone Molteno tube repositioning due to corneal touch eight weeks earlier, and was treated with temporary tube withdrawal and intracameral antibiotics, but the infection recurred with reinsertion of the tube. Conjunctival dehiscence or tube repositioning, present in the two reported cases, may be the source of the intraocular infection, due to the presence of *Propionibacterium acnes* among the normal flora of the external eye and fornices, and its high prevalence in the operating field (2). Most patients needing glaucoma tube shunt device surgery have had previous surgery, and conjunctival scarring may facilitate early postoperative conjunctival dehiscence, as in the case we present. Late conjunctival erosion by the tube is also possible. Patch grafts are commonly used to

cover the subconjunctival portion of the tube and to prevent exposure. Several materials have been used as patches, including autologous and human donor sclera and preserved human cadaveric pericardium, fascia lata and dura mater. They are all well-tolerated although some thinning may occur in the long- term. We commonly use human donor sclera or fascia lata patch grafts. In this case we used a fascia lata patch, but it was exposed because of conjuntival retraction, and was extruded. Finally, a conjunctival graft taken from the inferior conjunctival sac was placed over the fascia lata patch and the dehiscence was definitively closed.

The treatment of endophthalmitis in eyes with glaucoma shunt devices remains controversial. In our case, as in the one reported by Fanous and Cohn (1), the cultures from the glaucoma device were negative, and there are cases with a good response to intravitreal antibiotics with the seton in place (3), but extraction of the shunt may help by removing a possibly contaminated foreign body. Aggressive surgical management with removal of the infected tissues and prosthesis is strongly recommended for a good visual outcome (4).

We firmly recommend using a patch graft to cover the tube when placing the glaucoma tube shunt device and in case of tube exposure. Conjunctival grafts may be useful to close the conjunctiva when there is heavy scarring, to prevent exposure and melting or extrusion of the patch.

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