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Case Report: Open Access

Removal of Extruded Ex-Press Miniature Glaucoma Device in a Case with Ahmed Glaucoma Valve: A Case Report

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Abstract

Here, we report our experience with explanation of ex - press miniature glaucoma device which extruded due to conjunctival erosion in a case with Ahmed glaucoma valve implant. After explanation of the shunt, opening-insertion site on the cornea was covered with conjunctival autograft. Although transient hypotony and limited choroidal detachtment were observed in the first two days, no complications related to failure of Ahmed glaucoma valve occurred. Because of an increasing number of patients with ex-press miniature glaucoma device, complications are observed more frequently. Surgeons might consider similar approach under such conditions.

Keywords

Ahmed glaucoma valve, Ex-Press tube shunt, Tube exposure management

Introduction

Over the years, the ex-press miniature glaucoma device have gained increasing popularity as an alternative to trabeculectomy [1-4]. However, implantation of them under¬neath the conjunctiva resulted in various complications including conjunctival erosion, extrusion, hypotony, suprachoroidal hemorrhage, sub-conjunctival scar tissue formation and other adverse effects [2,5,6]. We herein reported our experience with explanation of ex-press miniature glaucoma device which extruded due to conjunctival erosion in a case with an Ahmed glaucoma valve implant in the same eye.

Case Report

A 70-years-old man with advanced open angle glaucoma in both eyes has been followed up in our clinic for longer than 5 years. On the last examination, visual acuity was finger counting at 4 meter in the right eye, and 0.2 in the left eye. Intra ocular pressure (IOP) was 14 mm Hg in right eye and 16 mm Hg in the left eye. There was an ex-press miniature glaucoma device at 12 o'clock position which had been implanted about ten years ago in the left eye. In addition, conjunctival erosion and implant exposure were observed (Figure 1A). During 3 months follow-up, Seidel test was negative because of obstruction of the external plate lumen with fibrin plug. Furthermore, left eye had received Ahmed glaucoma valve implant placed in the superior temporal area, and diode laser cyclophotocoagulation. We decided to remove ex-press device for reducing risk of long term postoperative endophthalmitis.

In our surgical technique we entered the anterior chamber with a 20G MVR knife adjacent with the implant and turned express shunt sideways, its spur towards the stab incision. Then it was easy to pull ex-press shunt away. The incision site was sutured with a 10/0 nylon but was leaky due to round opening of the shunt in limbal area. It was not possible to pull superior conjunctiva over the incision so we decided to remove an autograft from inferior conjonctiva which was placed and sutured with 10/0 nylon sutures (Figure 1B).

During the postoperative follow-up, transient hypotony(ranged from 4 to 10 mm Hg for ten days) and limited choroidal detachtment were observed (Figure 1C). On the last examination, satisfactory graft healing was observed (Figure 1D). Seidel test was negative and inraocular pressure was 14 mmHg. Choroidal detachment regressed, and also no complication related to failure of Ahmed glaucoma valve was observed.

Conclusions

The initial results following these glaucoma devices performed under conjunctival flaps were disappointing due to early postoperative hypotony and late device erosions/extrusions. Changing subconjunctival approach towards implantation of it under the scleral flep has yielded encouraging results.

On the other hand, implant extrusion and conjunctival erosion following both surgical approach may still be encountered. Also a case of endophthalmitis occurring shortly after ex-press implantation under a partial-thickness scleral flap was reported by Cherof et al. They performed pars plana vitrectomy with injection of intravitreal antibiotics, however, the corneal infiltrate enlarged and the back plate of the device became partially exposed. Clinical improvement was not achieved until the device was removed and the original surgical site was reinforced with a patch graft. Authors recommend that clinicians should consider early device removal to achieve resolution of infection [7]. In this case, although Seidel test was negative we prefered to remove ex-press tube due to increased risk of endophthalmitis. In a case series, by Joshua et al. exposed ex-press miniature glaucoma device were removed and to cover the sclerostomy, a scleral graft and conjuntival flap were used. In 5 eyes, the visual acuity worsened following the device removal. Intraocular pressure ranged from 8 to 17 mm Hg. Any other complication was not observed [8].

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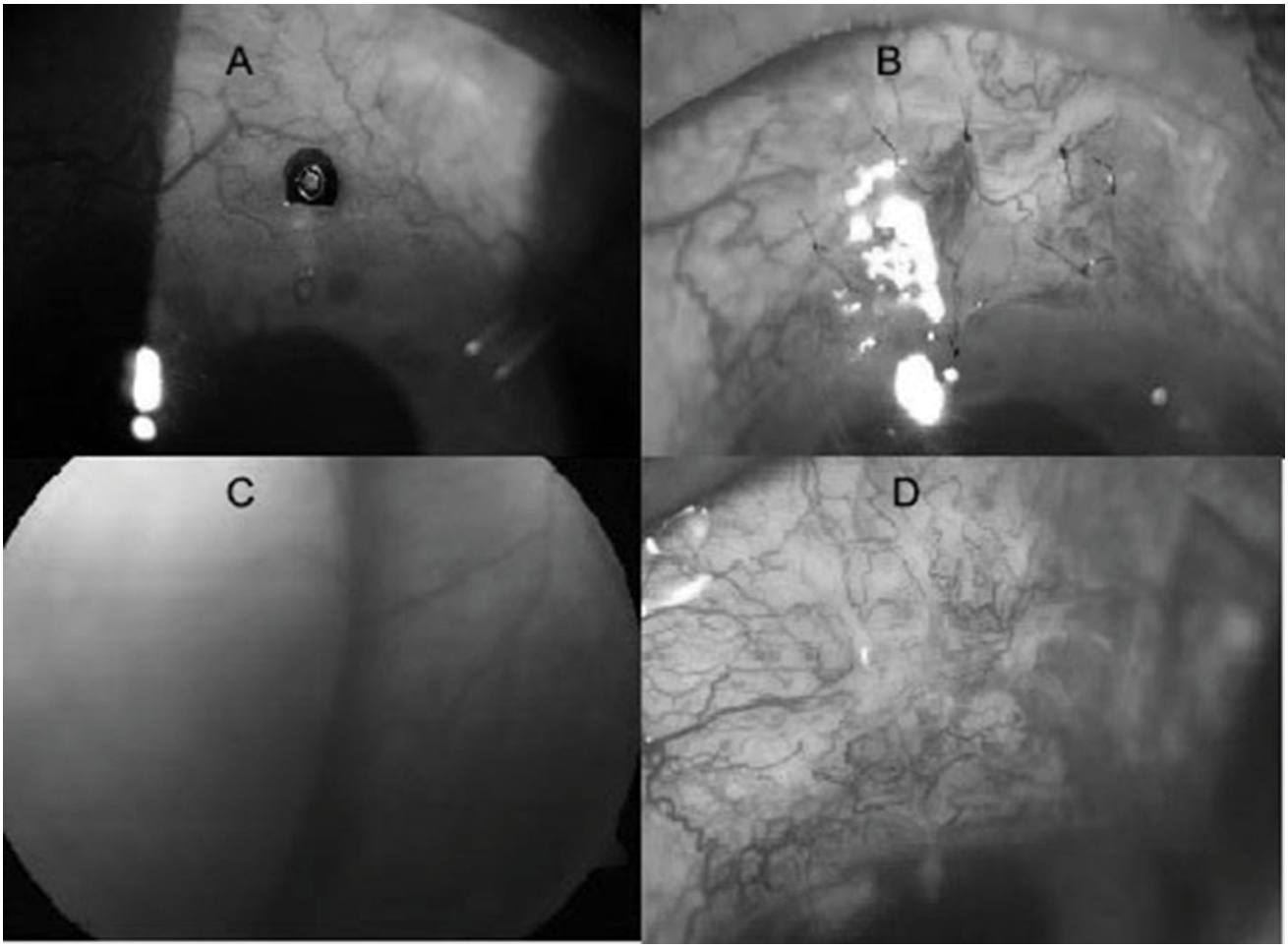

Figure 1: Exposition of Ex-press shunt **(**A), Demonstration of conjunctival autograft placed on remaining aperture (B), Limited choroidal detachment (C), Smooth conjunctival surface and scatrisation at last visit (D).

In this case, the patient had an advanced glaucoma and had multiple operations even including diode laser cyclophotocoagulation which made us more cautious. We thought that use of a conjunctival flap or graft might help to avoid potential complications including wound leakage, hypotony, infection, epithelial downgrowth. So we covered corneal round aperture using conjunctival autograft. Although, hypotony and limited choroidal detachtment were observed at early postoperative period, we did not observe any complication related to Ahmed glaucoma valve. Following graft healing, detachment regressed and hypotony improved. Furthermore, IOP has now been under control without antiglaucoma medication.

In conclusion, because of an increasing number of patients with ex-press miniature glaucoma devices, complications may be observed more frequently which may necessitate device removal with minimal operative trauma with similar approaches as described in this case.

Statement of Ethics

This case report description followed the Helsinki Declaration criteria, and written informed consent was obtained from the patient for publication of this article and any accompanying images. The Institutional Review Board and Ethics Committee ruled that approval was not required for this study.

Disclosure Statement

Each author warrants that he/she has no commercial associations that might pose a conflict of interest in connection with the submitted article.

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