Case Report

Re-Erosion of Patch Graft of Ahmed Glaucoma Valve after Simple Conjunctival Closure: What Next?

Avik Kumar Roy* and Harika Mudunuri
Glaucoma Services, L V Prasad Eye Institute, Patia, Bhubaneswar, India

Abstract

A 3 year old boy with vernal keratoconjunctivitis in both eyes had developed steroid induced cataract and glaucoma in left eye, for which he underwent sequential combined trabeculotomy-trabeculectomy and cataract surgery. The intraocular pressure became uncontrolled on maximal tolerated medical therapy; hence Ahmed Glaucoma Valve implantation was done in his left eye. At postoperative 1 week, there was a small area of conjunctival wound dehiscence over the corneal patch graft which increased considerably in size over next week necessitating urgent repair by conjunctival closure. After two weeks repeated eye rubbing by the child led to recurrence of the wound gap which was closely monitored and managed conservatively with oral doxycycline.

ABBREVIATIONS

AGV: Ahmed Glaucoma Valve

INTRODUCTION

Ahmed Glaucoma Valve Implantation is an important armamentarium in the management of refractory glaucoma like pseudophakic glaucoma in pediatric age group [1]. Though effective, complications are not uncommon [2,3]. However conjunctival dehiscence is relatively rare and previously has not been reported in this age group. Here we present a case of failed repair of conjunctival dehiscence over corneal patch graft which was managed with conservative therapy.

CASE PRESENTATION

A 3 year old boy suffering from steroid induced glaucoma from long standing vernal keratoconjunctivitis, underwent combined Trabeculotomy- Trabeculectomy procedure in his left eye. The intraocular pressure (IOP) came into control but he developed progressive cataract needing lens aspiration, primary posterior capsulorhexis, anterior vitrectomy plus posterior chamber intraocular lens implantation after 4 months. The IOP began to rise from one month following the cataract surgery—hence he was restarted on two antiglaucoma medications namely Dorzolamide 2% plus Timolol 0.5% combination. At 6-months visit, the IOP was 22mm Hg with progressive disc damage (0.9 cupped with diffuse nerve fiber loss). So prostaglandin analogue Latanoprost 0.005% was added. The IOP refused to get controlled even after this—hence Ahmed Glaucoma Valve (AGV) implantation was advised in his left eye under general anesthesia. We used an FP8 silicone implant with the tube securely placed under a donor cadaveric corneal patch graft. The surgery went uneventful. However at first postoperative week, there was a small area of conjunctival dehiscence measured about 1x1.5mm over the patch graft (Figure 1). As there was neither any plate exposure or tube erosion, we kept the child under close observation. However, the defect area enlarged considerably over next week (Figure 2). This time the patient revealed the history of eye rubbing. The defect area was closed by simple conjunctival closure with 8-0 vicryl atraumatic sutures. Sadly the conjunctival dehiscence recurred after two weeks (Figure 3)—possibly because of repeated eye

Figure 1 Slit lamp photograph showing an area of 1x1.5mm conjunctival defect overlying the patch graft.
rubbing by the patient. There was no leak from conjunctival dehiscence. This time the eye also faced the hypertensive phase with the IOP shooting up to 32 mm Hg with tense bleb (Figure 4). Apart from restarting on antiglaucoma medications to manage the hypertensive phase, we had a dilemma of repeat repair of the conjunctival defect (a conjunctival autograft may be) versus conservative management. As the IOP came under control and because the child had already experienced multiple surgical traumas to the conjunctiva, we started on low-potent steroid drops together with oral doxycycline 100 mg once daily. The exposed corneal patch graft began conjunctivalization in two weeks’ time (Figure 5) and was complete by two months time—Figure 6. The oral doxycycline was discontinued after 2 months but antiglaucoma medications were not. At the latest follow up of 6 months, the best corrected visual acuity was 20/30, IOP was 14 mm Hg on two antiglaucoma medications, anterior chamber was deep with tube in situ and a well healed bleb (Figure 7). The anterior segment tomography image shows the tube buried well inside the conjunctival layer (Figure 8).

**DISCUSSION**

Ahmed Glaucoma Valve implantation, though effective in difficult situations, is not free of complications. Two landmark studies on AGV namely the TVT (trabeculectomy versus tube) and the ABC (Ahmed and Baerveldt Comparison) study revealed the early and late postoperative complications range from 21% to 41.7% [2,3]. However, conjunctival dehiscence was not being reported in either. Causes attributed to plate exposure and tube erosion are inadequate conjunctival closure and thinning of the patch graft or overlying conjunctiva from pressure necrosis [4] or immune mediated inflammatory process [5]. Other possible predisposing factors can be mechanical pressure from repeated...
lid blinking or forceful rubbing of the eye especially in children. The management options reported so far in the literature are observation, explantation, repositioning the implant at different location, repair of the exposure with additional patch graft, amniotic membrane, oral buccal mucous membrane or a combination of these, [4,6,7] Conjunctival complication or dehiscence without implant exposure is obviously more benign entity and we believe, thereby under-reported in literature. Till date, the largest retrospective series [8] of 158 eyes with AGV developed conjunctival dehiscences in almost one-third of the cases. Interestingly 90% the cases responded to conservative management—with only five patients needing resuturing. The median ages of the patients in the series were 64±16.2 years. Doxycycline (6 deoxy-5-hydroxytetracycline) is a metal ion chelator and a broad spectrum antibiotic, which causes differential inhibition of the activity of members of the matrix metalloproteinase (MMP) family [9]. This in turn leads to lesser matrix degradation and thus hastens wound healing. Its use in treating conjunctival melt over an exposed scleral patch in an elderly patient with neovascular glaucoma has already been reported [10]. Though the use of tetracycline group of medicines in children is contraindicated because of the reported side effects of permanent teeth discoloration, doxycycline has a better safety profile. The World Health Organization [11] recommends that “doxycycline is better used in younger children only when other drugs are likely to be in effective and when benefits clearly outweigh risks”. To the best of our knowledge, conjunctival dehiscence over corneal patch graft following AGV has not been reported in young individual previously. The fact that made case unique was the recurrence of the conjunctival defect after closure—attributable to repeated eye rubbing by the child—which was liable to cause re-erosion had a second repair procedure been attempted. Hence we resorted to careful wait-and-watch policy with the help of oral doxycycline.

REFERENCES