

# Ectropion Post Ahmed's Glaucoma Valve Implantation: Case Report

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**Abstract:** *To describe, a yet non-documented complication of GDD surgery (glaucoma drainage device surgery) - Ectropion in Day 1 post implant of Ahmed Glaucoma Valve (AGV) tubeinferonasaly. This report present a patient with advanced open angle glaucoma. He underwent filtering surgery with AGV on the right eye following which he developed right lower lid ectropion in the first day after the surgery. The detailed ocular history, ophthalmic findings, clinical course and surgical management is discussed. Conclusion: Ectropion in early postoperative period following implant of AGV has not been described and could be a possible complication.*

**Keywords:** Ahmed glaucoma valve, Ectropion, Ophthalmology

## 1. Introduction

The Ahmed glaucoma valve (AGV) is one of the currently most commonly used implants for aqueous drainage. It lowers intraocular pressure (IOP) by draining aqueous humor through a tube to a subconjunctival end plate. The AGV contains a one-way valve, which opens in response to a pressure increase in the anterior chamber<sup>1,2</sup>. Many early and late postoperative complications<sup>3,4</sup> have been reported but an ectropion in the early postoperative period is yet unrecorded.

## 2. Case Report

### 2.1. Presentation

An 84 year old patient referred to our out patients clinic for high intraocular pressure in the right eye. No previous ocular history of trauma, lasers, surgery or other ocular diseases. No family history of glaucoma. No past history of ocular or systemic medications.

On Examination, local examination of the face was unremarkable. Snellen's visual acuity testing revealed CF (counting fingers) vision in the right eye and 20/40 in the left eye. Pupils exam showed an afferent pupillary defect in the right eye. Intraocular pressure was 25 mmHg in the right eye and 17.5 mmHg in the left eye evaluated by Goldman tonometer. Central Corneal thickness was 445 um in the right eye and 435 um in the left eye. The Lens has mild cataract in both the eyes. Gonioscopy was performed in both the eyes which showed open angles. Dilated fundus exam was performed. A normal size optic disc with a cup disc ratio 0.85 was present in the right eye and 0.5 in the left eye.

Visual field test revealed an altitudinal defect with mean deviation -18 db in the right eye and mild nasal step defect with mean deviation -4 db in the left eye. Retinal nerve fiber analysis showed thinning in all quadrants in the right eye and superior and inferior quadrant thinning in the left eye.

The patient was diagnosed with an advanced open angle glaucoma in the right eye and mild glaucoma in the left. The patient was started on anti-glaucoma drops. In the follow up visits the intraocular pressure was controlled in the left eye but continued to be raised in the right eye. For such an

advanced glaucoma in the right eye with uncontrolled pressure, Ahmed tube shunt was selected to be the next step in the management of this patient.

### 2.2 Procedure

The patient prepped and draped in the usual sterile manner for intraocular surgery, using Povidone-Iodine drops and solution. 7-0 vicryl traction suture was used to expose the superotemporal quadrant. Westcott scissors were used to create a limbal periotomy at superotemporal quadrant with radial relaxing conjunctival incisions. With Westcott scissors bluntly dissect the area between superior and lateral rectus muscles then sub-Tenons retrobulbar anesthesia was administered at this point.

Stevens scissors were used to bluntly dissect bare sclera in superotemporal quadrant. Muscle hooks were used then to isolate the lateral rectus and superior rectus muscles. Then a FP7 Ahmed's tube was primed. Before suturing the reservoir, an extended staphyloma involved the superotemporal quadrant was noticed. Then the plan changed to insert the tube in the inferonasal quadrant. Conjunctiva was closed with 7-0 vicryl suture and limbal periotomy was created in the inferonasal quadrant. Thereafter, the reservoir was sutured to the sclera posterior to muscle's insertion with 9-0 Nylon interrupted suture.

Westcott scissor were used to cut the tube in appropriate length in beveled fashion. Paracentesis was done temporally with a sharp blade.

Following this, a bent 23 gauge needle was used to enter the anterior chamber above the iris and beneath corneal endothelium. The tube was then inserted through the sclerostomy with tying forceps. Then a donor scleral patch graft was cut with Stevens scissors then placed over the tube and sutured with 7-0 vicryl. The conjunctiva and Tenon's tissue were re-anteriorized and the conjunctiva was re-apposed to limbal area using 7-0 vicryl suture.

At the end of the case the anterior chamber depth was checked and tube position was re-checked. The eye was dressed with corticosteroid and antibiotic ointments and patched and shielded.

### 2.3 Postoperative follow up

Day 1 post-op, Intraocular pressure was 8mmHg, formed anterior chamber, mild anterior chamber reaction and tube in good position. Right lower lid ectropion was noticed (fig1). The patient referred to oculoplastic surgeon and lower lid ectropion was repaired 1 month after glaucoma surgery (fig 2).

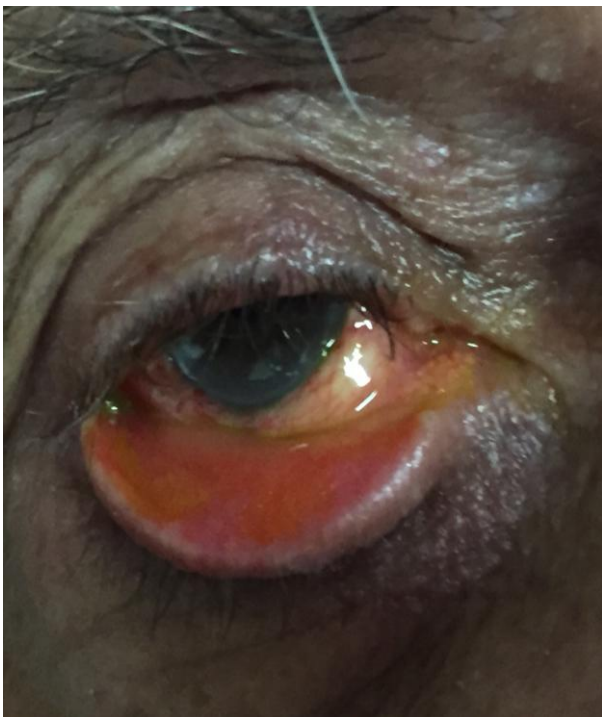
### 3. Discussion

Ahmed glaucoma valve<sup>5,6</sup> is an established modality of management of advanced glaucoma cases with cumulative probability of successful outcome reported from different studies ranges from 76% to 87% at 1 year and 68% to 77% at 2 years<sup>7-9</sup>. Several early and late postoperative complications<sup>3</sup> have been reported in the literature including transient hypotony (19.5%), shallow anterior chamber (14.5%), tube blockage (11.3%), hemorrhage (7.2%), encapsulated bleb (hypertensive phase)(10.9%), exposure of tube (5.0%), tube malposition (4.5%), corneal decompensation (2.3%), extrusion of implant (1.4%), and rarely endophthalmitis (1.7%)<sup>4</sup>. To our knowledge, no previous report of lower lid ectropion in the first day post glaucoma tube implant.

Predisposing factors for developing ectropion in this case are age-related weakness of canthal ligament and pretarsal orbicularis muscle. Using of lid speculum intraoperatively may added a mechanical or iatrogenic factor.

### 4. Conclusion

Ectropion in early postoperative period following implant of AGV has not been described and could be a possible complication.



**Figure 1:** demonstrating lower lid ectropion post Ahmed's tube insertion inferonasally.



**Figure 2:** lower lid post ectropion repair

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