

Commentary: Aurolab aqueous drainage implant: Posterior versus anterior segment implantation

Glaucoma drainage devices (GDDs) have become an important part of armamentarium of a glaucoma surgeon for refractory glaucoma with previous failed trabeculectomy and scarred conjunctiva. Aurolab aqueous drainage implant (AADI) is a relatively new and a low-cost alternative to Ahmed valve. It is a nonvalved implant based on the prototype Baerveldt with surface area of 350 mm².

Though AADI is available in India, there is limited literature about the implant. Reji Philip *et al.*^[1] reported intermediate-term outcome and Ray *et al.*^[2] reported the one-year outcome of AADI in adult refractory glaucoma.

In a standard procedure, the tube of GDD is placed in the anterior chamber (AC) and shunts aqueous humor to a subconjunctival end plate. However, GDD tubes placed into the AC can cause significant anterior segment complications such as tube endothelial touch, tube block with iris, vitreous, and tube erosion.^[3,4] The presence of a tube in the AC has been associated with a relatively high incidence of corneal graft failure after penetrating keratoplasty and carries a risk of decompensation in previously compromised corneas. It is technically challenging to place tube in AC in patients with inadequate anatomical space and extensive peripheral anterior synechie.

In such situations, where placing tube in AC is either difficult or risky, pars plana placement of tube in the vitreous cavity is a good alternative. Pars plana insertion of a GDD was first described in 1991.^[5] Pars plana vitrectomy is necessary to facilitate insertion of tube in the posterior segment (PS). However, this procedure carries several intraoperative and postoperative risks in addition to increased operative time and expense. Vitreous can block the ostium of the tube causing failure of IOP control. There is potential for late retinal detachment as retinal tears can develop from vitreous incarceration in areas of the sclerotomy incisions.

There are a few comparative studies which have compared these two types of placement of AGV tube and found that both the procedures had similar efficacy.^[6,7]

The present paper by Maheshwari D *et al.*^[8] is the first direct comparison between posterior and anterior placement of the AADI. The authors have evaluated the clinical outcome of AADI inserted in posterior segment in eyes undergoing concurrent pars plana vitrectomy compared with anterior chamber tube placement in non vitrectomized eyes.

At 12 months, the success rate was 84% in the AC group and 72% in the PS group. AADI implanted at either of the site was effective in reducing intraocular pressure (IOP). After 1 year of follow-up, 19% of patients in the AC group and 28% patients in the PS group experienced complications, though not statistically significant. The most common complication in the AC group was tube related (9%) and in the PS group, two cases each of vitreous hemorrhage and endophthalmitis. Choroidal effusion in 3% cases in the PS group. One (3.1%) case had developed flat AC with corneal decompensation

which required penetrating keratoplasty with reinsertion of tube into pars plana.

The decision to implant the AADI in the AC versus the PS should be individualized to the clinical circumstances of each case. Further refinements of clinical judgment will likely require large, prospective, randomized clinical trials.

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