

## Commentary: Clinical outcome of a nonvalved Aurolab aqueous drainage implant in posterior segment versus anterior chamber

The decision for an implant in glaucoma is usually reserved for either of the 2 conditions—either conventional trabeculectomy is likely to fail or has failed.<sup>[1]</sup> Implants provide an equatorial reservoir of aqueous through a permanent sclerostomy using a tube attached to a plate whose size determines the surface area of drainage.

The basic tenet of placing a tube in the posterior segment (PS) requires thorough vitrectomy to prevent tube closure by vitreous tags. Maheshwari *et al.* found marginally better success rates at 1 year for anterior segment placement although the risks of complications were higher in the PS placement.<sup>[2]</sup> In this study, tube placement in PS was done if “concurrent” vitrectomy was done.<sup>[2]</sup> The posterior placement can also be a

staged procedure especially if a tamponading agent is needed in the initial retinal surgery.

Uncomplicated pars plana vitrectomy (PPV) in itself can also cause secondary open-angle glaucoma.<sup>[1]</sup> This is postulated because of increased oxygen tension and consequent oxidative damage to the trabecular meshwork.<sup>[3]</sup> Lens extraction is considered to be a strong risk factor for open-angle glaucoma following uncomplicated PPV.<sup>[3]</sup>

It is important to consider baseline clinical status to ascertain the outcomes of a study. The majority (44%) of subjects in the PS group in this study had traumatic glaucoma. The PS group also had higher preoperative intra ocular pressure (IOP) and required more antiglaucoma medications. This coupled with pars plana vitrectomy may itself influence IOP in the PS group.

The 2 most commonly used implants in the world are Ahmed glaucoma valve (AGV) and Baerveldt glaucoma implant (BGI).<sup>[4]</sup> The aurolab aqueous drainage implant (AADI) provides a low-cost comparable alternative to Baerveldt.

Having a larger surface area than AGV (350 vs 184 mm<sup>2</sup>) and a nonvalved design, implants like BGI or AADI have less likely potential for bleb encapsulation as the tube ligature prevents inflammatory mediators to escape.

Although both approaches can be used, the pars plana approach gives an advantage of avoiding tube-related complications (such as tube-cornea touch) and endothelial decompensation in select cases. Another approach could be the ciliary sulcus in eyes with pseudophakia or corneal diseases.<sup>[5]</sup>

A meta-analysis by Wang *et al.* involving 275 eyes in 4 retrospective studies found similar efficacy of reduction of IOP (weighted mean difference [WMD] -1.01 mm Hg;  $P = 0.52$ ) between pars plana and anterior chamber glaucoma drainage devices.<sup>[6]</sup> Similarly, the WMD for glaucoma medication reduction was 0.23 ( $P = 0.19$ ).<sup>[6]</sup>

Similar trial results should be interpreted keeping in mind potential selection bias because of retrospective nature and different clinical indications for anterior and posterior placements of glaucoma drainage devices. Of particular interest would be to observe the effect on endothelial cell counts in a randomized clinical trial for a larger sample.

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