

Experience with Ahmed Glaucoma Drainage Implant in Ibadan, Nigeria

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Introduction: Valved Glaucoma Drainage Devices (GDDs) such as the Ahmed device were designed to offer better pressure dependent aqueous outflow control. These have traditionally been reserved for recalcitrant glaucoma, though there's increasing evidence that they are just as effective and safe as Trabeculectomy^[1,2]. This study highlights the authors experience with Ahmed tube implant in Nigerian patients.

Methods: This was a retrospective case series in which we reviewed the outcome of Ahmed Glaucoma Drainage Implant (GDI) surgeries in the University College Hospital (UCH), Ibadan, Nigeria between July 2010 and Dec 2015. Main outcome measures included intraocular pressure (IOP), use of adjunctive medical therapy and surgical complications. Absolute success was defined as achieving target pressure without adjunctive medical therapy or further surgery.

Results: Ten eyes of ten patients were reviewed within this period with a median age of 60.0 years (range of 25.0-85.0 years, mean age of 57.6±18.0). There were 5 males (50%) and 5 females (50%). Indications included pseudophakic glaucoma in 4 eyes (40 % of the patients) and neovascular glaucoma(NVG) in 5 eyes (50%). Failed trabeculectomy preceded surgery in 1 eye (10%). Seven patients (70%) were on at least 3 anti-glaucoma medications regardless of previous surgical intervention (in one patient). The median preoperative IOP was 40.0 mmHg (range of 26.0-50.0 mmHg, mean IOP of 39.2 ±6.5 mmHg) and median number of antiglaucoma medications was 2.0 (range of 1.0-4.0, mean of 2.3±1.1). Thirty percent had less than 6mmHg on the first postoperative day. The median IOP at 1, 3 and 6 months postoperatively were 12.5 mmHg (range of 10.0-30.0, mean of 16.1±7.6), 12.0 mmHg (range of 8.0-28.0, mean of 13.2±6.3) and 12.0

mmHg (range of 4.0-25.0, mean of 11.4±6.8) respectively with a statistically significant reduction of IOP ($p < 0.01$) at each time compared to the preoperative IOP. Median number of antiglaucoma medications reduced from 2.0 (range of 1.0-4.0, mean of 2.3±1.1) preoperatively to 0.0 (range of 0.0-3.0, mean of 0.4± 0.9) postoperatively. At 3 months one patient underwent tube explantation success was recorded in 70% (7 patients) at 6 months and two patients needed adjunctive medical treatment. Postoperative complications included transient hypotony in 3 patients and tube erosion in 1 patient.

Discussion: Indications for Ahmed Implant surgery in our series included neovascular glaucoma, failed trabeculectomy and pseudophakic glaucoma, similar to other studies^[4].

Mean IOP reduction of 70.9% from 39.2 mmHg preoperatively to 11.4mmHg at 6 months follow up is similar to other series^[5,6]. Reduced mean number of antiglaucoma medications from 2.3 (±1.1) to 0.4 (±0.9) was also similar to that found in other studies^[6]. Absolute success in 70% at 6 months shows similar efficacy of Ahmed tube as in other studies.^[6,7] Ahmed tube appears to be effective in achieving good IOP control. The commonest complication was transient hypotony, similar to reports from other studies^[5,6,7]. A limitation of the study is the small number of subjects reviewed.

Conclusion: Ahmed glaucoma drainage device appears to be effective in reducing IOP in Nigerians. Further large scale studies are needed to evaluate its benefit in glaucoma management in Nigerians.

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