Intracameral tying-off of glaucoma drainage device tubes as a management of hypotony following GDD implant surgery
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Purpose: Hypotony is a relatively common complication of glaucoma drainage device (GDD) surgery. We describe a particular type of surgical management of secondary hypotony, its safety and efficacy. According to our knowledge this is the first such description in published literature.

Methods: Retrospective case review of all patients having undergone this procedure between January 2007 and December 2010 in one tertiary centre. 22 eyes of 21 patients, 13.7% of total tube surgery volume, mean age was 29.0 years (SD 20.6), males/females-11/10. 9 eyes of 8 patients were paediatric cases, mean age 9.0 years (SD 3.6). Mean follow-up 34.6 months (SD 12.2). The technique involves placing two 9/0 Prolene sutures to tie the distal end of the tube in the anterior chamber. The suture ties were placed with a 6/0 prolene in the tube lumen for the proximal tie and then a 7/0 Prolene suture in the lumen for the distal tie. A reduced and varied tube lumen sizes were achieved to reduce aqueous outflow from the anterior chamber.

Results: 50% were uveitic glaucoma cases. The types of GDDs were 6, 11 and 5 for Molteno, Baerveldt 250 and Baerveldt 350 respectively. Average pre-op IOP was 4.4 mmHg (SD 4.7). At day 1, mean IOP increased to 8.8 mmHg (SD 7.2) and mean final IOP was 10.0 mmHg (SD 5.4). Qualified/unqualified success, defined as resolution of hypotony (IOP 6-21 mmHg) and complications with/without medication was 13.6% and 36.4% respectively. Visual acuity (LogMAR) increased in 12 eyes, was unchanged in 4 and decreased in 6 eyes when comparing pre-operative and final VA. Mean pre-operative VA was 1.3 (SD 0.9) and mean final VA was 1.1 (SD 1.2). The commonest complication was uncontrolled IOP increase and 4 patients required either untying of tube (2) or laser suture lysis (2). Others, not directly related to the tube tying procedure, included 6 eyes with combination of the following: persistent hypotony
leading to phthisis (1), choroidal/retinal detachments (3), endophthalmitis (2) leading to phthisis (1).

**Conclusions:** Tying-off of GDDs is a unique technique to manage post-operative hypotony. It is an effective treatment measure in preventing hypotony-related complications in most eyes of adults as well as children. This work was submitted to the 2012 ARVO meeting however not yet accepted to date.