Long term outcomes of micropulse cyclophotocoagulation in eyes with and without prior tube shunt surgery

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RESULTS

MCPC + Ahmed Tube prior

Ahmed Tube prior

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METHODS

IRB approval for a retrospective study examining glaucoma surgical and medical care was obtained from NYUMC. Records from a glaucoma practice in New York City where MCPC was performed for at least 3 years were de-identified and retrospectively analyzed. Patients who had undergone MCPC with at least 1 year of follow-up were identified through billing records. Records were reviewed for demographics, IOP, medication use, visual acuity, and complications. The average age of patients was 74 years (range 43-93). 38 patients were female and 22 were male. Macular edema determined with optical coherence tomography through imaging records (available for all patients). Main data points included intraocular pressure and concomitant eye drops. Groups were compared with 2 tailed unpaired t-tests using StatPlus.

PURPOSE

Micropulse Transscleral Cyclophotocoagulation (mCPC), a variation of CPC, delivers energy in a pulsed manner and has emerged as an alternative to the classical cycloablative procedure in the treatment of glaucoma. Unlike CPC, mCPC delivers short-bursts of energy units to achieve photocoagulation of the melanin producing cells or pigmented epithelia of the ciliary body. MCPC is procedure that has been shown to lower IOP in patients with severe glaucoma. The efficacy of mCPC in patients who have previously received Ahmed glaucoma valves (AGV) (New World Medical, Rancho Cucamonga, CA, USA) remains unknown. Since many AGVs in patients with elevated IOPs may be partially functioning, mCPC could be potentiated in these eyes. We investigated long-term outcomes in eyes undergoing MCPC, comparing IOP and medication usage in patients who did not receive AGV or who received an AGV before or concurrently with MCPC.

CONCLUSIONS

MCPC significantly reduced ocular pressure over 12 months in glaucoma patients with no instances of cystoid macular edema or phthisis as a result of the procedure in this study. In patients with prior or simultaneous AGV placements, there were no significant differences in IOP’s at 12 months compared to patients who received MCPC only. These results suggest that AGV placement prior to or concurrent with MCPC likely does not influence the efficacy of MCPC in patients with severe glaucoma.

REFERENCES

• Toyos, M. M. & Toyos, R. Journal of Clinical & Experimental Clinical Outcomes of Micropulsed Transscleral Cyclophotocoagulation in Moderate to Severe Glaucoma. 7, 7–9 (2016).

FIGURES

Figure 1: Linear plot comparing pressure outcomes over 12 months in patients with MCPC treatment and patients with Ahmed tubes placed before MOPC treatment.

Figure 2: Linear plot comparing pressure outcomes over 12 months in patients with simultaneous MCPC and Ahmed tube groups.

Figure 3: Linear plot comparing average number of medication drops over 12 months in patients with MCPC treatment, patients with Ahmed tubes placed prior to MCPC, and patients with Ahmed tubes placed simultaneously with MCPC treatment.