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Canaloplasty Effectiveness Correlated with Viscoelastic Volume Delivered

Purpose: To investigate the effectiveness and correlation of pressurized ophthalmic viscoelastic device (OVD) volume delivered during ab-interno canaloplasty to reduce IOP in glaucomatous eyes.

Setting: Data collated from prospective multicenter cloud-based database (iTrack Global Data Registry, part of the International Glaucoma Surgery Registry – IGSR).

Methods: Eyes with a glaucoma diagnosis and 6-months of follow-up data were collated from the prospective multicenter cloud-based database (iTGDR, part of the International Glaucoma Surgery Registry – IGSR). All patients underwent canaloplasty via an ab-interno technique with the iTrack or iTrack Advance (Nova Eye Inc., Fremont, USA). Outcomes were defined as: complete success: final IOP is ≤ 18 mmHg and final meds is 0; qualified success: final IOP is ≤ 18 mmHg and final meds > 0 ; failure: final IOP is > 18 mmHg. Only eyes where the catheter had completed at least a 270-degree circumnavigation of Schlemm's canal were included.



Results: 186 eyes have been enrolled. Mean OVD volume delivered was $133.6 \pm 28.2 \mu\text{l}$ (range 56–196 μl , equal to 20-70 microboluses). At 12 months ($n=92$), the complete success rate was 34.5% for eyes receiving less than 110 μl (39 microboluses) of OVD, 67.4% for eyes receiving 111-165 μl (40-59 microboluses) of OVD and 47.1% for eyes receiving more than 165 μl (60 microboluses) of OVD. Eyes that received less than 137 μl of OVD were on less medications (baseline: 1.79 ± 1.1 ; 12-month: 0.78 ± 1.1) than those which received more than 137 μl of OVD (baseline: 2.28 ± 1.1 ; 12-month: 1.25 ± 1.4) at the time of surgery and the difference was statistically significant ($p=0.004$; $p=0.013$).

Conclusion: Optimal OVD volume delivered during canaloplasty based on this clinical review is 111-165 μl (40-59 microboluses). Eyes with more medications tend to receive increased OVD volume delivery at time of surgery.

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