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Original Article

Outcomes of Kahook Dual Blade Goniotomy with and without Phacoemulsification Cataract Extraction

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Purpose

To determine the effectiveness and safety of Kahook Dual Blade (KDB) goniotomy in reducing intraocular pressure (IOP) and medication need in glaucoma patients when combined with phacoemulsification or as a standalone procedure.

Design

Retrospective study.

Participants

A total of 197 eyes from 143 patients were reviewed.

Thirty-two eyes underwent KDB goniotomy alone and 165 eyes underwent KDB goniotomy combined with phacoemulsification cataract surgery (phaco-KDB).

Main Outcome Measures

Surgical success, defined as IOP reduction of at least 20% from baseline at 12 months, and/or reduction of at least 1 glaucoma medication.

Results

At 12 months, the success rate was 71.8% for the phaco-KDB group and 68.8% for the KDB-alone group. In the phaco-KDB group at 12 months (n = 124), mean IOP was significantly reduced from 16.7 (standard error [SE] 0.4) mmHg on 1.9 (SE 0.1) medications to 13.8 (SE 0.4) mmHg on 1.5 (SE 0.1) medications. In the KDB-alone group at 12 months (n = 16), mean IOP was significantly reduced from 20.4 (SE 1.3) mmHg on 3.1 (SE 0.2) medications to 14.1 (SE 0.9) mmHg on 2.3 (SE 0.4) medications. The most common complications were transient hyphema (17.3% at day 1) and IOP spike >10 mmHg from baseline at 1 week (10.2%). LogMAR visual acuity at 12 months was unchanged from baseline in the KDB-alone group (0.218 [SE 0.07] and 0.306 [SE 0.09], respectively, $P = 0.244$) and significantly improved in the phaco-KDB group (0.184 [SE 0.02] and 0.340 [SE 0.03], $P < 0.001$).

Conclusions

Goniotomy with the KDB has a favorable safety profile and is an effective procedure at reducing IOP and medication burden as a standalone procedure or combined with phacoemulsification.

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Abbreviations and Acronyms

EVP, episcleral venous pressure; IOP, intraocular pressure; KDB, Kahook Dual Blade; POAG, primary open-angle glaucoma; SE, standard error; TM, trabecular meshwork

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M.Y.K.: Patent Kahook Dual Blade, which is licensed by New World Medical. The University of Colorado receives

HUMAN SUBJECTS: Human subjects were included in this study. The Colorado Multiple Institutional Review Board approved this study. The study conformed to the tenets of the Declaration of Helsinki. Patients did not provide consent as this was a retrospective chart review.

No animal subjects were used in this study.

Author Contributions:

Conception and design: Sieck, Epstein, Kennedy, Patnaik, Wagner, Lynch, Kahook, Seibold

Data collection: Sieck, Epstein, Kennedy, SooHoo, Pantcheva, Seibold

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