

Letter to the Editor: Efficacy and Safety of Initial Outflow Reconstruction Using Ab Interno Microhook Trabeculotomy: A Retrospective Study in Secondary Glaucoma [Letter]

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Dear editor

I read with great interest the article by Aoyama et al on the efficacy and safety of ab interno microhook trabeculotomy in secondary glaucoma.¹ The authors report a 60.3% success rate at 12 months. They conclude that microhook trabeculotomy represents a viable initial surgical strategy for this challenging patient population. I commend this contribution to the limited evidence base for minimally invasive glaucoma surgery (MIGS) in secondary glaucoma. However, I believe several methodological considerations warrant discussion to ensure appropriate clinical translation.

The Confounding Effect of Concurrent Cataract Surgery

My primary concern centers on the study design. About 64% of eyes (25 of 39) underwent concurrent phacoemulsification with microhook trabeculotomy. The authors acknowledge that cataract surgery may act synergistically with the angle procedure. However, this characterization assumes the microhook trabeculotomy provides additive value. The study design makes it impossible to verify this assumption. This introduces a substantial confounder. It undermines the ability to attribute intraocular pressure (IOP) reduction specifically to the angle procedure.

The phacoemulsification effect on pressure is well documented and clinically significant. Benekos et al published a meta analysis in 2024. They demonstrated that cataract surgery alone reduces pressure by 3.43 mmHg at 6 months and 2.75 mmHg at 12 months in exfoliation patients. This occurs without any glaucoma procedure.² Nearly half of the cohort in the Aoyama study had exfoliation glaucoma. A substantial portion of the observed 10.5 mmHg mean pressure reduction may be attributable to lens extraction rather than trabecular meshwork incision.

This distinction has critical clinical implications. The shop floor ophthalmologist evaluates a pseudophakic patient with uncontrolled secondary glaucoma. They need to know the incremental benefit of microhook trabeculotomy beyond what phacoemulsification alone provides. The current study design makes it difficult to discern whether adding microhook trabeculotomy to cataract surgery offers meaningful additional pressure reduction. This is particularly important when weighed against the 35.9% hemorrhagic hyphema rate reported.

Medication Burden and Real World Effectiveness

The reported reduction in mean medication score from 4.2 to 3.1 represents statistical significance. The clinical impact is questionable. In contemporary healthcare systems, a regimen requiring 3.1 medications remains burdensome. This is particularly true in resource constrained settings like the National Health Service in the UK. Recent survival analyses published in the British Journal of Ophthalmology highlight the impact of such burdens. They correlate with poor adherence and accelerated treatment escalation.³ Furthermore, IRIS Registry analyses demonstrate that reoperation rates

for standalone MIGS in complex glaucoma accelerate substantially beyond 12 months.⁴ This suggests that the 1 year outcomes reported may overestimate long term effectiveness.

The distinction between theoretical efficacy in selected retrospective cohorts and real world effectiveness in diverse patient populations cannot be overstated. Any pressure reduction is valuable. However, practitioners need realistic expectations. They must know whether microhook trabeculotomy genuinely reduces the need for subsequent filtration surgery or merely delays it.

Uveitic Glaucoma and Inflammatory Quiescence

I note that eyes with uveitic glaucoma were included without specification of a required quiescence period. This design choice introduces heterogeneity. It may mask important safety signals. Operating on eyes with smoldering inflammation carries substantially higher risks of fibrinoid reaction and surgical failure compared to quiescent eyes. Recent consensus guidelines on reporting endpoints emphasize the necessity of stratifying outcomes by inflammatory status. This avoids conflating distinct risk profiles.⁵

Recommendations for Future Research

To advance the understanding of the true efficacy of microhook trabeculotomy in secondary glaucoma, I recommend several refinements:

1. Inclusion of phacoemulsification alone control arms or strict stratification of results by lens status is necessary. This should include phakic versus pseudophakic at baseline and throughout follow up.
2. Longer follow up periods extending beyond 12 months are required. This is due to the known tendency for failure rates to accelerate over time.
3. Detailed reporting of inflammatory status in uveitic eyes is essential. This includes clear definitions of quiescence and separate outcome analyses.
4. Transparent reporting of medication changes is needed. This should include specific agents added or removed rather than just numerical scores.
5. Economic analyses comparing the cost effectiveness of microhook trabeculotomy versus early filtration surgery in high-risk eyes would be valuable.

These refinements would enable clinicians to make evidence-based decisions. They could better determine whether to offer microhook trabeculotomy to pseudophakic patients with secondary glaucoma. They could weigh the modest pressure reductions against the hemorrhagic complications and potential need for subsequent surgery.

I appreciate the efforts of the authors to expand the evidence base for MIGS in secondary glaucoma. I hope these comments contribute to refining future research in this important area.

Disclosure

The author reports no conflict of interest in this communication.

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