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Phacoemulsification in acute angle closure glaucoma: when is the right time?

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Abstract

Acute primary angle closure (APAC) remains one of the ophthalmological emergencies that is still very relevant currently. The numbers blinded globally by primary angle-closure glaucoma (PACG) exceed 5.3 million, with its destructive nature causing blindness disparity compared to primary open-angle glaucoma and disproportionately affecting Asian populations more severely. The clinical audit by Tan *et al.* from HTAR in this issue offers a timely and valuable contribution to our understanding of APAC management in real world Malaysian setting.[1]

The audit evaluated outcomes of 17 APAC patients who underwent phacoemulsification at Hospital Tengku Ampuan Rahimah (HTAR), Klang. Results were staggering; intraocular pressure (IOP) reduction from 50.44 mmHg at presentation to 18.24 mmHg after medical management and further reduction to a mean of 13.06 mmHg postoperatively. This confirms the efficacy of lens extraction as a powerful IOP-lowering intervention. Similarly, the improvement in mean logMAR visual acuity from 1.00 to 0.62 underscores the extra benefits that cataract surgery confers to APAC patients. These findings tally with the landmark EAGLE (Effectiveness in Angle Closure Glaucoma of Lens Extraction) trial, which demonstrated that clear lens extraction was superior to laser peripheral iridotomy in terms of IOP control, medication burden, health economics and quality of life.[2] Although the EAGLE cohort were patients with primary angle closure (PAC) or PACG, the findings could be applicable in patients with APAC too. This audit by Tan et al. add to the growing body of evidence that when phacoemulsification is performed in the quiescent phase following APAC, it is both safe and effective in addressing the angle crowding, and subsequently the intraocular pressure (IOP) component of the acute attack.

However, what is the optimal timing for cataract extraction in APAC? The Royal College of Ophthalmologists guidelines suggest approximately one to four weeks after presentation once the IOP is controlled and cornea clear.[3] In the HTAR cohort, 82.4% of patients underwent surgery within 6 weeks, reflecting a pragmatic approach that balances the need for timely intervention with the imperative to allow corneal clarity and inflammation to settle. This timing is also broadly consistent with Lam *et al.*, who suggested the ideal window is approximately one month post abortion of the acute attack.[4]

The ethnic distribution of the HTAR cohort—equal numbers of Malay and Chinese patients (41.2% each), with Indian patients comprising 17.6%—is noteworthy. Previous Malaysian studies have suggested that Malay patients may present with more advanced angle-closure glaucoma and progress faster than their Chinese counterparts.[5] Early lens extraction, especially following an APAC attack, may play a role in mitigating this ethnic specific risk profile.

One of the more interesting findings of this audit was the observation that up to 76.5% of the patients still required two or more topical IOP-lowering medications at final follow-up. This high rate of progression to chronic glaucoma despite phacoemulsification underscores an undeniable fact: while lens extraction is a powerful intervention, it is not curative in the majority. The underlying trabecular meshwork damage incurred during the acute attack—whether from prolonged IOP elevation, inflammation or the progressive formation of peripheral anterior synechiae—may leave a legacy of impaired aqueous outflow that persists even after the anatomical angle opens. It reinforces the findings that APAC is not an acute event to be aborted, but a harbinger of chronic disease that requires lifelong monitoring.

From a health systems perspective, the HTAR audit demonstrates that phacoemulsification can be delivered safely and effectively in a Malaysian public hospital setting. However, the authors acknowledge the limitation of the small number of cases reported may reflect under-reporting due to the manual system employed for card maintenance. A move towards integrated electronic health records would allow a better opportunity to understand the true burden of APAC outcomes to our health systems more accurately.

In conclusion, the HTAR audit adds to the growing consensus that phacoemulsification should play a central role in the management of APAC, offering significant benefits in terms of IOP control, visual rehabilitation, and reduction of systemic IOP-lowering medication. The high rate of persistent IOP elevation post phacoemulsification underscores the importance of continued monitoring of these patients in the long term. The question of optimal surgical timing remains open, but it is generally agreed that more importantly, the conditions such as adequate lowering of IOP, control of inflammation, and clear corneas should take precedence.

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