⌦ Indefinite use of cycloplegics can be the last resort when surgery for malignant glaucoma has failed

The Science behind the Tip

Malignant glaucoma or aqueous misdirection is a rare but feared complication of anterior segment surgery. It occurs in eyes with a shallow anterior chamber despite a patent iridotomy. Through a yet poorly understood mechanism, diversion of aqueous flow into the posterior segment causes a persistent, though not always pronounced intraocular pressure rise. A myopic shift in refraction as the lens is pushed forward is a warning sign. Imaging techniques can demonstrate a ciliary body compressed against the iris as a pathognomonic sign.

Cycloplegics-mydriatics (atropine and phenylephrine), tightening the lens zonules and pulling the lens backwards, together with aqueous suppressants (carbonic anhydrase inhibitors, β-blockers and brimonidine) and osmotic agents (mannitol) are used to control the immediate situation[1]. Although this may be curative, often subsequent Yag-laser capsulotomy and hyaloidotomy is needed[1]. Eventually surgery involving vitrectomy and in phakic patients phacoemulsification may be performed[1-3].

Sometimes however, an alternative therapy to surgery may be needed. Some patients, particularly those with only one functional eye, may refuse surgery. Further, surgeries can fail[1-3]. In these cases, a minimal therapy with cycloplegics can be continued[3]. There is no loss of their intraocular pressure-lowering efficacy over time. This therapy is indefinite, as there is a high chance of relapse if it is discontinued[2,3]. Should an allergic reaction to atropine occur, then it can be substituted by topical hyoscine[3].

References

1. Shahid H and Salmon JF. Malignant Glaucoma: A Review of the Modern Literature. *J Ophthalmol*. 2012; 852659. Published online doi: 10.1155/2012/852659PMCID: PMC3321564.

2. Debrouwere V, Stalmans P, Van Calster J, *et al*. Outcomes of different management options for malignant glaucoma: a retrospective study. *Graefes Arch Clin Exp Ophthalmol*. 2012;250:131-41.

3. Ruben S, Tsai J, Hitchings R. Malignant glaucoma and its management. *Br J Ophthalmol*. 1997:81:163-67.

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