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. Although this may be curative, often subsequent Yag-laser capsulotomy and hyaloidotomy is needed. Eventually surgery involving vitrectomy and in phakic patients phacoemulsification may be performed.

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. In these cases, a minimal therapy with cycloplegics can be continued. 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. Should an allergic reaction to atropine occur, then it can be substituted by topical hyoscine.

References


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