Cyclodiode Efficacy

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For complex cases of refractory glaucoma, perhaps with a history of multiple surgical procedures, the most appropriate course of action can be difficult to determine, and the surgical approach is often decided on a case by case basis. Transscleral cyclophotocoagulation (TSCPC) or cyclodiode has been adopted by many glaucoma specialists primarily because of its ease of use, its wide range of application, its good safety profile in most types of glaucoma and its reasonable efficacy in reducing intraocular pressure (IOP). Prior to the introduction of TSCPC, cyclocryotherapy was widely practised but has largely become obsolete because of its unpredictable effect and greater risk of adverse effects.[1]

In modern practice, cyclodiode and aqueous shunt implantation are the principle alternatives in eyes that are unresponsive to, or have a poor prognosis for success with trabeculectomy with mitomycin C. The final decision is largely dependent on the type and degree of glaucoma, and clinician and patient preference. Historically, TSCPC has been reserved for cases of advanced glaucoma with poor visual prognosis. More recently, the indications for TSCPC have broadened, with reports from studies that included sighted eyes with a fair visual prognosis.[2-5] The popularity of TSCPC is due to its ability to induce a significant, long-term reduction in IOP with a low risk to vision.

Several authors have published encouraging results from the use of TSCPC in different types of glaucoma. Kirwan et al followed 77 eyes in 61 children with a mean age of 7.4 years at the time of treatment, and found that 62% had a significant early reduction in IOP with one treatment (IOP <22 mm Hg or >30% IOP reduction), although at 1 year this improvement was only maintained in 37%. With retreatment, the 1-year success rate was 72% and, overall, patients with aphakic glaucoma had the most sustained reduction in IOP.[6] Successful use of TSCPC has also been documented for other forms of refractory glaucoma, including diabetic neovascular glaucoma, primary open angle glaucoma (POAG), pseudoexfoliative glaucoma, chronic angle closure glaucoma (CACG), glaucoma in oil-filled, vitrectomised eyes and glaucoma in eyes with prior penetrating keratoplasty.[2,4,7-9] TSCPC has also been used as the primary surgical treatment in medically uncontrolled POAG, pseudoexfoliative glaucoma, and CACG.[2,4] In the majority of these studies, significant reductions in the mean number of topical medications were observed, but rarely was TSCPC definitive in controlling the IOP at an acceptable level without topical hypotensive therapy. Furthermore in longer-term studies, the need for repeated treatment or further surgical intervention was common.[2-4,6-9]

The low incidence of adverse effects has been important in the popularity of TSCPC. Most studies have reported very few serious adverse events, and potentially dangerous complications such as hypotony, severe inflammation, retinal detachment and loss of acuity seldom occur.

In this issue, Mehta et al share their experience with TSCPC in the management of refractory glaucoma in Southern India.[10] They add to the body of experience with TSCPC by reporting a relatively large series (106 eyes in 97 patients) treated over a 1-year period. The safety and efficacy of TSCPC is similar to that described in previous reports. Their concept of an efficacy index is potentially useful and a predictable dose-response curve for each type of glaucoma remains a holy grail in TSCPC terms. However, in common with previous reports of comparative efficacy in different glaucomas, the cyclodiode efficacy index could be improved not only from a weighting to adjust for changes in IOP medications but should also take into account treatment energy.

Through its ability to easily and reliably lower IOP with few sight-threatening adverse effects, TSCPC has rightly attained a prominent role in the management of refractory glaucoma. The typical patient requires rapid control of IOP while waiting to schedule more definitive surgery, or as an adjunctive therapeutic modality in addition to topical medication when incisional surgery is not safe or appropriate. However, when these criteria are not fulfilled, the reported success of TSCPC is still less than that of some modern aqueous shunt devices and the two procedures clearly have a complementary role in the management of recalcitrant glaucomas. *Asian J Ophthalmol. 2006;8:225-6*

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