LETTERS TO THE EDITOR

Treatment of developmental glaucoma

SIR,—We wish to report on a patient with developmental glaucoma whose worse eye, previously controlled by surgical goniotomy, subsequently became uncontrolled and was further treated by Nd-YAG laser goniotomy with immediate improvement in pressure control.

On presentation at age 2 a boy with moderately severe cystic fibrosis was found to have an enlarged right cornea. At examination under sedation with methohexitone 20 mg the right cornea was found to have breaks in Descemet's membrane, and the intraocular pressures were 16 mmHg in the right eye and 12 mmHg in the left by applanation tonometry. Asymmetrical cupping of the optic discs was noted, with a ratio of 0.75 in the vertical meridian in the right eye and 0.4 in the left eye. The glaucomatous process at this stage was considered to be inactive.

Re-examination under sedation with methohexitone 30 mg 18 months later revealed intraocular pressures of 18 mmHg in the right eye and 12 mmHg in the left eye by applanation tonometry. The appearance of the optic discs was unchanged.

A year later the right intraocular pressure was found to be 30 mmHg by applanation tonometry performed without general anaesthesia or sedation. A month later under general anaesthesia the right intraocular pressure was 30 mmHg by applanation tonometry, the left being under 20 mmHg. The right horizontal corneal diameter was 13.75 mm, the left being 12.75 mm. A right inferior quadrant goniotomy was performed.

Subsequently the intraocular pressures remained under 21 mmHg without topical treatment for 14 months, but the pressure in the right eye then rose to 24 mmHg, with an increase in the cup disc ratio. It was impossible to obtain an accurate visual field in this child. Right gonioscopy at this time showed an open angle inferiorly, but the superior, nasal, and temporal quadrants were occluded by a membrane, iris processes extending to the anterior limit of the trabecular meshwork.

In view of his respiratory problems and good co-operation at age 6 it was decided to attempt Nd-YAG laser goniotomy under topical anaesthesia rather than institute medical anti-glaucomatous treatment. A Lasag Topaz Nd-YAG laser was used with a Lasag CGA contact lens with the patient seated at the apparatus. Three clock hours of angle were opened by the application of 17×4 mJ single pulses to the anterior limit of the iris insertion. The iris was seen to fall away and the trabecular meshwork became visible in the treated area.

The procedure caused only very minimal

haemorrhage in the angle. The following day the intraocular pressure in the right eye was 16 mmHg, and there were only a few inflammatory cells in the anterior chamber. No topical treatment was given subsequently.

Six weeks later the right intraocular pressure was 15 mmHg, at five months 18 mmHg, at eight months 20 mmHg, at 13 months 17 mmHg, and at 20 months 20 mmHg, all measured by applanation tonometry.

We feel that the short term results in our patient and those reported by Kitazawa *et al*¹⁻³ suggest that Nd-YAG laser goniotomy may be a real alternative to surgical goniotomy in the management of developmental glaucoma associated with simple trabecular dysgenesis. Kitazawa and colleagues' patients were aged 16 to 45 years. Our patient was aged 6, but was very co-operative, as is often the case in this situation.

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- 1 Kitazawa Y, Shirato S, Yumita A, Mishima S. Q-switched Nd:YAG laser for developmental glaucoma. *Ophthalmic Surg* 1985; 16: 99-100.
- 2 Kitazawa Y, Yumita A, Shirato S, Tomita G. Q-switched Nd:YAG laser goniotomy in developmental glaucoma. *Dev Ophthalmol* 1987; 14: 177-83.
- 3 Yumita A, Shirato S, Yamamoto T, Kitazawa Y. Goniotomy with Q-switched Nd:YAG laser in juvenile developmental glaucoma: a preliminary report. *Jpn J Ophthalmol* 1984; 28: 349-55.

More Healonid for your money

SIR,—Visco-elastic substances such as sodium hyaluronate (Healonid) have many applications in ophthalmic surgery in separating tissues and in protecting them from trauma. Healonid is supplied in prefilled disposable syringes delivering either 0.5 or 0.75 ml of a buffered solution of sodium hyaluronate. In many centres the high cost of Healonid is a factor which limits its use. We wish to report a simple method of obtaining additional Healonid from the prefilled syringe.

When the syringe is emptied by complete depression of the plunger, the dead space of the syringe and cannula contains 0.06 ml of Healonid, some of which can be extracted by removing the cannula from the syringe and attaching it to another syringe filled with air. The air can be expelled from this latter syringe by gentle pressure, which will flush the residual Healonid out of the dead space of the cannula, allowing it to be used by the surgeon in the same operative procedure. By so doing a further 0.03 ml of Healonid which would otherwise have been discarded can be obtained from the prefilled syringe. This represents over 5% of the initial volume of Healonid, and in our experience the use of this simple technique often prevents a second syringe of Healonid being opened at the end of a procedure for a final application—for example, to coat an intraocular lens—with considerable financial saving.

It is emphasised that this technique is advocated to obtain the additional Healonid from the prefilled syringe only for use during the same operation and not to be conserved for future use on another patient.

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Epikeratophakia with biological adhesive

SIR,—The recent paper by Halliday on epikeratophakia reports two cases where he attempted unsuccessfully to fix the graft with glue.¹ It has been shown in experimental work that success in glueing epikeratophakia grafts with commercially prepared fibrinogen adhesive is dependent on modifications of the lenticule design and the operative technique,² which were not, however, used in his cases. Fibrinogen adhesive prepared from individual donors can also be effective in glueing experimental epikeratophakia grafts.³ On the basis of these findings early clinical trials have demonstrated that epikeratophakia grafts can be successfully glued in humans with autologous fibrinogen, with graft retention in every case.⁴ Not only does the glueing technique make the operation much simpler and quicker to perform but it may also improve the visual results by reducing the effect of variation in suture tension. It also obviates the need for suture removal, which in children may require a second anaesthetic.

It is hoped that the advantages of the use of adhesive will be demonstrated by the results from the prospective controlled trial recently approved to be carried out at St George's Hospital.

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- 1 Halliday BL. Epikeratophakia for aphakia, keratoconus, and myopia. *Br J Ophthalmol* 1990; 74: 67-72.
- 2 Rostron CK, Brittain GPH, Morton DB, Rees JE. Experimental epikeratophakia with a biological adhesive. *Arch Ophthalmol* 1988; 106: 1103-6.
- 3 Brittain GPH, Rostron CK, Morton DB, Rees JE. The use of a biological adhesive to achieve sutureless epikeratophakia. *Eye* 1989; 3: 56-63.
- 4 Rostron CK. Epikeratophakia grafts glued with autologous cryoprecipitate. *Eur J Implant Refract Surg* 1989; 1: 105-8.

NOTE

Nordic meeting

The XXX Nordic Ophthalmological Meeting will be held on 25-28 August 1991 at Helsinki, Finland. Further information from Dr Raine Mustonen, Department of Ophthalmology, University Central Hospital, Haartmaninkatu 4C, 00290 Helsinki, Finland.