Use of a modified back-flush needle in diabetic vitrectomies

SIR,—A safe method for removal of blood from the vitreous cavity is a prerequisite to performing successful surgery particularly in eyes with advanced proliferative diabetic retinopathy. Such eyes often have dense retrohyaloid haemorrhage and tractional retinal detachments. The vitreous haemorrhage often settles in a viscous layer on atrophic detached retina and thus makes 'vacuuming' with a conventional Charles flute needle potentially hazardous.

Zivojinovic described the use of the modified back-flush needle1 which incorporates a silicone rubber bulb with an aperture for control of suction, and which also permits reflux of intraocular fluid. Although this modification was designed to free any incarcerated tissue such as retina we describe a technique which facilitates complete removal of blood from the vitreous cavity and preretalal space with safety. Any integral haemorrhage present is first removed by conventional three-port vitrectomy. An opening can then be produced into the posterior hyaloid space through which the back-flush needle can be positioned under direct visualisation; fluid haemorrhage is then evacuated using the flute modality of the needle (Fig 1a). In addition to aid complete clearance of settled blood, particularly prior to epiretinal membrane dissection or to endophotocoagulation, the rubber bulb can be forcefully depressed with the forefinger over the aperture, creating a jet of fluid directed at the layered blood on the retinal surface (Fig 1b). The current of the fluid blows the settled blood off the surface of the detached retina. The blood immediately disperses and circulates mostly in the anterior part of the vitreous cavity, and can then be easily evacuated from there using the same flute needle.

Peyman described a similar technique in which the exit aperture of the flute needle is tapped with the index finger causing the pressure within the cannula to be increased and expelling the needle's contents inside the eye.2 Though no complications were described with this procedure the number of cases was small and we believe that the technique we describe is more controlled and hence safer.

We have now used the back-flush needle technique for more than 2 years on more than 150 cases with tractional retinal detachments due to proliferative diabetic retinopathy. So far we have not encountered any complications, in particular no iatrogenic retinal breaks have been created as a result of this procedure.

We thank Mr T Tarrant for kindly providing the figure.

2 Peyman GA. (Letter.) Retina 1988; 8: 221.

Scleral melting and conjunctival rhinosporidiosis

SIR,—I read with interest the case report by De Doncker et al.1 A retrospective study (unpublished) of 28 cases of ocular rhinosporidiosis seen at the Government Ophthalmic Hospital, Madras, between 1978 and 1986 included a 32-year-old male who presented with a slowly progressive bluish swelling on the temporal sclera of the left eye. There was no past history of significant ocular disease or injury.

Clinical examination revealed scleral ectasia of about 5 mm in diameter temporal to the limbus. Overlying this area there was a vascularised conjunctival polyp of approximately 3 mm in diameter at the base and clinically diagnosed as rhinosporidiosis because of characteristic pale spots scattered on the surface. This patient was treated by excising the conjunctival lesion (histopathological examination confirmed the clinical diagnosis) and scleral grafting over the area of scleral weakness. The status of the disease process in the late postoperative period was not recorded as the patient was lost to follow-up—a common occurrence in Indian government hospitals.

To my knowledge there are 20 cases of scleral staphylomas associated with histologically proved conjunctival rhinosporidiosis3 other than the one described above and the two cited by De Doncker et al. One of the management options reported initially was excision of the conjunctival granuloma over the scleral staphyloma and use of a conjunctival flap to strengthen the area of scleral thinning.4 This prevented an increase in the size of the staphyloma when the patient was reviewed at 6 months. More effective treatment was suggested by Kurukose in 1972 (paper presented at the 29th All India Ophthalmic Society Conference) in the form of pushing the staphyloma inwards and suturing the healthy scleral edges together or using a cornal graft to cover the scleral defect. However by 1980, based on the experience of treating four5 and seven6 cases, a consensus had emerged as to the most successful management of scleral staphylomas caused by conjunctival rhinosporidiosis: excision of the overlying conjunctival granuloma, reduction in the size of the staphyloma by administering oral acetazolamide, performing anterior chamber paracentesis, and gently pressing the surface of the staphyloma followed by the use of a reinforcing donor scleral graft which extends beyond the margins of the scleral staphyloma. Finally the healthy conjunctival edges are sutured over the scleral graft. There was no case of recurrence on long-term review of the operated patients.6,*

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Topical timolol and serum lipoproteins

SIR,—Although West and Longstaff failed to find any significant alterations in serum lipids
with topical ophthalmic timolol use in a group of 17 patients treated for 15 weeks their study does not have an adequate power to give confidence that this is a true result.

Studies should be designed to have an 80% power to detect a change if one is induced via experimental perturbation. In general for studies of drug induced effects on serum lipids this requires a patient population of about 30.

We performed a study with 28 volunteers which had a design power of 80% to detect a change of 0-15 mmol/l in high density lipoprotein (HDL) cholesterol. We determined that topical ophthalmic timolol treatment caused a 9% decrease (0-14 mmol/l) in HDL cholesterol (p < 0.001).

West and Longstaff’s study had less than 50% power to detect a difference in HDL cholesterol levels of the magnitude that we have demonstrated when the study power is calculated with their reported standard deviations. This is far too low to assume no effect of an experimental treatment.

In addition a more appropriate analysis of their data would have been a paired t test, since each patient served as his own control in the study. With the paired t test their results might have been closer to statistical significance. Study power would have however remained unchanged (low).

Further, studies of drug induced lipid effects should state explicitly the degree of standardisation of their lipid analysis laboratory throughout the study. Lipid assays are notoriously variable. Failure to maintain a sufficient level of standardisation throughout a study of drug induced lipid effects may greatly reduce the ability of a study to detect the sought after effect even in studies designed for adequate power.

The consequences of lowering HDL cholesterol levels must be seriously evaluated because the HDL cholesterol level is a definite risk factor for cardiovascular disease. A small reduction in HDL cholesterol which occurs in a large number of individuals shifts the distribution of HDL cholesterol levels for the whole population. Such a lowered distribution would be associated with an increased risk of coronary heart disease in that population a whole no matter how small the individual reduction in HDL cholesterol. As physicians we must be concerned about the population attributable risk associated with the therapy that we prescribe. Millions of people are presently using topical β blockers.

Certainly additional larger studies of ophthalmic β-blocker induced effects on serum lipids are needed. Is the effect on HDL cholesterol different in a population of glaucoma patients? Is the effect seen with all β blockers? Is it affected by nasolacrimal occlusion? Does the effect increase or decrease with exposures of longer than 2 months? Is the effect reversible on stopping therapy?

Finally, it would be of interest for your readers if sources of study funding were indicated.
Topical timolol and serum lipoproteins.

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doi: 10.1136/bjo.76.3.191-b

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