LETTERS TO THE EDITOR

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.

Zivojnovic 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 preretinal 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 vacuumed 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 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 traction 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.

N WILSON-HOLT
G ORR
L LANIGAN
Z GREGOR
Vitreoretinal Unit,
Moorfields Eye Hospital,
City Road, London, EC1V 2PD

We thank Mr T Tarrant for kindly providing the figure.

- 1 Zivojnovic R, Vijfinkel GJ. A modified flute needle. *Am J Ophthalmol* 1983; 96: 548-9.
- 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 post-operative 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 rhinosporidiosis²⁻⁶ 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 the use of a conjunctival flap to strengthen the area of scleral thinning.³ This prevented an increase in the size of the staphyloma when the patient was reviewed at 6 months. More effective treatment was suggested by Kuriakose 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 corneal graft to cover the scleral defect. However by 1980, based on the experience of treating four⁴ and seven⁵ 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 gentle pressure on 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

P SUNDERRAJ
District General Hospital,
Southport, PR8 6NJ

- 1 De Doncker RML, de Keizer RJW, Oosterhuis JA, Maes A. Scleral melting in a patient with conjunctival rhinosporidiosis. *Br J Ophthalmol* 1990; 74: 635-7.
- 2 Karunaratne WAE. *Rhinosporidiosis in man*. London: Athlone Press, University of London, 1964: 64.
- 3 Ramalingam TT, Rao PNS. Scleral staphyloma due to rhinosporidiosis. *J All India Ophthalmol Soc* 1969; 17: 59-60.
- 4 Suseela V, Subramanian KS. Ocular rhinosporidiosis. *Indian J Ophthalmol* 1976; 23: 1-4.
- 5 Sivayoham ISSR. Scleromalacia caused by mycosis. Proceedings of the Sixth Afro-Asian Congress of Ophthalmology, Madras, 1976: 673-6.
- 6 Kuriakose ET. Scleral transplantation in scleral staphylomas caused by occlusporidiosis. *Indian J Ophthalmol* 1980; 27: 227-8.

Topical timolol and serum lipoproteins

SIR,—Although West and Longstaff failed to find any significant alterations in serum lipids

Fig 1a

Fig 1b

An opening through the posterior hyaloid has been made. Evacuation of retrohyaloid haemorrhage using the flute needle modality (a), and dispersion of settled haemorrhage from the retinal surface using the back-flush modality (b).

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 study¹ 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 as 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.

D L C DIEHL
Group Health Cooperative of Puget Sound,
and University of Washington,
Seattle, WA

ANNE L COLEMAN
UCLA Jules Stein Eye Institute,
Los Angeles, CA

HENRY D JAMPEL
Wilmer Eye Institute,
Johns Hopkins Hospital,
Baltimore, MD

HARRY A QUIGLEY
Director, Dana Center for Preventive Ophthalmology,
Johns Hopkins Hospital,
Baltimore, MD

PAUL S BACHORIK

Johns Hopkins Lipid Research Atherosclerosis Unit,
Johns Hopkins University School of Medicine,
Baltimore, MD, USA

- 1 Coleman AL, Diehl DLC, Jampel HD, Quigley HA, Bachorik PS. Topical timolol decreases plasma high density lipoprotein cholesterol level. *Arch Ophthalmol* 1990; 108: 1260-3.

Reply

SIR,—The study population required to give adequate power depends on the magnitude of the minimal change one wants to detect and therefore one cannot make generalisations about the size of the study population required until the level of minimal change to be detected is agreed. (The change in serum concentration of high density lipoproteins (HDLs) which it is worthwhile detecting with regard to the risk of coronary heart disease remains to be determined.)

As stated in our paper¹ we looked primarily at serum triglyceride (TG) levels as one would expect the number of patients to give adequate study power to detect any effect on serum TG levels of topical timolol treatment to be smaller than if looking for an effect on serum HDLs as HDL levels are affected only half as much as TG levels in systemic studies. It is of interest that although Coleman *et al*² demonstrated highly significant change in serum HDLs they failed to show high significance for the change in serum TGs measured.

Our study in a group of patients with glaucoma had more than 90% study power at 5 weeks to detect a change of 0.3 mmol/l in serum TGs; at 15 weeks study power was just under 80% to detect a similar change.

Surprisingly study power for an HDL change of 0.14 mmol/l at 5 weeks was >95% and at 15 weeks for the same change was >80%. The study power was adequate for a smaller change in HDLs compared with TGs due to the much smaller standard deviation for HDL changes.

Our statistician agrees that a paired *t* test is more appropriate but recalculation using this test as expected does not make any of the changes significant.

Our lipid analysis was carried out using Technicon methodology on a COBAS BIO centrifugal analyser as stated in our paper. Standardisation for this system is according to the the Centres for Disease Control criteria.

The study was funded within the departments of ophthalmology, biochemistry and community medicine of the hospital and we are grateful for the help of our colleagues in completing the work.

As with other lipid related cardiovascular studies we agree with the need for a larger study population so as to be able to evaluate fully any possible effect of a treatment (topical β blockers in this case) on serum lipids and consequent influence on risk of coronary heart disease. To this end a multicentre study would offer the most certain means of determining any possible influence.

JAMES WEST
SIMON LONGSTAFF
Royal Hallamshire Hospital, Sheffield

- 1 Pocock SJ, Shaper AG, Phillips AN. Concentration of high density lipoprotein cholesterol, triglycerides and total cholesterol in ischaemic heart disease. *Br Med J* 1989; 298: 998-1002.
- 2 West J, Longstaff S. Topical timolol and serum lipoproteins. *Br J Ophthalmol* 1990; 74: 663-4.
- 3 Coleman AL, Diehl DLC, Jampel HD, Bachorik PS, Quigley HA. Topical timolol reduces high density lipoprotein cholesterol levels. *Arch Ophthalmol* 1990; 108: 1260-3.

BOOK REVIEW

Les Strabismes: De l'analyse clinique a la synthese chirurgicale. 2nd edn. By Annette Spielmann. Pp 292. 419F. Masson: Paris, 1990.

This is the second edition of a French textbook on strabismus written by Madame Annette Spielmann, a leading French strabismologist. The first edition was published in 1989 and the new edition has been reviewed and re-edited.

This is an excellent and comprehensive account of strabismus by one author, well illustrated with diagrams and photographs and with a comprehensive bibliography. In common with most works within the European tradition, more attention is paid to the sensory aspects of strabismus and there is interesting material on dissociated deviations and supranuclear palsies. Madame Spielmann deals briefly but firmly with the eccentric therapy widely popular in France of sector treatment of amblyopia and strabismus, with which she does not agree.

British readers will find the layout of the chapters unusual in that subjects are treated much more from an aetiological than an anatomical point of view and this is in itself refreshing and stimulating. Although I would not recommend this book as a first text on strabismus, those with an interest will find it well worthwhile.

J P LEE

All titles reviewed here are available from the BMJ Bookshop, PO Box 295, London WC1H 9TE. Prices include postage in the UK and for members of the British Forces Overseas, but overseas customers should add 15% to the value of the order for postage and packing. Payment can be made by cheque in sterling drawn on a UK bank, or by credit card (Mastercard, Visa, or American Express), stating card number, expiry date, and full name.

NOTES

Professor Hans Goldmann, MD

We regret to report that Professor Hans Goldmann died on 20 November 1991. We hope to have an obituary in a later issue.

8th International Steglitz Paediatric Surgical Congress 1992 Berlin/Germany

The 8th International Steglitz Paediatric Surgical Congress will be held on 4-5 December 1992 at the University Medical Centre, Steglitz, Berlin. Under the title 'Endoscopic surgery in children' it will be chaired by Professor Dr J Waldschmidt. Further information: PD Dr F Schier, Kinderchirurgie, Uniklinik Steglitz, Hindenburgdamm 30, 1000 Berlin 45, Germany. (Tel: 030 798 4181 or 798 2909. Fax: 030 798 4141.)