

The editorial and both papers highlight the need for training to minimise the risk of complications, in particular globe perforation. Significantly, this complication had not been encountered by those surveyed, although perforation during local block was known to have occurred in the region during the preceding year. This may represent a lack of communication between anaesthetic and ophthalmology colleagues.

In the United States the lack of formal ocular local anaesthetic training has been clearly identified⁴ and anaesthetists have been previously implicated as having a higher complication rate.⁵ Mr Boase suggests resisting 'the help offered by junior anaesthetists keen to fill their training log books'. In light of the joint report from the Royal College of Anaesthetists and College of Ophthalmologists,⁶ surely these juniors are precisely those who would benefit from a structured teaching programme with responsibilities and input from both specialities.

A. G. A. Coombes, FRCOphth
Mayday University Hospital
Mayday Road
Thornton Heath
Surrey CR7 7YE
UK

R. J. Mawer, FRCA
Great Ormond Street Children's Hospital
Great Ormond Street
London WC1N 3JH
UK

References

1. Boase DL. Local anaesthesia revisited [editorial]. *Eye* 1996;10:531-2.
2. Gillow JT, Aggarwal RK, Kirkby GR. Ocular perforation during peribulbar anaesthesia. *Eye* 1996;10:533-6.
3. Gillow JT, Aggarwal RK, Kirkby GR. A survey of ocular perforation during ophthalmic local anaesthesia in the United Kingdom. *Eye* 1996;10:537-8.
4. Miller-Meeks MJ, Bergstrom T, Karp KO. Prevalent attitudes regarding residency training in ocular anaesthesia. *Ophthalmology* 1994;101:1353-6.
5. Grizzard WS, Kirk NM, Pavan PR, Antworth MV, Hammer ME, Roseman RL. Perforating ocular injuries caused by anaesthesia personnel. *Ophthalmology* 1991;98:1011-6.
6. Report of the joint working party on anaesthesia in ophthalmic surgery. London: Royal College of Anaesthetists and College of Ophthalmologists, 1992.

Sir,

We read with interest the correspondence and confine our response to answering comments made about our papers rather than the editorial.

The papers were presented with two main aims. The first was to demonstrate the serious morbidity which may follow local anaesthetic (LA)-associated

ocular perforation. We welcome the confirmation from Gray's study. The second was to alert clinicians to the scale of the problem. Unfortunately, far from being a transient epidemic in 1994-5 LA-associated ocular perforation remains depressingly common. Fresh prospective data collected by the British and Eire Association of Vitreoretinal Surgeons found 39 perforations referred to members in the year to October 1996 (G. R. Kirkby, unpublished data).

We agree with Tighe and Bywater that there may be several explanations why 'anaesthetists are inflicting more ocular perforations than ophthalmologists' and this is the reason why on this issue our paper presented the result without conjecture. The importance of structured training in ophthalmic local anaesthesia is rightly stressed in this correspondence, although the key issue of whether all anaesthetists should be trained in the sub-speciality is not addressed.

We are pleased that the correspondents share our concerns. If these papers have stimulated debate and focused attention on the problems of ophthalmic local anaesthesia then they have achieved their aims. Ophthalmic anaesthesia can only benefit when the problems in current practice are widely recognised.

J. T. Gillow

Birmingham and Midland Eye Centre
Dudley Road
Birmingham B18 7QH
UK

Sir,

Considerable concern has been voiced^{1,2} regarding the addition of CS gas spray to the equipment carried by police officers, with fears of severe and/or permanent ocular damage resulting from its use. CS gas was due to be introduced on a trial basis in July 1995, but was delayed until March 1996 by further investigation into its safety after a police officer suffered (temporary) ocular injury while in training. Subsequently, the spray has been in use nation-wide, including six centres in the London area, and provisional data report its use on 600 occasions during the 6 month trial period (personal communication, New Scotland Yard). It has been interesting, therefore, to review the records of the accident and emergency department at this hospital, a busy 'walk-in' 24-hour unit: since CS gas was introduced we have treated no cases of ocular injury resulting from either police or (illegal) personal use. The Metropolitan Police have no records of referral to eye units in London during the trial period (personal communication, New Scotland Yard).

Despite the potential dangers it appears that use of CS gas by the police, which was approved for long-

term use by the Home Secretary on 21 August 1996, is unlikely to present a major problem to ophthalmologists; it would be interesting to hear of other units' experience of this agent.

Martin Leyland, FRCOphth

Western Eye Hospital
Marylebone Road
London NW1 5YE
UK

References

1. Yih JP. CS gas injury to the eye. *BMJ* 1995;311:276.
2. Gray PJ, Murray V. Treating CS gas injuries to the eye: exposure at close range is particularly dangerous [letter]. *BMJ* 1995;311:871.

Sir,

We would like to comment on the study by Bell, Butt and Gardner on 'Warming lignocaine reduces the pain of injection during local anaesthetic eyelid surgery' (*Eye* 1996;10:558-60). Usually the most uncomfortable part of eyelid surgery for the patient is the administration of the local anaesthetic, and anything that can be done to reduce this discomfort is worth considering. We have found that by diluting the standard 2% lignocaine with an equal volume of water for injection before infiltrating produces much less discomfort for all our patients compared with using undiluted 2% lignocaine. The reduced discomfort causes less eyelid squeezing whilst infiltrating, making it easier to achieve a decent block - the effects of which last long enough for routine lid surgery such as chalazion incision and entropion and ectropion surgery to be adequately completed. Whilst Bell *et al.* describe prewarmed lignocaine to be less painful than cold lignocaine we feel that diluting the 2% lignocaine reduces the discomfort just as effectively and is possibly less time-consuming to do.

Niral Karia
Khuram T. Rahman

Prince Charles Eye Unit
King Edward VII Hospital
Windsor SL4 3DP
UK

Correspondence to:
Niral Karia
Department of Ophthalmology
St George's Hospital
Blackshaw Road
London SW17 0QT
UK

Sir,
The comments by Karia and Rahman are welcomed. The technique of diluting local anaesthetic prior to

injection is well recognised and is also used in our department. Whilst using diluted lignocaine would be acceptable for relatively minor procedures such as chalazion incision and entropion and ectropion repair, there would be concern about the adequacy of the block for longer oculoplastic operations such as ptosis correction and more complicated tumour excisions requiring grafts. If further injections were to be needed then the whole purpose of the technique would be defeated.

The act of using warmed lignocaine need not add extra time to a theatre list, but it does require organisation. Thermostatically controlled water baths, dry incubators, baby bottle warmers and yoghurt makers are all commercially available and can be conveniently set up in the anaesthetic room by the nursing staff, half an hour prior to the start of a list, so that the vials of anaesthetic have come up to temperature by the time the first patient has arrived.

We have also been able to show that the use of warmed anaesthetic reduced the pain of injection associated with peribulbar block prior to cataract surgery.¹ An alternative technique which provides an excellent painless block is to use a pre-injection of 1-2 ml of 2% lignocaine diluted to 10% of its strength with balanced salt solution. This is then followed by the main injection of normal strength (2%) lignocaine, by keeping the needle *in situ* and exchanging the syringes. This method could also be applied to lid surgery, however avoiding the potential drawback of a shorter duration of action associated with the use of diluted anaesthetic on its own.

R. W. D. Bell
Z. A. Butt
R. F. M. Gardner

Princess Alexandra Eye Pavilion
Royal Infirmary
Edinburgh EH3 9YW
UK

St John's Hospital
Livingston
West Lothian
UK

Reference

1. Bell RWD, Butt ZA. Warming lignocaine reduces the pain of injection during peribulbar local anaesthesia for cataract surgery. *Br J Ophthalmol* 1995;79:1015-7.

Sir,

I read with interest N. P. O'Donnell and W. Gillibrand's Letter to the Journal 'A comparison of the efficacy of tropicamide applied topically using a novel ophthalmic delivery system versus a phenyl-