Correspondence

Regional anaesthesia for 12,000 cataract extraction and intraocular lens implantation procedures

To the Editor:

The interesting article by Hamilton, Gimbel and Strunin (Can J Anaesth 1988; 35: 615–23) concerns the very important subject of how to choose the best method of regional anaesthesia for cataract extractions. The authors compared five methods of anaesthesia, successively applied by the anaesthetist. The results were assessed by the ophthalmologist using an objective scoring system. The five methods of anaesthesia were given in consecutive blocks and not at random. Thus, there may have been a process of learning by the anaesthetist and an influence on the ophthalmologist.

In our hospital we administer 2.5–3.0 ml of a solution containing bupivacaine 0.5 per cent with adrenaline 1:200,000 retrobulbarly into the muscle cone together with 5 ml of this solution into the orbicularis muscle. The authors described that in the five compared methods of anaesthesia they gave a retro- or peribulbar injection of respectively 3–4 ml, 5–7 ml, 7–9 ml, 7–9 ml or 10–12 ml. Such large injections often produce a bulbar protrusion that impedes a safe operative procedure.

In the assessment of the anaesthetic effects the authors used various relevant criteria but they did not make mention of the ptosis that usually is seen very soon and with the needle still in position. In such cases this symptom indicates that the anaesthesia is well placed and that less solution is needed.

The authors also reported that in seven of the eight patients with brainstem anaesthesia the surgical procedure could be continued. This raises the question of how the diagnosis was made.

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REPLY

Thank you for the opportunity to reply to the letter from Drs. Belopavlovic and Blanksma.

Their correspondence criticizes our article on the grounds that the research method did not meet the criteria of a careful

comparison. The paper was entered in the Clinical Reports section of the Journal and at no time purported to be a bona fide research method. The anaesthetist involved (RCH) fully acknowledges that there was a process of learning – which is implied in the text of the article. A large clinical series had been accumulated and it was felt to be worthwhile to report the experiences gained and the problems encountered. The correspondents in their practice use a small volume retrobulbar technique with separate transcutaneous seventh nerve block. In our experience, now exceeding 20,000 regional anaesthetics for cataract extraction, this method does not produce extraocular muscle akinesia in all patients and is associated with intraoperative pain in an unacceptable percentage. On the other hand with a large volume intraorbital technique, akinesia can be obtained in 100 per cent of cases with an incidence of intraoperative breakthrough pain of about 0.1 per cent. Large volume injection often produces bulbar protrusion which makes the use of an orbital decompression device mandatory, as the article states. To embark on surgery without this prerequisite would be foolhardy. In our opinion, large volume injection with subsequent orbital decompression consistently produced surgical conditions superior to those following traditional retrobulbar blocking. Another advantage of a large volume intraorbital technique is the spread of injectate into the periorbital muscle tissue which obviates the need for painful separate transcutaneous seventh nerve blocking.

Our present method is a solely peribulbar, large volume intraorbital technique. We believe that the risk of serious complications associated with attempts to enter within the muscle cone for traditional retrobulbar blocking is such that it should no longer be taught or practised. Papers published in the past 12 months reporting and discussing complications of retrobulbar blocking are listed in the cited references.^{1–9} We fully agree that when there is indication that the anaesthetic agent is well placed, less solution is needed. The capacity and compliance of the tissue spaces in any given orbit may differ greatly from another. Routine digital monitoring of orbital pressure during injection will determine the optimal injectate volume. A "cook-book" approach with predetermined volume will inevitably underdose some orbits and subject others to dangerously high pressure.

In the eight patients in whom brainstem anaesthesia occurred severe respiratory depression or arrest was present along with cardiovascular signs of central spread. Three of these have been reported in the literature.¹⁰ Resuscitative measures were applied for as long as was required until normality and stability returned, after which surgery was performed in all but one. Persistent nausea in this patient rendered her unfit for surgery at that time, but it was successfully completed under regional anaesthesia some days later.

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