Correspondence

Succinylcholine use in emergency eye operations

To the Editor:

Drs. Cunningham and Barry¹ are to be congratulated for their succinct account of the implications of general anaesthesia in ophthalmic surgery. In particular, they rationally addressed the question of succinylcholine use in emergency eye operations, a problem foremost in our minds when dealing with such situations. They correctly stated that no method of "pretreatment" offers guarantee of protection from the intraocular hypertensive effects of succinylcholine but nevertheless argued that this is the best drug to use. While we wholeheartedly agree with their conclusions, we believe that they have omitted to mention what is one of the most important arguments in favour of the use of succinylcholine in emergency eye surgery.

There is little argument that tracheal intubation should be undertaken in these patients. That this should be performed under the best possible conditions for the safety of the patient is similarly not in doubt. Succinylcholine is the best neuromuscular blocking agent for this purpose. The fact is that the effect of laryngoscopy and tracheal intubation on both intraocular and intracranial pressure is of such magnitude as to render the succinylcholine effect almost inconsequential. There are ample studies to attest this fact²⁻⁷ and that the best and safest technique would therefore include the use of this drug. It is clear from these studies that greater attention must be directed towards modification of the effects of laryngoscopy and tracheal intubation and away from the exhausted "succinylcholine controversy." Our ultimate concern is for the patient at all times rather than for the individual eye.

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REPLY

The authors appreciate the comments of Doctors Murphy and Davis. In recent years, a significant change in emphasis has emerged in the anaesthetic management for emergency repair of a penetrating eye injury.

Notwithstanding theoretical objections, Libonati et al.,¹ Dunlop,² Bourke,³ have been prepared to state publicly and substantiate with data what many anaesthetists have known and practiced for years – a carefully controlled rapid sequence induction using succinylcholine is a rational and safe method of induction for a patient with an open eye and full stomach.

The prognosis for restoration of useful vision following surgical repair of perforated eye injuries has improved dramatically over the past decade. With advanced vitreoretinal surgical techniques, 54 per cent of 278 patients aggressively treated regained a visual acuity of 20/100 or better within six months.⁴ Besides perioperative considerations, the prognosis for binocular vision depends on whether the injury involved the anterior chamber and/or posterior segment, whether there was uveal prolapse and whether intraocular reaction occurred.⁵ Anaesthetic management must reflect the high priority for potential restoration of useful binocular vision.

With the development of "priming techniques" to accelerate the onset of non-depolarizing relaxants, attempts have been made to accomplish a "rapid sequence" emergency intubation with non-depolarizing agents. Unfortunately, in studies designed to simulate rapid sequence induction with thiopentone 5.0 mg·kg⁻¹ and vecuronium 0.2 mg·kg⁻¹ or atracurium 1.0 mg·kg⁻¹ using pneumotonometry⁶ and others using thiopentone 5.0 mg·kg⁻¹ and atracurium 0.75 mg·kg⁻¹,⁷ significant elevations of intraocular pressure were observed following laryngoscopy and intubation. Pre-treatment schedules employing 1–2 mg·kg⁻¹ lidocaine, while attenuating the haemodynamic responses to laryngoscopy and intubation, proved dis-