

ture.^{2,3} The expulsion of intraocular contents following succinylcholine induction is more than merely a theoretical concern. One of us (A.L.R.) has witnessed this complication, and the result was enucleation following a simple scleral laceration. For these reasons, we prefer the use of nondepolarizing agents in a small "priming" dose in the awake patient, followed by a larger "intubating" dose as described by Nagashima *et al.*,⁴ and by Waldburger *et al.*⁵ We have found that this allows the advantage of safe, quick intubation with a smaller total dose of the agent. Contrary to the impressions expressed in Bourke's letter, we have not seen an increased morbidity or mortality rate in our experience of approximately 200 patients over the past year.

The concept that the loss of sight in open eye injuries should be accepted as inevitable runs counter to the very purpose of surgery in these patients. If the loss of binocular vision could be accepted with equanimity, the fields of ophthalmology and ophthalmic anesthesia would not have developed to their present level of sophistication. Most patients with penetrating eye injuries are children or young adults with the major portion of their work life ahead of them. Monocularity may seriously reduce the range of job opportunities available to these patients. There are also serious psychologic and cosmetic considerations for monocular patients.

With the development of rapid-acting, nondepolarizing agents, we feel that succinylcholine is contraindicated in the induction of patients with open eye injuries because an alternative exists that is both safe to the patient and compatible with successful ocular reconstruction efforts.

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Anesthesia for Open Eye Surgery

To the Editor:—In his letter, Dr. Bourke¹ compliments Libonati *et al.*² on their recent article supporting the use of succinylcholine in open eye surgery. He adds that, based on his own survey of ten ophthalmologists, "only a small percentage of patients with penetrating eye injuries recovered any useful sight in the injured eye" and that only two of 27 patients who had lost an eye considered monocular vision a handicap. We believe that these limited surveys seriously underestimate both the potential for useful vision postoperatively and the advantage of binocularity.

In a series of three reports on a total of 1,077 patients who had perforating eye injuries,³⁻⁵ the prognosis for useful vision after surgery was encouraging; 40-65% had vision of 20/40 or better; only about 20% of eyes had no useful vision. The prognosis was affected by several fac-

tors, especially by whether the injury involved the anterior and/or posterior segment of the eye, whether there was uveal prolapse, and whether intraocular reaction resulted.³⁻⁶

Recent advances in retinal surgery have demonstratively increased the salvage of vision after severe traumatic injuries to the posterior segment, *i.e.*, techniques to treat vitreoretinopathy, use of long-acting intraocular gases, silicone oil tamponade, intraoperative endophotocoagulation, and the use of retinal tacks.

Libonati's study, a retrospective report without a control group for comparison, is without statistical validation. The only endpoint in the study is whether the surgeon complained of extrusion of eye contents. No mention is made of difficulty with uveal prolapse, bleeding, or reformation of the globe. There is no information regarding

the degree of preservation of useful vision afterward. The fact that some of the most serious eye injuries result from scleral rupture, after which one may be unable to observe extrusion of eye contents until after exploration of the globe and orbit, is not discussed.

Before surgery for penetrating eye injury, adequate examination is often not feasible until after the patient is anesthetized, prepped, and draped. Prolapse of eye contents is not unusual. Just because the surgeons in Libonati *et al.*'s report did not complain of extrusion after anesthetic induction and use of succinylcholine does not mean that there was none or that there was no additional loss of contents.

We are fortunate to have alternatives to use of succinylcholine for intubation. Given the potential for good visual outcome, we feel that the literature supports evidence for avoidance of use of succinylcholine in penetrating eye injuries.^{7,8}

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In reply:—I thank Drs. Rich and Weiner and their colleagues for their interest and sharing their experience. However, the effect of succinylcholine during a rapid-sequence induction has not been well described in the literature. In fact, one of their own references summarizes "We found that Dtc, 3 mg . . . given three or more minutes prior to the use of Sch, will prevent an increase in intraocular pressure."¹ My point remains that the report by Libonati *et al.*² demonstrates that succinylcholine can be used safely for open eye injuries. This gives the anesthesiologist another option in considering the total care of patients.

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Assay for Serum Sufentanil Level Is Not Sensitive

To the Editor:—We agree with Weldon *et al.*¹ that there are no assays that allow one to estimate accurately the elimination clearance of sufentanil after small standard doses. Unfortunately, their capillary gas chromatographic

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method, as it is presented,¹ does not seem to change this situation and may actually lend confusion to what might otherwise have been a straightforward clinical report.²

The most serious deficiency in the report of this new