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## Skeletal Muscle Relaxation in Patients Undergoing Electroconvulsive Therapy

*To the Editor:*—The use of general anesthesia and skeletal muscle relaxants has been standard technique in electroconvulsive therapy (ECT) since the 1950s. Hundreds of thousands of patients receiving ECT have been treated successfully with methohexital and succinylcholine. It has come to our attention that a common error in the practice of ECT may be premature delivery of the electrical stimulus, *i.e.*, before the maximal effect of succinylcholine has occurred. This may result from the concern that the hypnotic effect of the methohexital will wane.

The time to onset of maximal relaxation (TMR), *i.e.*, neuromuscular block following succinylcholine 1 mg/kg recently has been determined to be longer than the traditional minute associated with rapid sequence induction, and intubation and to have significant age dependence.<sup>1</sup> We recently gathered similar data on patients undergoing ECT and receiving 1 mg/kg of succinylcholine for neuromuscular block. In 35 consecutive patients who underwent ECT, we measured the time between the completion of the injection of succinylcholine and total abolition of the Babinski response. Additionally, the adductor pollicis muscle response to ulnar nerve stimulation was assessed. In all cases, the response to nerve stimulation was extinguished long before cessation of fasciculations and abolition of the Babinski response in the lower extremities. We found an average TMR of 101 s, with a range of 70–155 s. In no case was this interval less than 1 min.

In our sample, patients older than 60 yr of age ( $n = 18$ ) had a mean TMR of 109 s, with a range of 75–155 s. Patients 40–60 yr of age ( $n = 8$ ) had a mean TMR of 97 s, while patients younger than 40 yr of age ( $n = 7$ ) had a mean TMR of 84 s. Using a regression model analysis, the variance in TMR with age was statistically significant ( $P = 0.0072$ ). A Bonferroni multiple comparison analysis revealed that the TMR was significantly different in the greater than 60 and less than 40 age groups ( $P \leq 0.05$ ).

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## Laryngeal Mask Airway Cuff Pressure and Position: The Effect of Adding Nitrous Oxide to the Cuff

*To the Editor:*—The silicon rubber cuff of the laryngeal mask airway (LMA) is highly permeable to nitrous oxide, and both cuff volume and pressure increase during nitrous oxide anesthesia.<sup>1,2</sup> Some in-

Based on our results and those of Koscielniak-Neilson *et al.*, we recommend that in most clinical situations, one should wait at least 90 s or more between the injection of succinylcholine and the delivery of the electrical stimulus in patients undergoing ECT. Careful attention to waiting to deliver the electrical stimulus at the time of maximal effect of succinylcholine should allow for better attenuation of motor seizure activity without the physician having to resort to inordinately large doses of muscle relaxant.

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### Reference

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