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Indicators of Recovery of Neuromuscular Function

To the Editor: — It was the American philosopher George Santayana who observed that "those who cannot remember the past are condemned to repeat it."[1]

I draw his words to your attention in response to the report by Kopman *et al.*[2] and the Editorial comments that it stimulated in the March 1997 issue of ANESTHESIOLOGY.

As one will see from the material I enclose,[3] the observation that small doses of nondepolarizing muscle relaxants can have a profound and long-lasting effect on the ocular muscles is by no means new.

Nor do I claim any originality for the observation. Speaking from memory only, I think that interested readers will also find it mentioned in Draper and Whitehead's classical report. They went much further than did Kopman *et al.* They submitted each other to total body curarization without sedation.

But as their names are associated with "Diffusion Respiration," the authors probably overlooked that report in their own search of the literature.

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In Reply: — We thank Dr. Jones for bringing his publication of 1963 to our attention.[1] In that report, he observed that after the injection of 20 mg of gallamine into his right femoral artery, almost complete paralysis of the ipsilateral leg soon followed. The only other sign or subjective symptom of neuromuscular block that he experienced was ocular in nature, and these persisted for 2 h. It should be noted that the ED_{95} of gallamine is 2.4 mg/kg, and thus the dose he administered to himself was small.[2] We certainly do not want to claim primacy for the observation that vision may be impaired by very small doses of nondepolarizing relaxants. It is a common observation that patients often complain of blurred vision after the usual d-tubocurarine precurarizing dose of 0.05 mg/kg.

The only publications of Draper and Whitehead that we have been able to locate were done using a canine model. We would welcome any help in tracking down the citation of total body paralysis in humans to which Dr. Jones refers. Nonetheless, Dr. Jones is correct in stating that the observation that subjective symptoms of residual weakness may be long-lasting is not a new one. A study that deserves to be read by all clinicians is the 1947 paper by Smith *et al.*[3] In that report, Smith (an 80-kg male) received 500 U (75 mg) of d-tubocurarine over 33 min while fully awake. Despite the administration of 3.5 mg of neostigmine over the following 100 min (last dose, 4:30 P.M.), symptoms of residual weakness persisted throughout the evening.

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