A Possible Mechanism of Succinylcholine-induced Hyperkalemia

To the Editor:—Two recent articles1,2 may indirectly suggest a possible mechanism of succinylcholine-induced hyperkalemia in two disorders in which there is inadequate information to determine mechanism.3 These articles document resistance to nondepolarizing relaxants, or a shift to the right of the dose-response curve, in patients with upper-motor-neuron lesions or thermal trauma. These findings might correlate with extrajunctional spread of receptor sites, and, if so, would help to explain succinylcholine-induced hyperkalemia via a common mechanism. In addition, measurement of the efficacy of nondepolarizing relaxants may provide a safe, useful method to examine in man the time course of the hyperkalemic response. This is particularly needed for patients with upper-motor-neuron lesions.

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Continuous Interscalene Brachial Plexus Block for Surgical Operations on the Hand

To the Editor:—We read with interest the paper by Rosenblatt et al.,1 reporting the usefulness of continuous axillary analgesia for a two-hour surgical correction of a traumatized hand and for analgesia for the following two postoperative days. We report here a similar case of a patient we anesthetized with continuous interscalene brachial plexus block:

A 151/2-year-old boy was brought to the operating theater for a microvascular reanastomosis after a traumatic amputation of the left thumb. The patient was sedated with diazepam, 10 mg, iv. An 18-gauge, 5-cm (Longdwell®) intravenous catheter was then introduced into the left interscalene groove according to the technique described by Winnie.2 After paresthesia was elicited the catheter was fixed in position. A 40-ml volume of bupivacaine, 0.5 per cent, with epinephrine 1:200,000, was then injected through the catheter, and a double tourniquet placed over the upper third of the humerus. The operation commenced 15 minutes later and lasted seven hours. Analgesia was excellent for the first five hours, after which a further 20 ml of plain bupivacaine, 0.5 per cent, was added. The interscalene catheter was left in place postoperatively, and eight-hourly injections of 15 ml bupivacaine, 0.25 per cent (plain), were given through it to promote vasodilatation in the hand and postoperative analgesia, which was excellent. No other analgesic was needed until the catheter was removed on the fourth postoperative day. There was no evidence of infection or any neurologic sequelae.

Continuous interscalene brachial plexus block is a useful alternative anesthetic technique for extensive operations on the hand, where vasodilatation can be so important to the success of the procedure.

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