

tween the various drug-induced hypermetabolic syndromes.<sup>3</sup> Although these reactions probably have distinct pharmacologic mechanisms, with psychotropic drugs acting primarily on central structures, they appear to culminate in a common dantrolene-responsive disturbance of skeletal muscle contractile and energetic properties, resulting in rigidity and hyperthermia.

We join with Dr. Feinglass in encouraging additional investigations of these drug-induced syndromes. However, we recommend that investigators consider the range of drug effects on central, as well as peripheral, components of the neuromuscular and thermoregulatory systems, and urge that future reports specify details on subjects, procedures, results, and control groups to facilitate comparisons between studies.

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Anesthesiology  
68:314-315, 1988

### Axillary Block of the Brachial Plexus: "You Can't Get There From Here . . ."

*To the Editor:*—Selander's editorial, "Axillary Plexus Block: Paresthetic or Perivascular," attempts to answer the question "How should an axillary block be performed?"<sup>1</sup> Selander oversimplifies the issue by claiming the superiority of single-injection techniques over elicited-paresthesia techniques with multiple injections of local anesthetic agent. However, many anesthesiologists utilize multiple injections with the aid of an electrical nerve stimulator, locating specific nerves by eliciting an electrically induced evoked motor response without a sensory paresthesia (motor threshold is lower than sensory). Selander supports his claim with studies by himself<sup>2</sup> and Plevak *et al.*<sup>3</sup> suggesting that the paresthesia technique for axillary block increases the incidence of postanesthetic neuropathy. In fact, there was no statistically significant difference in the incidence of postanesthetic neuropathy with or without paresthesias in either publication. Is the paresthesia technique associated with a higher incidence of postanesthetic neuropathy? Winchell and Wolfe\* published prospective data

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(Accepted for publication November 2, 1987.)

showing only a 0.36% incidence of post-block neuropathy in a large series of patients who had paresthesias elicited. Other factors, such as needle bevel and type, physician experience, and technique may be more important than the eliciting of paresthesias *per se*. Also, as Selander<sup>2</sup> has pointed out, other etiologic factors, such as surgery, casting, tourniquet, and perioperative positioning, should not be overlooked when evaluating a postanesthetic neuropathy.

Next, Selander<sup>1</sup> dismisses the issue of the unpredictability of single-injection techniques of axillary block, based on Partridge's<sup>4</sup> cadaver study. The relevant question for clinicians is "Can one predictably block all of the major nerves of the brachial plexus through the single injection block technique?" Clinically relevant studies<sup>5-7</sup> indicate that the single-injection technique cannot predictably block the radial and musculocutaneous nerves. We agree with Vester-Andersen that investigations intending to evaluate the influence of single factors on the quality of blockade should require thorough testing of analgesia in all segments of the arm.<sup>7</sup> Merely listing "success rate" does not validate a technique.

\* Winchell SW, Wolfe R: The incidence of neuropathy following upper extremity nerve blocks. *Reg Anesth* 10:12-15, 1985

In summary, a review of the clinically relevant literature reveals two conclusions: 1) a single-injection axillary block will not reliably block all the nerves, and 2) paresthesia techniques may or may not result in an increased incidence of postanesthetic neuropathy. As Selander himself has stated, "Any technique which results in good block without injury to the patient is a good technique." We need well-designed clinical studies to determine the true incidence of paresthesias following various techniques. We also need well-designed clinical studies which will quantify the degree of neural blockade following axillary block by various approaches.

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(Accepted for publication November 2, 1987.)

Use of a Nerve Stimulator for Peripheral Nerve Blocks. I.

To the Editor:—In response to the article by Goldberg *et al.*,<sup>1</sup> our experience with electrolocation has been quite different.

At our small community hospital, five university-trained anesthesiologists began using electrolocation after dissatisfaction with paresthesia, sheath, and transarterial axillary block methods. Training in electrolocation consisted of viewing training tapes and discussion with an anesthesiologist experienced in electrolocation.

Our retrospective review showed 142 electrolocation blocks performed over 23 months, with results as follows:

Site	Total Blocks	# Failures	% Success
Axillary brachial plexus	122	7 (4 awakened from general anesthesia with good relief)	95.1%
Interscalene brachial plexus	11	0	100%
Femoral, sciatic, intercostal, others	9	0	100%

All blocks were performed with the same nerve stimulator used by the authors, and with insulated needles. Success was defined as adequate analgesia from the nerve block with judicious amounts of sedation (verbal contact maintained with patient) and occasional use of small amounts of local anesthetic infiltrated for "hot spots."

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(Accepted for publication November 2, 1987.)