

economical use of expensive drugs that may only have short lives in solution, *e.g.*, sodium nitroprusside.

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A Caution on Vecuronium Priming

To the Editor:—We read with interest the recent report by Schwarz *et al.*¹ on the priming principle for tracheal intubation with vecuronium.

Schwarz *et al.* caution that a 20 $\mu\text{g}/\text{kg}$ priming dose may cause significant paralysis if administered to awake patients. They imply that a 15 $\mu\text{g}/\text{kg}$ dose is safe, since in their study of 10 awake premedicated patients, the patients "experienced no discomfort."

Engbaek *et al.*² recently studied the effects of 15 $\mu\text{g}/\text{kg}$ vecuronium on awake nonpremedicated patients and found decreases in train-of-four to 0.57, 0.58, 0.59, and 0.82 with considerable subjective symptoms in four patients. This prompted them to discontinue their study at this dose range before including the 10 patients anticipated. They conclude that doses higher than 10 $\mu\text{g}/\text{kg}$ are not well tolerated and they report a patient in whom 5 $\mu\text{g}/\text{kg}$ caused a dangerous degree of paralysis.

We agree with Schwarz *et al.* that whenever a priming technique is used, provisions for immediate induction of anesthesia in patients intolerant of this procedure is mandatory. Administering the priming dose immediately after the intravenous has been started, as suggested,¹ may be imprudent if the patient is not yet in the operating room or may not be closely watched.

In those patients who require rapid-sequence inductions

in whom succinylcholine is contraindicated, we recommend the use of a single large dose (0.2 mg/kg)³ of vecuronium on induction.

Further studies are necessary to determine what priming doses are well tolerated and whether these reduced doses confer a significant enough hastening of relaxation to justify their risk and the increased time necessary for induction.

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Concerning the Acceptability of Awareness during Surgery

To the Editor:—In his editorial, "Awareness during Surgery," Blacher¹ supports the view expressed by Bogetz and Katz² concerning a willingness to accept that total oblivion of consciousness in traumatized patients may not

always be achievable. We object to these statements since the American Society of Anesthesiologists guidelines for patient care note that Anesthesiology includes "the management of procedures for rendering a patient insensible

to pain and emotional stress during surgical, obstetrical, and certain medical procedures."* This premise must be considered our first and most important aim. However, transgressions, exceptions, and deviations have all been noted.

We wish to express our concern about this opinion because numerous cases of awareness³⁻⁵ have been reported during the last decade with apparently an ascending trend. Although this is not a new problem, as the first case was noted as far back as 1846,⁶ nevertheless, for nearly 140 years these unexpected events have been considered undesirable, regrettable, and perhaps even liable.

In their study, Bogetz and Katz² concluded that awareness by multiple trauma victims is acceptable. The acceptability of awareness under those circumstances and their interpretation introduced reasons for debate, because surely we can find agents in our armamentarium (scopolamine, low-dose ketamine, or lorazepam, *etc.*) that under circumstances of hemodynamic instability may bring about anesthesia with minimal doses. Let's leave no doubt that we are not referring to periods of low cardiac output or no cardiac output at all (*i.e.*, cardiac arrest), when the inadequacy of cerebral blood flow barely keeps the neurons alive, much less allows the memory functions to go on. We are specifically referring to the phase of recovery when hemodynamic indexes are improving.

One other "twist" on the polemic that has not been considered is the possibility that the souls of Bogetz and Katz's patients were actually "watching" the resuscitative process in a manner similar to experiences related by some victims of cardiac arrest. Those latter patients have described their bodies being resuscitated while their vigilant souls "floated" overhead.⁷ Were some of these patients truly "aware" because of insufficient anesthesia or is their recall a product of extraordinary surveillance while under stressful circumstances? Indeed, some patients who un-

dergo awareness during anesthesia may be reassured by the growing evidence on near-death experiences, which seem overwhelmingly positive and have elements—such as autoscapy—in common with some awareness episodes.^{7,8}

To decipher the mystery, it has become obvious that greater scrutiny would be desirable in all cases of awareness, including a psychiatric consultation and also, if necessary, hypnosis. As Marcia Angell⁹ has noted, "pain is soul destroying," and since one of our primordial goals is to prevent it and/or treat it, to admit to its inevitable occurrence in trauma victims seems inadmissible. Her recommendation, "the quality of mercy, here of all places should not be strained" is indeed pertinent.

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Health Experiences of Operating Room Personnel

To the Editor:—Buring *et al.*,¹ in their abridged version of a report originally submitted to the American Society of Anesthesiologists, apply the relative risk approach to health data compiled from six selected epidemiologic studies previously conducted in the United States and abroad. Unfortunately, even this sophisticated method

does not permit firm conclusions, and once again we are left with only suggestive answers to the question, "What are the risks from exposure to waste anesthetic gases in the workplace?" It would appear that reanalysis of retrospective data from this selected group, or even from all of the more than 20 epidemiologic studies conducted