Anesthesiology
72:954, 1990

In Reply.—Dr. Pace’s suggestion for use of the Receiver Operating Characteristic (ROC) curve for statistical interpretation of Watcha and White’s data is worthy of merit. When used appropriately, the ROC curve provides meaningful information in an easy-to-visualize format.

Several general issues raised by Dr. Pace are also worthy of consideration and comment. Any research relating to “depth of anesthesia” is plagued by the lack of a gold standard. Because no gold standard exists, it would be unfair to compare a new technique with existing methods. Such a comparison could only prove the new technique to be as unreliable as existing methods, not whether it was any better or worse.

To validate the clinical utility of lower esophageal contractility (LEC) as a depth of anesthesia monitor, studies have been undertaken to correlate LEC with traditional clinical signs, levels of surgical stimulation, and concentrations of volatile anesthetic agents. In all studies, the investigators concluded LEC is clinically useful for measuring anesthetic depth.

Sessler et al. observed that spontaneous lower esophageal contractions predict movement in patients anesthetized with halothane and nitrous oxide. Although their study involved adult patients, these results are in direct disagreement with those of Watcha and White. This must raise the question as to whether movement during anesthesia is a sufficiently investigated variable to constitute a gold standard with which to make a comparison. No investigation has ever demonstrated a correlation between movement during anesthesia and awareness, recall, or patient awakening. Indeed, a study of movement using the isolated forearm technique employed by Sessler et al. showed it to be insensitive as a measure of light anesthesia and wakefulness.

Dr. Pace suggests that proponents of new devices often enthusiastically (perhaps overenthusiastically) urge their adoption before proper validation. It is the intent of every manufacturer’s Clinical Research Department to properly validate a product’s performance and clinical utility before (and after) its market introduction. Without the vigorous and enthusiastic promotion of emerging technologies by manufacturers, it is unlikely that we would have seen the adoption of many new technologies with their consequent benefits to both patients and clinicians.

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REFERENCES


(Accepted for publication February 5, 1990.)

Anesthesiology
72:954, 1990

Memory Loss After Anesthesia

To the Editor.—In the course of our studies of neurobehavioral outcomes related to anesthesia and surgery we have come across three incidents where young, healthy individuals following a routine surgical and anesthetic experience have reported long-term impairment of memory. A causal relationship is not clear and careful review of their medical and anesthetic records reveals an unforeseen course. Predisposing psychosocial or emotional factors were not apparent in these individuals.

These cases pose the question whether persistent neurobehavioral deficits might occasionally occur as a consequence of anesthesia where no obvious cause, such as cerebral hypoxia, is apparent. We write to ask if any of your readers have encountered similar occurrences and, if so, would they be willing to share their experience with us?

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