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Editorial Views

Silent Death

A WORRISOME and potentially dangerous trend has developed within recent years in clinical anesthesia. Anesthesiologists seem to be yielding to outside pressures on their choice of anesthetic agents, to the possible detriment of their patients. This is most evident in the current avoidance of halogenated anesthetics in favor of other techniques for social or medicolegal reasons, but not for scientific reasons. There are strong suspicions that in very rare cases, particularly after repeated exposures, halothane may cause hepatic damage. However, an irrefutable cause–effect relationship between halothane anesthesia and hepatitis has not been established. Nevertheless, many anesthesiologists now try to avoid this hypothetical risk associated with halothane by using, instead, nitrous oxide–oxygen–muscle relaxant–opioid anesthesia. Is there evidence that this increases overall safety for the patient?

We do not think so. The National Halothane Study suggests that halothane has, in fact, an even better record than most other agents. To date no study that contradicts the data of the National Halothane Study or that proves the clinical advantages said to be associated with the relaxant anesthesia technique has been published.

Indeed, presently available data suggest the contrary, that hepatic damage and renal failure after the use of halogenated agents are, if anything, rarer than the life-threatening problems of respiratory insufficiency after anesthetic procedures relying on relaxants and opioids. No controlled studies address this problem, but available reports may be cited to contrast fatal postanesthetic hepatitis with the frequency of preventable fatal errors in management of other techniques.[1,2] Nitrous oxide–oxygen–muscle relaxant–opioid anesthesia certainly is not inherently toxic and serves many purposes well, but this technique introduces its own particular risk. It requires meticulous intra- and postoperative supervision of the patient, and is probably less forgiving than other techniques that rely primarily on inhalation agents. With relaxant techniques we must be able to guarantee optimal conditions in the operating and recovery rooms, conditions not always readily available in a busy hospital with the usual turnover of personnel.

If there is suspicion that complications such as respiratory failure and circulatory disturbances associated with relaxant techniques are more common and more serious than hepatic or renal problems after anesthesia with halogenated drugs, why do we hear so much about parenchymal damage and halogenated agents and so little about brain damage or cardiac arrest and relaxant techniques? Perhaps we have inundated our own literature with publications on biotransformation of anesthetics and its relationship to hepatic and renal dysfunction. This focused the attention of internists, surgeons, and lawyers on problems that surely require recognition and attention, but not an overreaction. Halothane and hepatitis seem to form a striking cause–effect sequence. In contrast, no single cause springs to mind after a silent death following relaxant–opioid anesthesia.

Clinical anesthesiologists have, with some justification, chided their academic confreres, saying that while the latter continue to de-

scribe new if rare hazards associated with major inhalation anesthetics, they don't seem to care about determining whether these agents might not really be safer than other techniques. We would like to state clearly that, in our opinion, most major, widely used inhalation anesthetics are safe and, in fact, in many settings safer than general anesthetic techniques involving relaxants and opioids. Pressure from non-anesthesiologists and fear of legal retribution should not compel the anesthesiologist to use techniques that today might be more defendable in malpractice suits but are medically poorer choices.

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Thoughts on a Paleoanesthetic

FORTY YEARS AGO, almost to the month, Ralph Waters and his associates introduced a new anesthetic, cyclopropane, into clinical practice.[1,2] The two articles on cardiovascular responses to cyclopropane in the present issue offer a fitting, if fortuitous, way to observe such an important anniversay. The significance of Waters' contribution in 1934 may be hard to grasp in 1974, when we are so blessed (afflicted?) with a plethora of anesthetics, until one realizes how limited the choice of general anesthetics was at that time. The anesthetist of 1934 had two general anesthetics, ether and chloroform. Thiopental had not yet been introduced. There were no muscle relaxants. Today's halogenated anesthetics were decades off. There was nitrous oxide, of course, and there were ethylene and acetylene, for what they were worth, but they lacked the potency necessary for an anesthetic prior to the days of balanced anesthesia. (The frequency of reports on acetylene as an anesthetic in the decade prior to 1934 makes an interesting commentary on the need for better anesthetics at the time.) What cyclopropane provided in 1934 was an anesthetic capable of producing surgical levels of anesthesia without tissue toxicity, the first viable alternative to ether and chloroform since their introduction almost 90 years earlier.

In retrospect, however, the introduction of cyclopropane did more than make available to the anesthetist of 40 years ago a sorely needed addition to his armamentarium. Cyclopropane also provided yet another stimulus for development of the specialty of anesthesiology itself, a specialty which, in 1934, could best be described as in its earliest nascent stages. The effect of the introduction of cyclopropane on the development of anesthesiology was particularly evident in the United States, where ether had for so long been the dominant anesthetic. The pharmacologic and physical properties of ether are such that it could be, and was, administered by individuals with little or no medical training.[3] So long as ether remained the principal general anesthetic, there was neither apparent need for medically qualified personnel in anesthesia nor incentive for physicians to enter the field. Cyclopropane changed this, not immediately, but over the years, for it was obvious that here was an anesthetic with manifest advantages, but that in order for these advantages to be realized it must be administered by individuals with medical training. Cyclopropane provided further impetus for the developing concept that the challenges in anesthesia might deserve the attention of physicians full-time in the field. The impact of cyclopropane on development of anesthesiology followed by only a few years another important event, the introduction into clinical practice by Brian Sword[4] and, again, by that indefatigable pioneer in anesthesia, Ralph Waters,[5] of practical methods of absorbing