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Amide or Ester Local Anesthetic

To the Editor:—I offer the following suggestion to assist others in remembering whether a local anesthetic is an amide or an ester. The generic names of most local anesthetics end in -caine. The word amide has a letter "i" in it. All popular "amide caines," including the newer long-acting ones, have a letter "i" before the suffix -caine. Thus, lidocaine, mepivacine, etidocaine, bupivacaine, prilocaine and dibucaine are amide-caines. Non-amides do not have an "i" before the -caine, *e.g.*, cocaine, procaine, tetracaine, chloroprocaine, butethamine (monocaine), cyclomethycaine and proparacaine. (Piperocaine is an exception; it is an ester.) I suggest that when future local anesthetics are named this tradition be followed.

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Fail-safe Oxygen System

To the Editor:—In the correspondence section,[1] Drs. Levin and Balasaraswathi described the shortcomings of so-called "fail-safe" oxygen systems. The system on the Foregger 710 Anesthesia Control Center that Dr. Rendell-Baker referred to is called the Dual Guardian System. It does shut off all flow of non-life support gases when oxygen flow is shut off or when oxygen pressure fails. The Dual Guardian System is now available on Foregger Foretrend Anesthesia Machine models and on the new Foregger 705 Anesthesia Machine. Although the Dual Guardian System does protect against the oxygen flow shut-off and oxygen pressure loss, we recommend the use of an oxygen monitor whenever anesthesia is administered from any anesthesia machine. This recommendation is based on the premise that patient safety is increased by the use of two or more independent safeguard systems.

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Incorrect Measurement of Cholinesterase Activity

To the Editor:—The clinical report by Palahniuk and Cumming[1] addresses the question of whether serum cholinesterase activity is inhibited by inorganic fluoride formed following administration of methoxyflurane to obstetrical patients. In individuals with normal cholinesterase, a fluoride concentration of 50 μM will inhibit enzymatic activity by about 60 per cent[2]; lower concentrations inhibit the enzyme to a lesser extent. Palahniuk and Cumming state that this enzyme was not significantly inhibited in parturients with mean peak serum inorganic fluoride concentrations of 13.9 ± 2.1 μM. However, use of the method of Kalow and Lindsay[3] for measurement of cholinesterase activity, as was done in this study, invalidates these conclusions. Inhibition of serum cholinesterase activity by inorganic fluoride is both reversible and concentration-dependent.[3] The Kalow and Lindsay method utilizes a 1:100 buffer dilution of serum, so that the inorganic fluoride in the final assay must have been diluted by that amount and its inhibitory effect proportionally decreased. The appropriate procedure would have been to dilute the serum in a buffer that contained the same concentration of inorganic fluoride as that measured in each patient's serum. This would have resulted in assay of the enzyme at the same inorganic fluoride concentration as that present in undiluted serum.

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In reply:—Although I recognize the expertise of Drs. Hitt and Mazze involving studies of methoxyflurane and inorganic fluoride, I cannot entirely accept their criticism of our study. To artificially create a tremendous excess of inorganic fluoride in relation to the concentration of cholinesterase *in vitro* would have no clinical relevance to the situation *in vivo*. Although we might then be able to measure inhibition of cholinesterase activity, this could not be interpreted as meaning the cholinesterase activity was similarly decreased in these patients. I would re-emphasize our conclusion that the levels of inorganic fluoride achieved *in vivo* are insufficient to depress serum cholinesterase activity to a clinically relevant extent.

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A Simple Technique to Prevent Overdistention of Flow-directed Catheters

To the Editor:—A rare complication associated with the use of flow-directed catheters for measurement of pulmonary-artery wedge pressure is that of pulmonary artery rupture. One factor contributing to this is overdistention of the balloon.[1] The incidence of this complication may be decreased by carefully observing the pressure oscillation on a monitor and not inflating the balloon any further than necessary to obtain a wedge position. Occasionally, however, accidental overdistention of a balloon and the surrounding pulmonary artery may occur, especially in pediatric patients, where the blood vessels are small and the balloon volumes vary with the size of the catheter inserted.

We have been using a simple, reliable method to prevent accidental balloon hyperinflation (fig. 1). By making four holes with a 22-gauge needle in the barrel of the inflating syringe at the desired volume, one limits the distending volume that this syringe will introduce. Although one may fill the syringe with more than the volume needed to obtain a wedge position, the four holes in the barrel prevent more than the desired volume from being injected, since air flows out the holes until the plunger is beyond their level. Such a vented syringe is included with some flow-directed catheters.* However, the advantage in using our modification is that it may be applied to any catheter and the volume is not preset by the manufacturer.

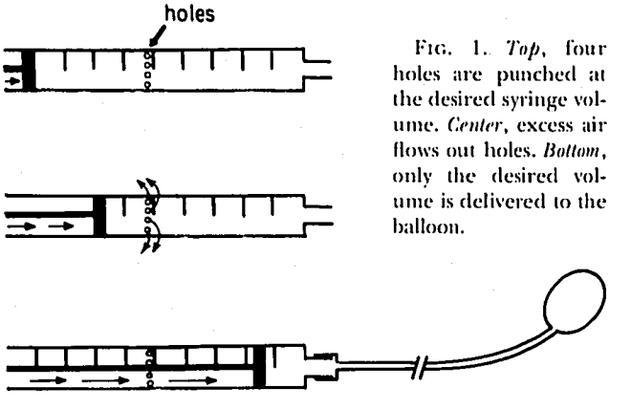

FIG. 1. *Top*, four holes are punched at the desired syringe volume. *Center*, excess air flows out holes. *Bottom*, only the desired volume is delivered to the balloon.

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