not received similar reports of this type of occurrence. Furthermore, a result of this incident, a field investigation involving a number of GMS absorbers with adjustable-height bag arms did not detect any missing locking rings. Routine service and preventive maintenance procedures conducted by Ohmeda do not require the removal of the locking ring. Thus, the reason why this particular GMS absorber lacked the locking ring is not definitely known.

The GMS absorber with an adjustable-height bag arm contained a locking ring designed to retain a plastic gasket below the gas outlets. Ohmeda discontinued the manufacture of GMS absorbers with adjustable-height bag arms in mid-1985 as part of a design simplification program. Since that time, GMS absorbers have been supplied with fixed-height bag arms. An occurrence such as described in the letter is not possible with the newer designed bag arm.

For additional information, contact the local Ohmeda representative or contact Ohmeda in Madison, Wisconsin, at (608)221-1551.

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Lethal/Toxic Injection of 20% Lidocaine: A Well-known Complication of an Unnecessary Preparation?

To the Editor:—The continuing availability of 20% lidocaine concentrates "for dilution only" has provoked eight case reports in peer review journals since 1979.[1–8] These reports document the danger that these preparations are likely to be mistaken for the more frequently used and familiar 2% solutions for iv injection. The injection of 1 or 2 g of lidocaine directly iv generally produces a life-threatening situation or often death.* In one case report two cases occurred in one institution, in another, two 1-g unit doses were injected into one person's circulation.[2,3] An average of two reports of such accidental toxic injection with 20% lidocaine are received at the Food and Drug Administration (FDA) yearly, with as many as six reports in 1979. Most frequently, preparations in syringes have been implicated, with a mortality rate of 75%.* My personal activities in this field have uncovered two recent cases of toxic injection in the United States that were never formally reported to a federal agency for tabulation, so nonreporting of such events certainly can be stated to exist. The scope of this problem is clearly greater than cases reported to the FDA alone, and misadventures continue to occur inspite of all previously instituted packaging improvements.

A review of 30 reports filed at the FDA led to the unanimous decision of the Anesthesia Life Support Advisory Committee to restrict the unit dosage of prefilled syringes to 100 mg in April 1985.* One- and two-gram syringes remain on the market, and the contents are easily injected into infusion tubing Y-ports in spite of "protective needle housings." Persons unfamiliar with these preparations are at greatest risk for making this mistake, and all medical personnel should be made familiar with them. Elimination of these preparations from hospital stocks is a viable alternative in precluding morbidity, mortality, and liability on a local scale. Safer alternatives for constituting iv infusions are currently available, and premixed bags for infusion or 4% concentrates can be recommended at this time.

Most important is that any previously unreported or newly occurring misadventures, as well as any perceived packaging complaints regarding lidocaine (or any drug) be reported directly to the FDA offices as such and with as much detail as possible. This reporting will increase appreciation of drug-related problems at the federal agency responsible for protecting the patient from unsafe products. This could hopefully induce the elimination of 20% lidocaine from the market at the soonest possible date. The use of FDA Form #1639 will guarantee confidentiality in the reporting of events. "Packaging Complaint" is not a solicited item on this form, and the individual reporter should emphasize any perceived packaging problem in using this form. Reporting of aborted or "near-miss" events to the FDA also is desirable.

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* Graham CF: Report to the Anesthesia and Life Support Advisory Committee, October 24, 1984. Food and Drug Administration, Rockville, Maryland 20857.

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Pulse Oximetry during Shoulder Arthroscopy

To the Editor:—Arthroscopy has become increasingly popular as a means of diagnosing joint disease including arthroscopy of the shoulder. A 25-yr-old male medical student was to under go left shoulder arthroscopy for recurrent dislocation under general anesthesia. He was positioned as in figure 1. A satisfactory check for capillary filling and pulse was made and skin cleansing was started. After 10 min, the fingers were blue and pulseless. The weights were removed, and a pulse oximeter was attached to the index finger. After return of adequate perfusion, weights were reapplied and manipulated until the pulse remained steady.

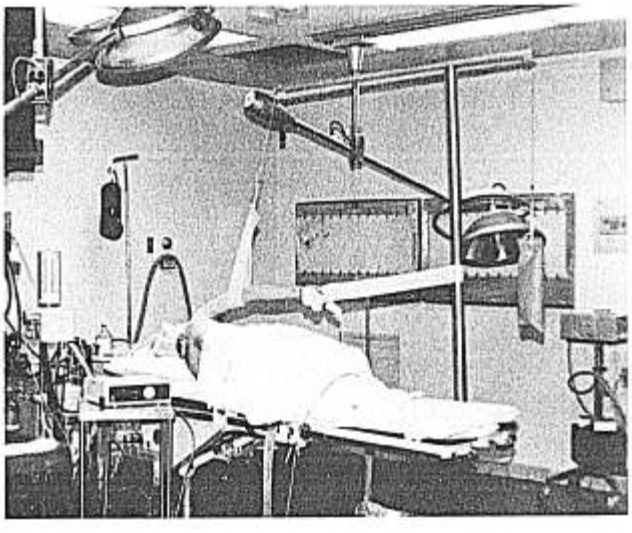

FIG. 1. One frequently used set-up for shoulder arthroscopy with pulse oximeter attached.

An 18-yr-old male was scheduled for right shoulder arthroscopy. The trachea was intubated, and the patient was positioned as in figure 1; a pulse oximeter was applied to one of the fingers and was used as a guide to adjust rope tension. Early warning of the need to reposition the arm intraoperatively was given by loss of the pulse form. Repositioning was accomplished quickly, and sterility was not compromised.

We believe pulse oximetry monitoring during shoulder arthroscopy provides a simple, inexpensive, and convenient early-warning system of excessive traction and brachial artery compression.

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A Simpler Design for Mass Spectrometer Monitoring of the Awake Patient

To the Editor:—We share with Drs. Norman and Ibarra and their colleagues[1,2] their interest in monitoring of the awake patient with a mass spectrometer.

Our technique for this purpose is as satisfactory, but simpler. We use an ordinary plastic iv catheter (gauge 14, 1¼ in), inserting the iv catheter through one of the side