



FIG. 1. Values for the QTc are shown on the left vertical axis, values for total sufentanil dose are shown on the right vertical axis. -24H = QTc 24 h prior to surgery; -30m = QTc 30 min prior to induction. Measurements 10 through 90 are minutes post-induction. Upper limit of normal for QTc is 0.440 s.

This case illustrates that narcotics in clinical doses may produce prolongation in QT interval. This patient clearly displays lengthening in QTc after administration of the sufentanil during the anesthetic induction and maintenance period prior to cardiopulmonary bypass. We speculate that the observed change in QTc resulted from a prolongation of ventricular repolarization produced by the high-dose narcotic anesthetic. The electrophysiologic activity of the narcotic anesthetic described in this case appears to be antiarrhythmic in char-

acter, and might be beneficial. It is our concern that narcotics used in high doses may have an additive effect in patients with prolonged QT interval (e.g., patients on quinidine therapy). We would suggest that one should be cautious when using high doses of narcotics in patients with congenital or required abnormalities of QT interval who may be predisposed to premature contractions and subsequent R on T phenomenon.

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### Midazolam in Obstetric Anesthesia

*To the Editor:*—In their recent Letter to the Editor, Heyman and Salem<sup>1</sup> recommended postponement of midazolam administration during regional analgesia for cesarean section until after the newborn baby had been shown to the mother, to prevent complaints of amnesia for the birth experience. Modern obstetrics, however, favors conscious participation of the mother during the entire peripartum period. Today's new mothers want to remember more than a brief glimpse of the baby in the delivery room. They desire a clear recollection of their first intimate interaction with the newborn, which, in our institution, takes place approximately 3 h after completion of surgery. At this time, breast feeding may be initiated.

The amnesic effects of midazolam can be profound and prolonged.<sup>2,3</sup> The use of midazolam in obstetrics

should, therefore, be limited to special indications. With satisfactory regional analgesia, comfort of the mother during closure of uterus and abdomen can be provided by conversation, music, or a sedative without prominent amnesic properties.

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## Potential Eye Damage from Reusable Masks

*To the Editor:*—Recently, the ASA distributed guidelines for inspection of an anesthesia apparatus prior to the initiation of an anesthetic.\* Despite the extensive nature of these recommendations, we were recently confronted with a defect which, although not discussed in these guidelines, if undetected, could result in a tragic outcome. During pre-oxygenation, prior to induction of anesthesia in a 26-yr-old woman, she complained of a burning sensation in the left eye. Upon removing the mask, we noticed clear fluid at the medial corner of the left eye which we wiped away. When the mask was replaced on the patient's face, she again complained of burning and more fluid appeared. After removing the mask and wiping away the fluid, a gentle squeeze of the face mask caused clear fluid to squirt from the rim pad (fig. 1). The patient's left eye was flushed gently with saline and the face mask was exchanged for a new mask. The anesthetic was continued without additional complications. Postoperatively, there was no residual erythema and the patient denied any further discomfort or visual disturbance.

The mask used in this case was an anatomical mask (Connell mask, B.O.C., Form-It) made by Ohio Medical. It has a malleable body made of firm rubber which can be molded to fit the face. The rim of the mask forms a seal by conforming with the face via an air-filled cushion. The pressure within the cushion can be regulated by injecting or withdrawing air through a connector located at the bridge of the mask. Following normal use at our hospital, the masks are soaked in a cleaning solution containing the following detergents and disinfectants: sodium dodecyl benzene sulfonate, propylene glycol, linear alcohol, glutaraldehyde, ethoxylate, oleic diethanolamide, tetrasodium EDTA, Quaternium-15, and alkyl-dimethylethyl-benzyl-ammonium chloride. Masks are then rinsed in distilled water and returned to the OR for patient use. Several warnings about toxicity appear on the cleansing agent containers, especially with regard to damage to the eyes.



FIG. 1. The defective anesthesia mask with the rim cushion filled with fluid under pressure.

If a hole exists in the rim of the mask, as was the case with this mask, it is possible that the cleaning solutions could accumulate inside the rim and subsequently leak out when the mask is applied to the patient's face. Fortunately, in this situation, a serious complication was avoided by rapid action following the patient's complaint. However, a smaller leak or less pressure on the mask may have permitted induction of anesthesia to progress without revealing the problem. If the cleaning solutions then leaked into the eyes, visual damage might have occurred. Reusable masks should not be expected to last forever. We, therefore, recommend that, in addition to checking for leaks in the breathing circuit, the mask should also be vigorously inspected for defects. If closer inspection reveals frequent damage, alternative methods of sterilization should be considered.

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\* Anesthesia Apparatus Checkout Recommendations, ASA Newsletter, pp 5-6, October, 1986.

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