

## REFERENCES

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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.

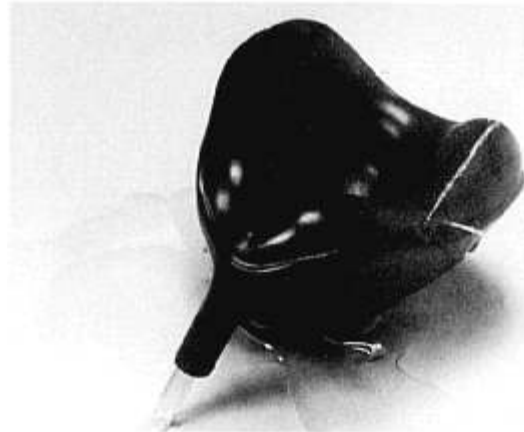


FIG. 1. The defective anesthesia mask with the rim cushion filled with fluid under pressure.

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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