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Nitrous Oxide Abuse Presenting as Premature Exhaustion of Sodasorb

To the Editor:—Recently in my department we were having what was believed to be a problem with the quality of our Sodasorb Pre-Pak (Dewey and Almy Chemical Division): within 3 days, five of our six Sodasorb cannisters on three anesthesia machines needed to be changed. This was very unusual for the department. We considered the possibility that the Sodasorb was somehow faulty.

Three days after this problem was reported, the operating room team was called in for a late night case. A new hospital employee was found in the operating room breathing nitrous oxide with the mask strapped to his face. The Sodasorb cannister was completely blue, and water, not just mist, partially filled the breathing circuit. He obviously had been in the operating room for a long time, since he was found there 6 h after his shift had finished. He also had been in the operating room several nights earlier, and because of a logical reason for being there, the incident was not pursued.

Early exhaustion of the Sodasorb was our first indication that something was wrong in the operating room. The employee also had tampered with the isoflurane vaporizer, subsequent use of which could have injured a patient. When conditions in the operating room are not as they have been or not as they should be they should be investigated until a logical answer is found.

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Anesthesia for Microlaryngeal Laser Surgery

To the Editor:—The report by Sosis[1] of a fire in a "laser-proof" endotracheal tube reaffirms our belief that a "no-tube" technique is by far the safest for microlaryngeal laser surgery. Currently, we have performed approximately 1,000 laryngeal laser procedures using the proximal jet ventilation technique, and have reported our method and results.[2]

"Proximal" implies that the jet opening lies within the lumen of the laryngoscope and above (proximal to) the vocal folds. This particular method eliminates risk of barotrauma and prevents fire in the airway. Jet ventilation is effective even when there is significant laryngeal disease, and it has the additional advantage of allowing the surgeon an unobstructed view of the surgical field.

We believe that the reluctance of many anesthesiologists to use jet ventilation is unfounded. Jet ventilation is the most effective and safest technique currently in use.

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In reply:—I thank Koufman and Weeks for their comments on my report of an airway fire during laser surgery using a Xomed Laser Shield tracheal tube.[1]

Jet ventilation of the lungs can be carried out without the presence of combustible tracheal tubes; however, it has several potential pitfalls. It typically involves the administration of a high-pressure stream of gas (usually 100% O_2) intermittently along the axis of an operating laryngoscope. In patients whose glottis is patent (unobstructed by tumor and adequately abducted secondary to muscle relaxants) and whose pulmonary compliance is not seriously reduced, the jet ventilation technique can provide adequate pulmonary ventilation. The axis of the jet must be aligned with that of the trachea, and adequate egress of ventilating gases must be ensured. Misalignment of the jet can cause severe gastric dilatation and regurgitation.[2]

Barotrauma has been reported with the supraglottic jet technique advocated by Koufman and Weeks.[3] Furthermore, the jet technique usually requires the use of a totally intravenous anesthetic technique since exhaust gas scavenging is very difficult. Another disadvantage is that movement of the vocal cords due to the high gas velocities used may impede laryngologic surgery. Mucosal drying also may occur. Finally, the jet ventillation technique may be contraindicated for children with juvenile papillomatosis, due to the possibility of pulmonary implantation.

The jet ventilation technique has been used successfully, albeit with