SHARON J. YELICH, M.D.
Associate of Anesthesia
Northwestern University School of Medicine;
Attending Staff, V. A. Lakeside Medical Center
Chicago, Illinois 60611

REFERENCES

1. Borland LM, Swan Dm, Leff S: Difficult pediatric endotracheal intubation: A new approach to the retrograde technique. ANESTHESIOLOGY 55:577–578, 1981
2. Rucker RW, Silva WJ, Worcester CC: Fiberoptic bronchoscopic nasotracheal intubation in children. Chest 76:56–58, 1979
3. Vauthy PA, Reddy R: Acute upper airway obstruction in infants and children. Evaluation by the fiberoptic bronchoscope. Ann Otol Rhinol Laryngol 89:417–418, 1980
4. Stiles CM: A flexible fiberoptic bronchoscope for endotracheal intubation in infants. Anesth Analg (Cleve) 53:1017–1019, 1974
5. Alfery DD, Ward CF, Harwood IR, Mannino FL: Airway management for a neonate with congenital fusion of the jaws. ANESTHESIOLOGY 51:340–342, 1979
6. Ovassapian A, Dykes MHM, Golmon M: Fiberoptic nasotracheal intubation: A training program. ANESTHESIOLOGY 53:S352, 1980.

(Accepted for publication December 11, 1981.)

Anesthesiology
56:413–414, 1982

An Easily Overlooked Malassembly

To the Editor:—Checking the anesthesia machine for leaks immediately prior to each use is recognized as an important measure in avoiding iatrogenic problems. However, the need to ascertain proper functioning of all valves and the patency of all breathing tubes is less widely appreciated. Recently, we experienced an unusual malassembly of the circle system that emphasizes the necessity of performing both of these checks immediately before the equipment is used.

After induction of anesthesia in one of our patients and after controlled ventilation was instituted, we realized that chest excursions were inappropriate. Chest hyperinflation was occurring, compliance was decreasing, and positive pressure was developing in the circuit. On preliminary inspection of the anesthesia machine and breathing circuit, we observed no abnormalities; however, on a closer inspection, we noted a surprisingly easily overlooked malassembly of the circle system (fig. 1). The corrugated hose of the expiratory limb had been attached to the exhaust port of the relief valve, and the exhaust hose had been attached to the expiratory connection on the canister head. Although these two hoses are visibly different in diameter, their connector fittings allow such a malassembly. Once it has occurred, the common color of the hoses, the proximity of exhaust port to expiratory canister port, and the presence of multiple hoses predispose to nondetection of the problem.

This anesthesia machine had been checked for leaks, patency, and proper valve function sometime prior to its use. However, the hoses apparently had become disassembled and then were reassembled inappropriately. Immediately prior to use of the machine, it had once again been checked for leaks, and none were found. If a check for patency and proper valve function had been performed simultaneously, a potentially dangerous situation could have been avoided.

This problem has been mentioned in the literature at least twice during the previous four years.[1,2] In none of

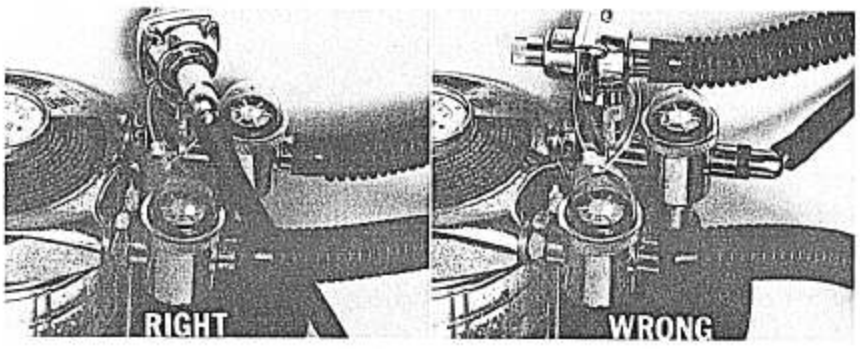

FIG. 1. Malassembly (*right*) and correct assembly (*left*) of the circle system.

these instances has patient injury occurred; however, the potential for injury is only too clear. This particular problem will continue to recur as long as the conditions that make it possible (the proximity of the ports, the identical diameter of the ports, and the nearly normal appearance of the misassembled circuit) exist. A change in diameter of the exhaust port on the relief valve would solve the problem, and such a modification is now appearing on a number of newly manufactured machines. For machines without this modification, we believe it would be prudent to take steps to eliminate the chance of this malassembly from occurring.

ELIZABETH S. MANN, M.D.
Assistant Professor

DAVID H. SPRAGUE, M.D.
Associate Professor

Department of Anesthesiology
University of North Carolina School of Medicine
Chapel Hill, North Carolina 27514

REFERENCES

1. Tavakoli M, Habeeb A: Two hazards of gas scavenging. Anesth Analg (Cleve) 57:286–287, 1978
2. Flowerdew RMM: A hazard of scavenger port design. Can Anaesth Soc J 28:481–483, 1981

(Accepted for publication December 11, 1981.)

Anesthesiology
56:414, 1982

IV *vs.* LTA Lidocaine: Does It Make Any Difference?

To the Editor:—The recent article by Hamill *et al.*[1] makes a seemingly invalid comparison between intravenous (iv) and laryngotracheal (LTA) administered lidocaine. A serious flaw in the protocol design relates to the fact that the LTA group was laryngoscoped twice while the iv group underwent a single laryngoscopy. The authors might have considered transtracheal administration of lidocaine as a means of avoiding a second laryngoscopy in the LTA group.

A further analysis of their data leads me to conclude that there may be very little, if any, difference between the two modes of administration. Utilizing data from figure 1 of their article, it appears that the rise in ICP following the initial laryngoscopy equalled 11 mmHg in the "untreated" LTA group (laryngoscopy only) *vs.* 8 mmHg in the group which had received lidocaine 1.5 mg/kg, iv (laryngoscopy-intubation). Furthermore, the ΔICP after laryngoscopy and intubation was 9 mmHg (from 17 to 26 mmHg) in the group pretreated with endotracheal lidocaine *vs.* 7 mmHg (from 9 to 16 mmHg) in the iv lidocaine group. The per cent increase in MAP was 36 per cent (−12 to 24) in the iv lidocaine group *vs.* "only" 48 per cent (−4 to 44) in the LTA group, even though the latter group was laryngoscoped twice! Finally, although the authors measured the intracranial compliances, the values were not reported. It would be interesting to know whether these patients were on the relatively flat *vs.* steep portions of the intracranial pressure-volume curve.

The authors noted no difference in peak ICP, MAP, and HR values after laryngoscopy and intubation between the LTA group and an historical control group[2] who received "a similar anesthetic technique except that no lidocaine was given." Intravenous lidocaine unquestionably lowers the baseline ICP[3]; however, I am not convinced, on the basis of this study, that intravenous lidocaine is superior to endotracheal lidocaine in blocking the increases in ICP and MAP associated with laryngoscopy and intubation. Although the study of Hamill *et al.*[1] does not permit a direct comparison (as there was no control group), one might question the efficacy of *both* LTA and iv lidocaine in blunting the hypertensive responses to laryngoscopy and intubation.

PAUL F. WHITE, PH.D., M.D.
Assistant Professor of Anesthesiology
Stanford University Medical Center
Stanford, California 94305

REFERENCES

1. Hamill JF, Bedford RF, Weaver DC, et al: Lidocaine before endotracheal intubation—intravenous or laryngotracheal? ANESTHESIOLOGY 55:578–581, 1981
2. Bedford RF, Winn HR, Tyson G, et al: Lidocaine prevents increased ICP after endotracheal intubation. Intracranial Pressure IV. Edited by Shulman K, Mamarou A, Miller JD, et al: Berlin, Springer, 1980, pp 595–598
3. Bedford RF, Persing JA, Pobereskin L, et al: Lidocaine or thiopental for rapid control of intracranial hypertension. Anesth Analg (Cleve) 59:435–437, 1980

(Accepted for publication December 11, 1981.)