

natrium, trimethaphan und halothan auf hirndurchblutung und intracranialen druck. *Anaesthesist* 28:494-496, 1979

5. Ishikawa T, Funatsu N, Okamoto K, Takeshita H, McDowall DG: Blood-brain barrier function following drug-induced hypotension in the dog. *ANESTHESIOLOGY* 59:526-531, 1983
6. Fahmy NR, Soter NA: Effects of trimethaphan on arterial blood histamine and systemic hemodynamics in humans. *ANESTHESIOLOGY* 62:562-566, 1985

7. Poulton TJ, James FM III, Lockridge O: Prolonged apnea following trimethaphan and succinylcholine. *ANESTHESIOLOGY* 50: 54-56, 1979
8. Sklar GS, Lanks KW: The effects of trimethaphan and sodium nitroprusside on hydrolysis of succinylcholine *in vitro*. *ANESTHESIOLOGY* 47:31-33, 1977

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Do Not Use the "Innovated" Cylinder Valve Handle for Cracking the Valve

To the Editor:—It is standard practice to clear particles of dust from a compressed gas cylinder just before fitting the cylinder to an anesthesia machine by slightly opening

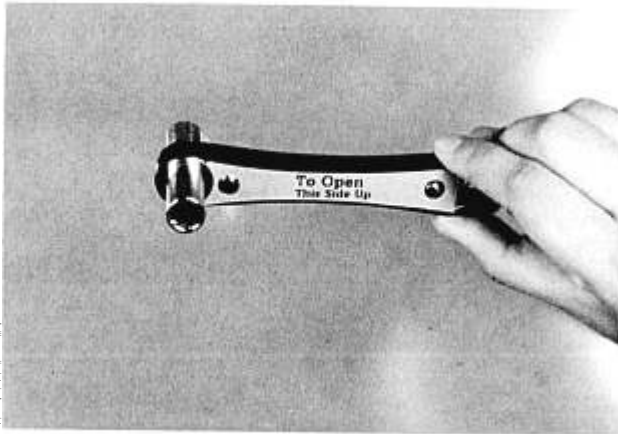


FIG. 1. The cylinder valve handle that turns only counterclockwise when applied for opening the valve (Ohmeda® cylinder wrench 0219-3415-800).



FIG. 2. A large blister in the palm due to an accidental exposure to freezing nitrous oxide gas.

and closing the valve ("cracking the valve"). This maneuver will prevent the dust from being blown into the anesthesia machine where it could clog filters or interfere with internal working.¹

With the use of a traditional cylinder valve handle, cracking the valve can be done easily. However, performing this maneuver on a nitrous oxide cylinder using the innovated (improved?) cylinder valve handle (Ohmeda® cylinder wrench 0219-3415-800, fig. 1) supplied with Ohmeda Modulus™ II anesthesia machine resulted in a complication to the anesthetist. This valve handle turns only counterclockwise when used for opening the valve, and once open, it is impossible to close the valve unless the handle is reapplied upside-down and turned clockwise.

When the anesthetist unfamiliar with this "tricky" handle tried to crack the valve of the nitrous oxide cylinder, he succeeded in opening the valve but he could not shut off the jet stream of nitrous oxide coming from the cylinder until he reversed the handle. In his panic, he had a direct blast of freezing nitrous oxide to his palm which resulted in frost-bite on the palm (fig. 2).

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REFERENCE

1. Dorsh JA, Dorsh SE: Understanding anesthesia equipment, Construction, Care and Complications. 2nd edition. Baltimore, London, Williams and Wilkins, 1984, p 13

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In reply:—The cylinder valve wrench supplied with the Ohmeda Modulus™ II Anesthesia machine is a ratchet type and is intended to permit easier and more rapid opening of a yoke-mounted cylinder. Although this wrench may be less convenient for “cracking the valve,” the speed and ease of use should be more advantageous than a traditional handle in the event of an emergency, such as the loss of a gas supply from the wall outlet.

The wrench is clearly labeled as to the appropriate side to use. One side states “To Open—This Side Up,” while the reverse side states “To Close—This Side Up.” The wrench is also addressed in the Modulus™ II Operation and Maintenance manual.

Although Ohmeda has had no previous reported incidents involving this wrench, a more conventional cylinder valve wrench has been considered. The major reason for this consideration is that Ohmeda would like to make available a more readily available and economical wrench.

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In conclusion, Ohmeda believes this wrench provides considerable advantages and that the labeling contains sufficient information to eliminate potential incidents such as those reported. As with most equipment, user review of the machine, labeling, and manuals may be required to become more familiar and comfortable with the Modulus™ II System and its accompanying components.

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

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Pancuronium and Myocardial Ischemia

To the Editor:—The recent article by Thomson and Putnins¹ clearly demonstrates the different hemodynamic effects of the drug regimens studied. Unfortunately, the authors appear to have omitted the presence of a positive stress test as a criterion for patient selection. Such an error would invalidate the authors' conclusions concerning the statistical significance of the different incidences of ischemia.

Statistical tests are valid only when the populations are similar with respect to the variable being measured. In this study, the occurrence of myocardial ischemia was identified by ST-segment depression in the CS₅ lead; however the authors do not indicate that all subjects possessed a positive stress test. In fact, 20–30% of patients with coronary artery disease may have negative stress tests,² and the results regarding ischemia might be substantially different depending on the distribution of the patients who lack CS₅ abnormalities in response to stress. If only three of the 21 patients in the metocurine and metocurine–pancuronium groups lack positive stress tests, the incidence of ischemia is no longer significant ($P = 0.054$ by Fisher's Exact test); however, other possible distributions retain the statistical significance of the findings. Thus, because the actual distribution of patients

having positive stress tests is not reported, it is presumptuous to report the presence of a statistically significant difference in the incidence of changes in the electrocardiogram. Information regarding the preoperative stress tests of the subjects would be welcome, since it might validate the conclusions presented. Considerable care must be used in the statistical analysis of clinical data, otherwise statistics, a field that is well known to produce headaches, may begin to produce myocardial ischemia as well.

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REFERENCES

1. Thomson IR, Putnins CL: Adverse effects of pancuronium during high-dose fentanyl anesthesia for coronary artery bypass grafting. *ANESTHESIOLOGY* 62:708–713, 1985
2. Parisi AF: The noninvasive evaluation of the coronary artery disease patient. *Circulation* 66:(Suppl 3)66–71, 1982

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