LETTERS TO THE EDITOR

THERMAL INJURY BY LIQUID NITROUS OXIDE

DEAR SIR,

The following account of a burn suffered by an anaesthetist demonstrates the potential for liquid nitrous oxide to produce thermal injuries.

An attempt to open an E-size nitrous oxide cylinder, attached appropriately to a standard anaesthetic gas machine, produced a loud metallic cracking noise followed by the emission of large volumes of nitrous oxide into the operating room. The route of escape from the cylinder appeared to be the valve stem, rather than the normal outlet from the cylinder. The valve assembly attached to the cylinder and the top two inches of the cylinder itself became heavily iced during the several minutes of high volume gas flow.

Several minutes later, when the gas flow from the cylinder appeared to have ceased and when the ice had melted, the cylinder was removed from the anaesthetic machine and carried to an adjacent equipment room. During this movement of the cylinder, gas flow resumed, prompting the anaesthetist to allow the remaining nitrous oxide to escape to the atmosphere through an open window in the equipment room.

As the cylinder was turned from the vertical to the horizontal position for placement in the open window, a small volume of liquid nitrous oxide escaped from around the valve stem and instantly froze the thenar web of the anaesthetist's left hand. The hand was rapidly immersed in warm water. Both the dorsal and palmar aspects of the hand developed second degree burns approximately 3 cm by 2 cm in size. There was a 0.5 cm diameter area of third degree burn. Treatment consisted of protective dressings. The small area of full thickness injury granulated and closed spontaneously in approximately four weeks. There were no permanent sequelae.

The supplier of the cylinder reported that examination showed the cylinder valve to be functioning normally, without evidence of gas leakage around the valve stem. This report was incompatible with the observations noted above. Unfortunately the supplier did not retain the valve for further examination.

The injury suffered was fortunately minor and without permanent sequelae. It should serve as

an illustration of the potential for serious injury and a reminder that medical gas cylinders, although normally silent allies, can become dangerous foes.

Douglas B. Craig, M.D.,
Professor,
Department of Anaesthesia,
University of Manitoba,
Winnipeg, Manitoba.

USE OF THE FIBEROPTIC LARYNGOSCOPE

SIR,

I read with interest the paper "An Introduction to the Fiberoptic Laryngoscope" by Witton in the September, 1981 issue of this journal. This instrument is without question underutilized. I am in general agreement with the sequence of events described for advancing the instrument through the vocal cords. Having some experience with it myself, I might be permitted to make two suggestions. First, an assistant's hands in the mouth attempting to retract an often elusive and slippery tongue get in the way of the operator. An airspace at the end of the laryngoscope is just as easily attained with the assistant facing the operator using both hands to elevate the angle of the jaw while simultaneously opening the mouth by downward pressure on the chin with both thumbs. In this manner, only the operator's hand is in the mouth. Second, intubation tends to be easier if the operator treats the main body of the instrument as though it were rigid rather than flexible. This tends to maintain correct alignment and orientation in space of operator, instrument and patient.

One further comment: The author states that "Any induction agent can be used as long as complete relaxation is accomplished." If this is meant in the context of developing facility with the instrument on patients who have no airway abnormalities, then there is no contention. However, if faced with a potential intubation problem, one should still follow the dictum of avoiding muscle relaxants until an airway is secure.

Jonathan D. Lamb, M.D., F.R.C.P.(C).
Assistant Professor of Anaesthesia,
University of Saskatchewan,
Saskatoon, Saskatchewan.