LETTERS TO THE EDITOR

DEAR SIR:

In his paper "Spontaneous Breathing with the Bain Circuit at Low Flowrates," (Canad. Anaesth. Soc. J., 23: 432, 1976), Dr. Mansell compares the effect of alternating Magill circuit and Bain circuit in the same patient. The findings in this single case prompt him to advise us that the Bain circuit should only be used with controlled ventilation. He also questions our findings that the flowrates recommended for controlled ventilation can maintain the arterial carbon dioxide tension (P_{aCO_2}) within a physiological range with spontaneous breathing.

In considering Dr. Mansell's four measurements, we believe the first value ($P_{aCO_2} = 51$ torr) to be due to respiratory depression; the respiratory minute volume (RMV) of 4.3 litres per minute was well below the fresh gas inflow of 5.6 l/min and consequently CO_2 elimination would unlikely be improved by a higher fresh gas inflow. After 30 minutes on a Magill circuit, the RMV was 4.6 l/min with a P_{aCO_2} of 44 torr; after one hour on the Bain circuit, the patient had the same P_{aCO_2} with an RMV of 5.9 l/min; this represents a 28 per cent increase in RMV. In our opinion a P_{aCO_2} of 44 torr is within the physiological range for a sleeping patient and an RMV of 5.9 l/min in a man weighing 80 kg cannot be considered as hyperventilation causing an unduly high respiratory workload.

It has been established that, with spontaneous breathing, the Magill system is more efficient in removing CO_2 than the Mapleson D system. With the Bain circuit, there is certainly rebreathing, but under anaesthetic conditions suitable for spontaneous breathing, patients with a normal respiratory system should be able to maintain a P_{aCO_2} within physiological limits without undue hyperventilation and Dr. Mansell's case has demonstrated this. Patients severely depressed by anaesthetics, partially paralyzed or with an abnormal respiratory system should have respiratory assistance regardless of the circuit used.

It is not possible to argue on the basis of a single case that the degree of rebreathing encountered in the Bain circuit with a fresh gas flow of 70 ml/kg/min is deleterious to a patient. Indeed, a moderate respiratory stimulation with CO_2 levels within a high normal range could be advantageous in a spontaneously breathing patient, improving pulmonary ventilation and preventing alveolar collapse; this view is supported in a paper by Dobkin, *et al.* in the same issue of the journal (Canad. Anaesth. Soc. J., 23: 408 (1976)). Dr. Mansell's paper may serve to stimulate a re-examination of our views on CO_2 levels in the anaesthetized patient breathing spontaneously.

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DEAR SIR:

MORE ON ANAESTHESIA ASSISTANTS

The question of anaesthetic technicians is one which has been much debated in this country for a considerable time. While there can be little argument that the addition of technicians to an anaesthetic department can greatly increase the productivity of anaesthetists, the degree of responsibility which might be assigned to such assistants, however, is at the core of the controversy. The scope of technicians could range from mere maintenance of machines and equipment, through minor clinical duties such as getting patients ready for induction of anaesthesia, including the establishment of intravenous drips, to the semi-independent administration of anaesthesia under the more or less direct supervision of an anaesthetist. This latter, of course, is the case in the United States where nurses have played a major role in the provision of anaesthesia services since the earliest days.

In deciding what role the anaesthesia technician might play in Canada it may be well, therefore, to look at the experiences with nurse anaesthesia in the United States. In the majority if not in all States, nurses are permitted by law to administer anaesthesia and where no anaesthesiologist is available they are considered legally to act under the direction of the operating surgeon. Since surgeons as a rule are not well instructed in the theory and practice of anaesthesia, the nurse for all intents and purposes is an independent practitioner.

But now the subject of nurse anaesthesia has been taken one step further. In a recent issue of the "American Association of Nurse Anaesthetists' Journal" a paper entitled "Anesthesia - A Nursing Process" has been published¹ in which the author attempts to prove that, since the nurse assesses the patient, plans the anaesthesia, implements that plan and evaluates its results, it follows that "anaesthesia is a nursing process, not the practice of medicine" (*verbatim quote*). Of course the argument is entirely fallacious in that assessment, planning, implementation and evaluation is not a nursing but a medical process as all diagnosis and treatment of disease must go through these four stages. The truth of the matter is, of course, that the nurse anaesthetist should never have been assigned tasks in the first place which are medical prerogatives, requiring as they do medical knowledge and judgment. If the arguments advanced in this paper were accepted, all diagnosis and treatment then would become nursing, not medical, processes. The nurse in other words would usurp the function of the physician. This, of course, is the direction towards which the philosophy of nursing has pointed over the last 20 years and one which the medical profession must view with apprehension.

It is, of course, not clear whether the view expressed in the article is only an isolated one or whether it might be the first salvo in a more co-ordinated attack upon physician anaesthesia in the U.S. Be this as it may, the fact that such opinions can find expression in a professional journal should give much food for thought to Canadian anaesthetists and to those responsible for charting the future role of assistants in medicine in this country.

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1. A.A.N.A.J. 44(4): 397-400 (Aug. 1976).

DEAR SIR:

Nasopharyngeal airways do not irritate the dorsum of the tongue or the palate and may be adjusted to fit the pharynx by sliding the tube in and out of the nose, rather than adjusting the pharynx to fit an oropharyngeal airway by pulling up the jaw. But even if the mucosa is shrunk by application of vasoconstrictor drops, nasal intubation can cause epistaxis. While rarely serious, such bleeding is often messy and potentially dangerous especially during recovery from general anaesthesia.

To reduce the incidence and severity of this complication the nasal cavity may be lined with rubber in the following manner. A digit is cut off a size 7 or 8 disposable rubber glove. The tip is excised and the tube slit up one side. The rubber is lubricated both inside and out, grasped from the inside by nasal packing forceps, and inserted along the floor of the nose as far as the nasopharynx. The forceps are then withdrawn. The still protruding portion of the rubber is secured by artery forceps while the nasotracheal tube is inserted between the layers of rubber until correctly positioned. The rubber lining is then withdrawn.

Nasal intubation, whether by nasopharyngeal or cuffed nasotracheal tubes, may be performed with a low incidence of trauma to the nasal mucosa by using this method.

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