clinicians may have been diverting patients perceived to be at greatest risk away from intubation techniques that involved anaesthesia and relaxation.

If the broad community adopts a pent-sux-tube approach for all comers rather than the current wide application of selective awake/nonparalyzed intubations, I fear that we will begin to encounter these high-risk lesions and that quadriplegics will ensue. I grant that the incidence of patients at high risk may be very low. However, one young quadriplegic is tragedy enough to justify careful, individual consideration of every patient in order to identify those who might be damaged as a result of the combination of reduced muscle tone and forced atlanto-occipital extension.

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REPLY

Thank you for the opportunity to respond to Dr. Drummond once again. Dr. Drummond raises some issues regarding airway management in spine-injured patients that have been the recent focus of heated exchanges in the critical care community.

It is clear that a high proportion of head-injured trauma patients will arrive in the emergency rooms hypoxic, acidotic and haemodynamically compromised. Urgent intubation, ventilatory support and haemodynamic resuscitation is mandated. During these interventions, the patients should be assumed to have a cervical spinal injury and be managed accordingly. The airway should be secured in a manner that couples a high rate of success with minimal spinal movement. This may be achieved by flexible fiberoptic laryngoscopy, rigid direct and indirect (Bullard) laryngoscopy, retrograde intubation, blind nasal intubation or via establishment of a surgical airway.

Hypoxia, acidosis and hypotension place the jeopardized cord at risk of secondary neurological injury. Untoward movements in a patient not recognized to have an injured spine also increase the risk of a secondary injury. All techniques of airway management result in some cervical spinal movement. The clinical experience of many centres, worldwide, utilizing a variety of

airway management techniques in traumatized patients, has shown that these movements do not lead to secondary neurological injury. This, provided that the patients are recognized to be at risk and treated appropriately. Therefore, I conclude that a well-performed tracheal intubation, irrespective of the technique employed, is a low-risk intervention even in a spine-injured patient.

There is no evidence that the cervical muscles act as a splint to prevent secondary neurological injury. The high incidence of secondary injury in hospitalized patients not initially recognized to have a spinal injury who are also not intubated, anaesthetized or operated upon, suggests that they do not. To conclude that there is benefit in routinely avoiding muscle relaxants in the airway management of traumatized patients in order to preserve the cervical muscle splint is without supportive data.

In response to Dr. Drummond's query about my management of the patient outlined, he presents a very superficial clinical review of the patient's condition. Given that he has made his decision based on such a review, I submit that the clinical data had little bearing on his choice of intubation techniques. In the non-urgent situation he describes, I would prefer to do a more thorough clinical assessment to determine the mechanism and nature of the injury as well as the degree of instability. Also I would prefer to review the other aspects of the patient's clinical condition. Finally, I think it prudent to discuss the situation with the consultant neurosurgeon, something Dr. Drummond apparently feels unwarranted. Then I would choose the appropriate intubation technique.

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Guidelines to the practice of obstetrical anaesthesia

To the Editor:

Recent changes to the Guidelines to the Practice of Anaesthesia, as recommended by the Canadian Anaesthetists' Society, have recognized a low incidence of major complications associated with continuous low-dose epidural infusion for obstetrical analgesia. They state that "it is not necessary for an anaesthetist to remain physically present or immediately available during maintenance of continuous infusion epidural analgesia provided there was an appropriate protocol and the anaesthetist could be contacted for advice."¹

While welcoming changes which will encourage anaesthetists practicing in smaller communities to provide analgesia for women in childbirth, I have a few concerns. The first is one which was addressed by Palahniuk in an editorial in this journal; notably that of maintaining competence in units which have a low delivery rate.² I would suggest that (for anaesthetists in centres with a low delivery rate), they be required to spend a period of time in a larger vol-

ume teaching unit, on a regular basis, in order to maintain their expertise and to learn new techniques.

The second concern relates to the management of potential complications when an anaesthetist may not be physically present. This concern also relates to higher volume units where the anaesthetist may be "tied up" in an operating room with a surgical case. In fact the guidelines actually contain the answer in that they state that "an appropriate protocol for the management of these epidurals is in place."¹

I would suggest that the setting up of these protocols is the most important aspect of this document. It is essential that the nurses caring for these parturients be educated in the recognition of complications and their initial management. This education, in the low-volume units, must not be a one-time event. It should be repeated and reemphasized at regular intervals. Additionally, other physicians who might be physically present in the hospital should be educated and trained in the management of these complications. This would include obstetricians, family and emergency physicians.

The other recommendation is that all hospitals practicing obstetrics should have a regular program of CPR training with emphasis on the parturient.³ The importance of uterine displacement in critical situations may not be recognized unless specifically included in the protocols. The normal response to finding a hypotensive, apnoeic patient is to place him/her supine in the Trendelenburg position. This could prove fatal in the parturient.

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Anaesthesia and myasthenia gravis

To the Editor:

I was disappointed that the comprehensive review article by Baraka¹ made little or no mention of the benefits of

combined regional/general anaesthesia in these patients. Although Dr. Baraka pointed out that the use of regional or local anaesthesia "seems warranted in these patients," he did not expand on this concept when discussing the management of retrosternal thymectomy.

A thoracic or high lumbar epidural anaesthetic in combination with balanced general anaesthesia provides excellent analgesia both intraoperatively and during the period following the thymectomy.² This decreases the stress response to the sternotomy, decreases opioid requirements and perhaps even the dose of neuromuscular blocking agents. This in turn allows these patients to meet extubation criteria earlier and in some individuals prevents the need for postoperative ventilation.

The current trend for anaesthetists to emphasize aggressive pain management,³ not only for aesthetic reasons, has seemed to miss a beat in this article. I hope this letter may perhaps remind readers of the obvious benefits of a combined regional/general anaesthetic technique, using an indwelling epidural catheter for retrosternal thymectomy.

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REPLY

Thank you for referring to me the letter of Dr. Gambling. I agree with him that thoracic or simply high lumbar epidural analgesia using local anaesthetic and/or narcotic, in combination with a balanced general anaesthesia, provides excellent analgesia both intraoperatively and postoperatively. The benefits of this combination are not limited to myasthenic patients undergoing thymectomy¹ but also apply to other patients undergoing any thoracic² or major abdominal and vascular surgery.³ However, the concept is still controversial.⁴ Many of our patients do not accept the idea of having a needle or a catheter in their "back" as a modality for pain relief. Also, because of the possible delayed respiratory depression, all patients having epidural morphine must be observed in an ICU setup for at least 12-24 hr post-operatively.

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