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REPLY

We thank Christian Putensen *et al.* for their comments. They point out that both TC-IRV (the mode we studied) and PC-IRV are time-cycled but differ in control of tidal volume. Perhaps our mode should be called TC-VC-IRV without "intrinsic" PEEP to be more specific.

Shortening expiratory time to the point where gas trapping and "intrinsic" PEEP occur will alter both resting lung volume and pulmonary perfusion. This is quite different from our model, in which we attempted to examine the effects of prolonged inspiration and an increase in mean airway pressure without PEEP.

We wonder whether PEEP, produced by shortening expiration, is not essentially the same as standard PEEP.

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Prevention of iv catheter damage

To the Editor:

Drs. Dull, Forbes and Tinker¹ reported that puncturing the skin with an 18-gauge needle prior to placement of the 22- and 24-gauge over-the-needle catheters was not efficacious in preventing catheter damage during insertion.

We recently published a study comparing intravenous cannulae available in New Zealand, involving 11 different brands:² 40 of each available brand of 16 and 22 intravenous cannula were evaluated. Following clinical use, the 22-gauge cannulae were carefully removed and were assessed microscopically for distortion. Of the six 22-gauge brands (Insyte®, Nipro®, Angiocath®, Surflo®, Venflon 2® and Jelco®) examined, catheter tip distortion varied from no distortion for the Insyte® to 53.8% distortion of all grades, for the Jelco® cannulae. The Jelco® cannula was found to have a higher incidence of catheter tip distortion of those brands examined ($P < 0.001$).

Dull *et al.* mentioned in their discussion several limitations of their study, including that only the Jelco® brand of cannula was examined. They discounted that there may be possible differences among different brands because "modern catheter/stylet units are very similar" and "this

possibility seems unlikely." We wish to disagree with this assumption. This is despite some differences in the two studies. First the number of cannulae examined in our study was less, 40 compared with 100 by Dull *et al.* Secondly, the incidence of Jelco® catheter tip distortion in our study was 53.8%, which was considerably higher than Dull *et al.*'s 8.0%. Although this discrepancy may be due to a difference in examination of catheter damage, we feel the methods are comparable. Our study demonstrated a difference in catheter tip distortion among the nine modern available 22-gauge intravenous cannulae available in New Zealand.

Nevertheless, Dull *et al.* chose the most appropriate brand of intravenous cannula, the Jelco® cannula, to assess for catheter damage, as it would have been the most likely catheter to show such damage based on our findings.

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Bilateral interpleural block

To the Editor:

We read with interest the report of Ben-David and Lee on the use of bilateral interpleural block for midline upper abdominal surgery.¹ Although there are several approaches to the management of these cases, we consider that a simpler technique would be equally effective and probably safer. We use a combination of light general anaesthesia with a continuous epidural block for such cases. A mixture of bupivacaine and fentanyl provides excellent analgesia, muscle relaxation and stress-free anaesthesia perioperatively and postoperatively with minimal side-effects.²

We consider that general anaesthesia and interpleural bilateral block is "too much" for one patient. Undoubtedly the quality of analgesia is not comparable to that obtained from an epidural block.³ The rate of complications with two interpleural blocks is greater than one epidural block. Needless to say the price of two interpleural catheters in

addition to the time factor is more than one epidural catheter.

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REPLY

Drs. Rozenberg, Isserlish and Birkhan have missed the point of our case report. It was not intended to convey the message that bilateral interpleural block (BIPB) combined with light general anaesthesia was our technique of choice for all patients undergoing midline upper abdominal surgery. Rather, it showed that BIPB combined with light general anaesthesia in our patient, provided good intraoperative and postoperative analgesia with minimal physiological disturbance.

No one doubts that continuous epidural analgesia with light general anaesthesia is an effective and well-established technique which will provide excellent analgesia and muscle relaxation. Both techniques have different physiological profiles, a factor which can be exploited to the patient's best interests. In situations in which a decrease in afterload is undesirable such as aortic stenosis or hypovolaemia, BIPB may represent a safer alternative than epidural analgesia. Furthermore, in the presence of generalised sepsis or coagulopathy, the potential complications of epidural abscess or haematoma, resulting from axial anaesthesia, do not apply if BIPB is employed. Also, other undesirable effects associated with the use of epidural narcotics and local anaesthetics are avoided. These include pruritus, urinary retention, nausea and vomiting, drowsiness, respiratory depression, total spinal, and permanent neurological damage.

There is no evidence to substantiate the statement that the combined epidural-general technique is "probably safer" or associated with fewer complications than BIPB. If they are referring to the problem of air in the pleural space, we feel that the incidence of clinically important pneumothorax can be reduced, if not altogether eliminated, by paying attention to a few points; employing a technique which utilizes saline to locate the interpleural space,^{1,2} avoiding nitrous oxide and inserting the catheter during spontaneous respiration. We are unsure what Drs. Rosenberg et al. mean by BIPB being "too much" for one patient. The block is technically easy to perform and interpleural catheters can be placed rapidly with minimal discomfort to the

patient. However, one needs to pay particular attention to the dosage of local anaesthetic with the bilateral technique to avoid toxic effects.

We feel it is important to maintain a broad view and an expanded armamentarium with judicious application of an appropriate technique in a given situation.

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Massive tongue swelling

To the Editor:

We would like to comment on the report by Grigsby *et al.*¹ describing a case of tongue swelling after uncomplicated general anaesthesia. The swelling was attributed to sensitivity to the glutaraldehyde used to clean their laryngoscope.

Swelling of the tongue alone need not implicate a "local reaction to an applied substance." As noted by the authors, a wheal-and-flare response to injected glutaraldehyde is not conclusive evidence of hypersensitivity as this chemical has direct irritant properties. Tongue swelling that "progressed to fill the entire oral cavity and force his mouth open" is the dramatic and classical picture of acute angioedema, as illustrated in the report of Self *et al.*² This entity is defined as well-demarcated cutaneous or mucosal swelling caused by oedema of the dermis and subcutaneous tissues.³

The patient described by the authors had a history of anaphylactic reaction to penicillin, and was taking captopril and cefotaxime. A 0.1% incidence of angioedema in patients using ACE inhibitors has been reported.^{4,5} The head and neck are primarily affected and fatalities have occurred due to airway obstruction. Swelling of the tongue and floor of the mouth without laryngeal involvement, as in this case, has been reported.^{4,5} Cefotaxime is chemically related to penicillin, one of the more common causes of angioedema,⁶ and is also a plausible aetiology in this case.

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