anesthesiologists when I mention latex anaphylaxis, the level of awareness of the problem within our profession is far from adequate, despite recent articles, letters, and editorials on the subject.[2-4] To improve this situation, I urge all anesthesiologists to reread thoughtfully the recent excellent review article on latex allergy.[5] I also encourage departments to discuss this problem at grand rounds or other departmental functions and to post the article in the anesthesia workroom or other central location. Furthermore, it is crucial to discuss the problem of latex allergy with the nursing staff, to raise their awareness, and to ensure that the necessary items for caring for patients with this allergy (most importantly, nonlatex gloves and foley catheters) are available. With the increase in latex exposure in the general population and especially in the medical population, we will be seeing more latex-allergic patients.[6] The burden is on all of us to understand latex allergy and manage it correctly.

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Catheter Location and Patient Position Affect Spread of Interpleural Regional Analgesia

To the Editor:—This is a report on the effect of catheter location and patient position on interpleural regional analgesia. Following institutional approval, informed consent was obtained from 17 patients with severe pain from multiple rib fractures. A radioopaque catheter was inserted toward the apex of the pleural space (apical catheter) in 12 patients, and in 5 patients toward the base (basal catheter) *via* a 16-G Tuohy needle inserted at the fourth intercostal space at the anterior axillary line. After catheter locations were confirmed by x-ray, 1% lidocaine 10 ml was injected through the apical or basal catheters with the patients supine, and the extent of hypesthesia assessed with an alcohol swab 15 min later. After 2 h, 10 of the patients with an apical catheter and who were able to sit upright received the same dose of lidocaine. They were kept sitting for 15 min while the extent of hypesthesia was assessed as above. In addition, $^{99m}TcO_4$–370 MBq in 10 ml physiologic saline was injected through the apical or basal catheter. After 5 min, radioisotope images by gamma camera were obtained.

The mean hypesthesia range after injection through the apically located catheter of supine patients was T2.5–T10.3 (n = 12), whereas it was T5.5–T10.2 (n = 10) when these patients were sitting. When the injection was made *via* the basally located catheter in supine patients, the range of hypesthesia was T5.8–T11.0 (n = 5). Although there were statistically significant differences in the cephalad extent of hypesthesia between injections *via* the apical catheter in patients supine or sitting, there were no significant differences observed with

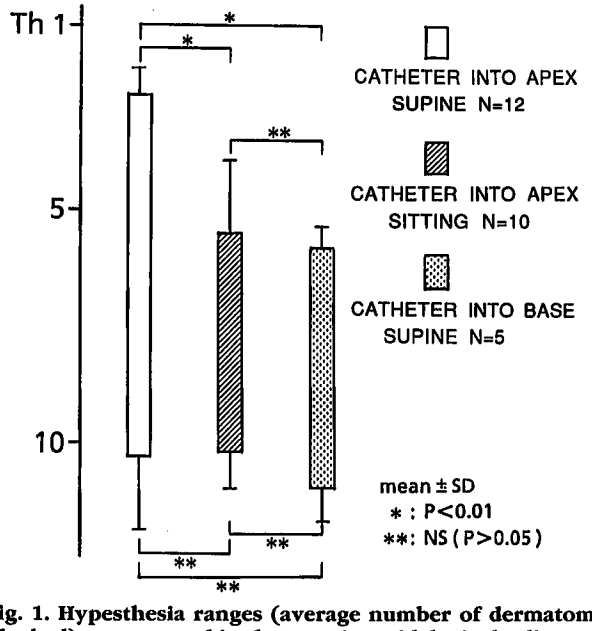

Fig. 1. Hypesthesia ranges (average number of dermatomes blocked) as measured in the anterior midclavicular line.

respect to the lower limit of hypesthesia (Wilcoxon test; fig. 1). According to the radioisotope images, radioisotope distributed to the whole of the pleural space through the apical catheter but did not distribute to the upper level of the pleural space through the basal catheter.

The current study suggests that the spread of intrapleural regional anesthesia is affected both by catheter location in the pleural space and by body position at the time of injection of local anesthetic. Catheters should be inserted toward the apex of the pleural space and local anesthetics should be administered with the patients supine to obtain the best pain relief in the chest.

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Endobronchial Intubation by a Nonbeveled Endotracheal Tube in Infants and Small Children

To the Editor:—Two major opinions exist regarding the primary factor that determines the side of endobronchial intubation, the anatomy of the carina and the tracheal bifurcation,[1,2] or the side of bevel of the endotracheal tube.[3,4]

Recently, it was suggested, based on a single case, that a laryngectomy tube with no lateral bevel has an equal chance of advancement to the right or the left main bronchus.[5] Furthermore, it was claimed that the bevel of the endotracheal tube, and not the tracheobronchial angle, is the important factor determining the side of inadvertent bronchial intubation. However, because I have failed to find prospective studies that investigated the side to which the tip of a nonbeveled endotracheal tube would pass, I have performed such a study.

After institutional and parental approval had been obtained, the investigation was carried out on 60 children, aged 1 month to 3 yr, undergoing inguinal herniorrhaphy during general anesthesia. The distal end of an ordinary Portex endotracheal tube was cut off 90° to the longitudinal axis. The edge was then polished and the tube resterilized. Anesthesia was induced with an inhalational agent; succinylcholine 2.0 $mg \cdot kg^{-1}$ was given; and the lungs were ventilated using 100% oxygen. While the child was supine with the head and neck in the midline, direct laryngoscopy was performed and orotracheal intubation using the nonbeveled tube was performed. The tracheal position of the tube was verified by chest auscultation. The tube was then blindly pushed down beyond the carina. After the bronchial location of the tip of the tube was verified by chest auscultation, the tube was withdrawn into the trachea. Attention was paid not to rotate the tube during the procedure. In 52 subjects, the tube entered the right main bronchus. In the remaining 8 subjects, the tube entered the left ($P < 0.001$, chi-square test).

These results suggest that when a nonbeveled endotracheal tube is used, right bronchial intubation is more likely than left. This finding is clinically relevant, because currently a nonbeveled endotracheal tube (Linder Nasotracheal Airway with AIRGUIDE inflatable introducer, Polamedco, Inc., Inglewood, CA) is commercially available.

In conclusion, when the side of the bevel of the endotracheal tube is not a factor, the anatomic feature of the tracheobronchial tree including the angle of the bifurcation determines the side of endobronchial intubation.

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