unnoticed because the LMA is used mostly for short cases with spontaneously breathing patients.

As implemented with the LT, the measurement, management, and monitoring of intracuff pressure have to become routine practice with any extraglottic airway device.

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References

- 1 Brimacombe J, Keller C, Roth W, Loeckinger A. Large cuff volumes impede posterior pharyngeal mucosal perfusion with the laryngeal tube airway. *Can J Anesth* 2002; 49: 1084–7.
- 2 Brimacombe J, Keller C, Puhringer F. Pharyngeal mucosal pressure and perfusion: a fiberoptic evaluation of the posterior pharynx in anesthetized adult patients with a modified cuffed oropharyngeal airway. *Anesthesiology* 1999; 6: 1661–5.
- 3 Laryngeal Tube Instruction Manual. VBM Medizintechnik GmbH, Sulz, Germany, 2001.
- 4 Keller C, Brimacombe J. Mucosal pressure and oropharyngeal leak pressure with the ProSeal versus laryngeal mask airway in anesthetized paralysed patients. *Br J Anaesth* 2000; 85: 262–6.
- 5 Brimacombe JR. Problems with the laryngeal mask airway: prevention and management. *Int Anesthesiol Clin* 1998; 36: 139–54.

REPLY:

We thank Drs. Matic and Arndt for their interest in our paper. We agree that intracuff pressure limitation is seldom performed, but should be a standard of practice with any cuffed extraglottic airway device to reduce mucosal pressure. The target intracuff pressure should be the minimum required to form an effective seal with the respiratory tract (all devices) and gastrointestinal tract (those devices with distal cuffs in the hypopharynx or esophagus). Determining the seal with the respiratory tract is easy since intracuff pressure can be titrated against ventilation; however, determining the seal with the gastrointestinal tract is difficult since air usually leaks out the mouth rather than into the esophagus.¹ We suggest that cuff volume is adjusted so that there is a slight oropharyngeal leak at the required ventilatory setting and then adding air until this leak just disappears. This intracuff pressure should be the target pressure for subsequent adjustments. It is important to appreciate that for most extraglottic devices, including the laryngeal tube airway, intracuff pressure is much higher than mucosal pressure due to the elastic properties of the cuff.²

An easy way to determine mucosal pressure is to subtract in vivo from in vitro intracuff pressure for a given cuff volume. Finally, another clinical test that is seldom performed, but should be a standard of practice, and which is perhaps more important than intracuff pressure limitation, is epigastric auscultation. Epigastric auscultation can detect gastric insufflation of 4 mL air after one breath with 95% confidence.³

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References

- 1 Brimacombe JR. Positive pressure ventilation with the size 5 laryngeal mask. *J Clin Anesth* 1997; 9: 113–7.
- 2 Brimacombe J, Keller C, Roth W, Loeckinger A. Large cuff volumes impede posterior pharyngeal mucosal perfusion with the laryngeal tube airway. *Can J Anesth* 2002; 49: 1084–7.
- 3 Brimacombe J, Keller C, Kurian S, Myles J. Reliability of epigastric auscultation to detect gastric insufflation. *Br J Anaesth* 2002; 88: 127–9.

An unusual cause of difficulty confirming correct placement of an endotracheal tube

To the Editor:

An otherwise healthy 46-yr-old man underwent circumferential cervical spine decompression and instrumented fusion. Due to the patient's neurologic symptoms, the surgeon requested that the intubation be done awake. After topicalization of the airway and insertion of the endotracheal tube, a regular end-tidal carbon dioxide waveform and misting of the tube were both observed to be present. In addition, the patient could no longer speak. After *iv* induction, the patient's breathing was assisted with manual ventilation, and the chest was seen to rise with each breath. When auscultation of the chest was performed to confirm that breath sounds were equal and bilateral, no breath sounds were heard. The end of the stethoscope was examined, and the diaphragm was tapped with a fingertip, which was easily heard. Repeat auscultation of the chest resulted in no breath sounds being detected. The end of the stethoscope was rotated, and the bell was tapped with a fingertip, which again was easily heard. When the chest was auscultated with the bell, still no breath sounds were detected. At this

FIGURE 1 Hairline fracture of tubing marked with arrows.

point, a problem with the stethoscope was suspected, and auscultation with a different stethoscope confirmed that air entry was equal bilaterally. The case proceeded uneventfully.

Upon initial inspection, the stethoscope in question (Littman, Cardiology II S.E., age approximately eight years) appeared to be intact and undamaged. Upon extension of the plastic tubing and closer inspection, the tubing was seen to be cracked, and nearly transected midway along its length. With the tubing flexed/curled, the edges of the crack remained approximated and the stethoscope appeared to function normally (Figure 1). When the tubing was straightened or extended, the edges of the crack separated, and nothing could be heard (Figure 2). The

FIGURE 2 Tubing separation with auscultation.

stethoscope had been functioning normally the previous day, and no snapping or cracking sound indicating damage was heard. We are not aware of any previous report of the sudden cracking of a stethoscope's tubing, and this was confirmed with a Medline search. Just as the anesthetic machine is checked on a daily basis, our other equipment must also be examined regularly in order to detect damage or malfunction, which can occur at any time.

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Propofol decreases cerebral blood flow velocity in anesthetized children

To the Editor:

In the October issue of the Journal, Karlsi *et al.*,¹ published the results of a study examining differences in middle cerebral artery flow velocity (CBFV) in chil-