sory level of L_1 had been achieved. The surgery proceeded uneventfully.

We cannot help but wonder if this phenomenon explains some of the occasional failed spinals, especially where free flow of CSF has been noted. While we do not customarily examine the integrity of our spinal needles before use, this experience suggests that perhaps we should reconsider this practice.

Bruce Ben-David MD
Hilton Levin MBBCh
Danielle Yarhi MD
Department of Anesthesia
Herzlia-Haifa Medical Center
15 Horev Street
Haifa, Israel

there is no leak. Following neck flexion, tidal volume increased by 100 ml.

We suggest that after placement of the LMA with the neck extended, flexion of neck is needed to improve adherence of the mask and epiglottic rim. Flexion of the neck reduces gas leaks in adults as well as in children. During PPV with the LMA we recommend continuous graphic display of the airway pressure as a monitor. The airway pressure waveform initially helps to diagnose gas leaks and later is a guide for optimal placement of the LMA.

S.A. Isserles MD
B. Rozenberg MD
Department of Anesthesia
Rambam Medical Center
Haifa, Israel

LMA - reduction of gas leak

To the Editor:

Small gas leaks are common during positive-pressure ventilation (PPV) with the Laryngeal Mask Airway (LMA).¹ A good seal between LMA and epiglottis prevents leaks, maintains tidal volume and reduces pollution. If the seal is not tight after inflation of the mask to the recommended volume, we propose flexing the patient's neck 10–20° with the LMA *in situ*. Flexion of the neck reduces gas leak during PPV, and tidal volume increases.

The Figure depicts airway pressure during two cycles of PPV using LMA. During the first, the inspiratory plateau pressure decreased 5–6 cm H₂O (0.5–0.6 Kpa), indicating a gas leak. The patient's neck was slowly flexed by 10°, and in the second cycle the inspiratory plateau trace became almost isobaric, indicating leak reduction. An isobaric inspiratory plateau trace during PPV implies

REFERENCE

- 1 Pennant JH, White PF. The laryngeal mask airway. Its uses in anesthesiology. *Anesthesiology* 1993 79: 144–65.

FIGURE Airway pressure during PPV using the LMA with (C-D) and without (A-B) neck flexion.