range is < 2.5%,[4] since, according to an *in vivo* fibreoptic bronchoscopic study,[2] the probability of occurrence of a less-than-35-mm left main bronchus is > 2 SD from the mean.[4]

It should be remembered that the new technique1 frequently works at the expense of the margin of safety, and that, though proximal displacements predominate, distal malpositions also occur during the positional change to the lateral decubitus.[5] We suggest that fibreoptic bronchoscopy should be performed through both the tracheal and bronchial lumen of a DLT to check the position, and repeated after lateral positioning.

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REPLY:

We thank Bahk et al. for their interest in and comments on our article.[1] Our results demonstrated that when using our new landmarks, the final position of left modified double-lumen tube (LM-DLT) seems better than with the classic positioning. We observed less need to reposition the LM-DLT proximally after turning the patient to the lateral decubitus. This technique is a reproducible and easy method to obtain these results.

Despite the fact that the vision is not always direct, we try to obtain the most perfect line of vision by curving the fibreoptic bronchoscope (FOB) as far as we can to visualize the carina to assess the position of the LM-DLT following our landmarks. We would like to mention that Figure 3B of our publication is a schematic drawing and that the tip of the FOB should be deeper and curved in the LM-DLT to see the landmarks easily.

Our study found that the incidence of distal displacements and repositioning with our new technique is comparable to the classic technique. The new technique worked effectively at the expense of MoS (Table) but by only 2 mm. It seems quite acceptable to prevent difficult proximal repositioning of the LM-DLT after the patient has been turned laterally.

We agree with Bahk et al. that it is important to perform both tracheal and bronchial lumen FOB after the initial insertion and, mainly, through the bronchial lumen after lateral positioning, as was demonstrated in our study.

TABLE Margin of safety of L-DLT

Tube	*Position*	*MoS (man) mm*	*Difference in mm*
Conventional	classic	22	0
Modified	classic	25	+3
Modified	new	20	-2

Classic position is when the endobronchial is cuff just below the carina. New position is when the carina is midway between the endobronchial cuff and the black line.
Last colum: the difference in mm between margin of safety relative to the conventional DLT in the classic position.
L-DLT = left double-lumen tube

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Reference

1 *Fortier G, Côté D, Bergeron C, Bussières JS.* New landmarks improve the positioning of the left Broncho-Cath™ double-lumen tube-comparaison with the classic technique. Can J Anesth 2001; 48: 790–4.

Diagnosing endotracheal tube partial withdrawal vs cuff puncture

To the Editor:
Partial withdrawal of the endotracheal tube (ET) and cuff puncture are not rare occurrences.[1,2] This *in vitro* study was performed to differentiate these two condi-

TABLE Volume of air/normal saline (NS) injected and aspirated from the pilot balloon.

Group	*Volume injected in mL (mean ± SD)*	*Volume aspirated in mL (mean ± SD)*
1-Air in protruding ET cuff	10 ± 0	10.2 ± 0.6
2-Air in punctured ET cuff	10 ± 0	13.7 ± 2.0*
3-NS in protruding ET cuff	10 ± 0	9.8 ± 0.2
4-NS in punctured ET cuff	10 ± 0	3.5 ± 0.9*

*Significant difference from the volume injected $P < 0.05$.

tions. Forty intubations were performed in mannequins with 8 mm high-volume low-pressure cuffed ET, divided into four groups of ten. The ET cuffs were inflated with 10 mL of air in Groups I and II; and with 10 mL of normal saline (NS) in Groups III and IV. In Groups I and III, ET cuffs were intact and allowed to protrude partly above the vocal cords. In Groups II and IV, ET cuffs were punctured with a 22 gauge needle and placed properly in the trachea.

The feel of the pilot balloon was graded by an anesthesia technician blinded to group allocation and found to be similar in all groups. Air or NS was then aspirated from the ET cuffs. The volumes injected and the volumes retrieved were compared by Student's t test (Table).

In intact ET cuffs protruding partially above the vocal cords, there was no significant difference between the volume of air injected and the volume of air aspirated from the cuffs (Group I). There was a significant increase in the volume of air aspirated compared to the volume injected in punctured ET cuffs placed properly inside the trachea (Group II).

In intact ET cuffs protruding partially above the vocal cords, there was no significant difference between the volume of NS injected and the volume of NS aspirated (Group III). There was a significant decrease in the volume of NS aspirated compared to the volume injected in punctured ET cuffs placed properly inside the trachea (Group IV).

Therefore, we suggest that the volume of aspirate from the ET cuff provides important clues regarding ET displacement or cuff injury. When the volume of aspirate is similar to the one injected, this indicates that there is no injury to the ET cuff and partial dislodgement is a likely explanation. When the volume of aspirate differs from what was injected into the ET cuff, injury to the ET cuff is probable. Further, when NS is used, volume is lost through the injured ET cuff, hence the volume of aspirate is less then what was injected. However, when air is used to inflate the ET cuff, gas may be aspirated from the injured cuff, increasing the volume retrieved. We recommend that this test be performed to differentiate tube misplacement from ET cuff injury in the presence of an air leak in the intubated patient.

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Gum elastic bougie-guided placement of the ProSeal™ laryngeal mask

To the Editor:

We report the use of a gum elastic bougie (GEB) to facilitate placement of the ProSeal™ laryngeal mask airway (PLMA).

After inducing anesthesia in a 45-yr-old male for elective orthopedic surgery, a size 5 PLMA was inserted using the digital technique with a midline approach; however, insertion failed because the tip collided with the glottic inlet, as evidenced by complete airway obstruction, air leakage up the drainage tube and excess protrusion of the bite block from the mouth. A second attempt using the digital technique with a lateral approach also resulted in glottic impaction. For the third attempt, a 16 FG well-lubricated GEB (Eschmann tracheal tube introducer, SIMS Portex Limited, UK) was threaded down the drainage tube with the curved end proximally (Figure). Under laryngoscope-guidance, the distal end the GEB was

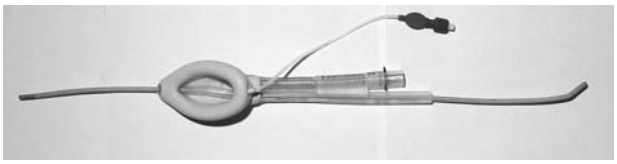

FIGURE Proseal™ laryngeal mask airway with gum elastic bougie protruding from both ends of the drainage tube.