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Concerns about the Purported Safety of Elective Flexible Bronchoscopic-assisted Intubation

To the Editor:—Heidegger *et al.*[1] are to be congratulated for a well-performed study that validates the relative safety of their practice. The conclusions from their study, however, can be applied only narrowly. First, as they admit, it was conducted by individuals with extensive previous experience with the technique. Indeed, each had performed more than 200 previous bronchoscopic intubations. Therefore, the study addresses the safety of bronchoscopic-assisted intubation for those needing to maintain, rather than acquire, this skill. It does not serve to document the equivalent safety of this technique with direct laryngoscopy for those with limited previous experience. Second, the study was performed on the very population not requiring flexible bronchoscopic intubation—namely, those with normal airways. The study falls short of documenting the absence of vocal cord sequelae when performed in patients who may *require* this approach. Third, the authors have compared the vocal cord sequelae resulting from a nasally inserted 6-mm tube with an orally inserted 7- or 8-mm tube. Nasal tubes assume a more vertical passage through the larynx and exert less force on the posteromedial glottis.[2] Likewise, smaller tubes probably exert less force on the vocal folds and arytenoid cartilages.[3] Finally, their technique involved the induction of anesthesia absent neuromuscular blockers. The national guidelines referred to,[4,5] insofar as they address the anticipated difficult airway, recommend the preservation of spontaneous ventilation. This demands much less medication than Heidegger *et al.* administered and results in a higher probability of coughing and difficulty in advancing the tube. These may increase the probability of vocal cord sequelae.

Skill at intubating with a flexible bronchoscope is essential to the safe practice of anesthesia. It is important that this skill be acquired and maintained in a manner that simultaneously meets our professional needs and protects our patients from harm. Heidegger *et al.* have demonstrated that their methods achieve those ends for experienced clinicians on patients with normal airways, but their findings cannot be extrapolated to dissimilar practices.

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Regarding Fiberoptic Intubation and Laryngeal Morbidity

To the Editor:—I read with interest the article "Fiberoptic Intubation and Laryngeal Morbidity" by Heidegger *et al.*[1] The authors' purpose was to demonstrate that the frequency of vocal cord sequelae (VCS) after fiberoptic tracheal intubation without neuromuscular blockade (NMB) was less than 25% when compared to VCS with NMB. I believe their study fell short of the model for evidence-based medicine.

The study group and the control group were managed so differently that comparison of the frequency of VCS in either group cannot be reasonably compared. Along with objective assessment of the patients, the patients were asked to subjectively assess hoarseness and discomfort with introduction of potential bias. Using subjective assessment tools dependent on the patient's own feelings, one must consider and attempt to eliminate distracting factors that could significantly impact the objectivity of the assessment.

To truly control for fiberoptic technique and NMB, the two groups could have easily been standardized by the following:

1. Using transtracheal local anesthetics in both the study and control patients.
2. Using identical induction agents. Anesthetic induction in the two groups was achieved with different agents, the study group receiving etomidate and the control group receiving propofol. Side effect profiles of these two agents clearly differ and could result in distraction of symptoms, especially in the study group.
3. Selection of identical endotracheal tubes (ETTs). The authors used a smaller ETT for the study group (6.0 mm ID) and a larger ETT for the control group (7.0 mm ID for females and 8.0 mm ID for males). The control group received a polyvinyl chloride ETT, and the study group received a silicone ETT. Using an identical tube such as a 6.0-mm-ID silicone tube in both groups would seem like a logical choice. In addition, both the study and control groups could have been intubated nasally to establish a more reliable control.

Another concern is the selection of patients undergoing surgery to eye, ear, and salivary glands, which could affect subjective discomfort associated with VCS.

Finally, the assessment of the vocal cords was performed by an ear, nose, and throat surgeon blinded to patient group assignment. It is difficult to believe that an experienced ear, nose, and throat surgeon could not recognize that a patient underwent recent nasal intubation. Even with the best of conditions, minor traumatic injury is often noted along the path of a nasotracheal intubation.

The authors did design the study to compare with the trial of Mencke *et al.*,[2] which used a silicone ETT for fiberoptic cases and polyvinyl