

7. Russell T, Lee C, Firat M, Cooper RM: A comparison of the forces applied to a manikin during laryngoscopy with the GlideScope and Macintosh laryngoscopes. *Anaesth Intensive Care* 2011; 39:1098–102
8. Carassiti M, Zanzonico R, Cecchini S, Silvestri S, Cataldo R, Agrò FE: Force and pressure distribution using Macintosh and GlideScope laryngoscopes in normal and difficult airways: A manikin study. *Br J Anaesth* 2012; 108:146–51
9. Thong SY, Shridhar IU, Beevee S: Evaluation of the airway in awake subjects with the McGrath videolaryngoscope. *Anaesth Intensive Care* 2009; 37:497–8
10. Doyle DJ: Awake intubation using the GlideScope video laryngoscope: Initial experience in four cases. *Can J Anaesth* 2004; 51:520–1

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#### *In Reply:*

We appreciate the comments of Drs. Levin and Leibowitz regarding our editorial,<sup>1</sup> in which we stated that the article by Rosenstock *et al.* established video laryngoscopy as a useful alternative to fiberoptic intubation in the study population. Their study provides evidence for the utility of video laryngoscopy in difficult airway management. This does not in any way take away from the utility and necessity of acquiring and maintaining skill with flexible bronchoscopy, which remains our definitive standard for difficult airway management. The Fourth National Audit Project of the Royal College of Anaesthetists and Difficult Airway Society (NAP4) was designed to identify and study serious airway complications occurring during anesthesia, in the intensive care unit and the emergency department.<sup>2</sup> This study found that the lack of education and training of care providers was a significant cause of adverse outcomes. We encourage the acquisition of skill with a variety of airway management techniques. Although the flexible bronchoscope is the most versatile device available to us, it does not represent a panacea for difficult airway management, it is not readily available around the world, and the acquisition (and maintenance) costs make it unattainable in many centers. We believe that our opinion is supported by the published literature, that in select patients with difficult airways, video laryngoscopy may be as effective as flexible bronchoscopy. However, the judgment of the clinician is critical to avoid the inappropriate use of a video laryngoscopy when flexible bronchoscopy is the better choice. We disagree with the statement that any device (including traditional Macintosh and Miller laryngoscopes) would be equally successful if patients with limited mouth opening (<15 mm) and neck pathology prohibiting recurrent laryngeal nerve block placement were eliminated. There are many other known predictors of difficult intubation, and 15 mm of mouth opening may be insufficient for intubation with a standard laryngoscope that relies on direct line-of-site visualization. Furthermore, video laryngoscopy has been associated with higher tracheal intubation success rates than standard direct laryngoscopy in patients with predicted difficult airways.<sup>3</sup>

In summary, we encourage education and training with a variety of airway devices, including the flexible bronchoscope, and we look forward to the day when skills assessment is incorporated into all training programs to establish a minimum standard of skill for all clinicians who manage the airway.

We appreciate the insight of Dr. Metz regarding education in flexible bronchoscopy and video laryngoscopy. We agree that all anesthesiology residency programs should encourage mastery of both techniques. However, we suspect that video laryngoscopy will be easier to learn because it may be kinesthetically less demanding than flexible bronchoscopy. It has been demonstrated that novices can become proficient with tracheal intubation using a video laryngoscope with as little as two attempts.<sup>4</sup>

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#### References

1. Fiadjoe JE, Litman RS: Difficult tracheal intubation: Looking to the past to determine the future. *ANESTHESIOLOGY* 2012; 116:1181–2
2. Cook TM, Woodall N, Frerk C; Fourth National Audit Project: Major complications of airway management in the UK: Results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. Part 1: Anaesthesia. *Br J Anaesth* 2011; 106:617–31
3. Aziz MF, Dillman D, Fu R, Brambrink AM: Comparative effectiveness of the C-MAC video laryngoscope versus direct laryngoscopy in the setting of the predicted difficult airway. *ANESTHESIOLOGY* 2012; 116:629–36
4. Savoldelli GL, Schiffer E, Abegg C, Baeriswyl V, Clergue F, Waerber JL: Learning curves of the Glidescope, the McGrath and the Airtraq laryngoscopes: A manikin study. *Eur J Anaesthesiol* 2009; 26:554–8

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#### *In Reply:*

We thank Drs. Todd and Bayman, Levine and Leibowitz, and Xue, Cheng, and Li for their interest in our article “Awake fiberoptic or awake video laryngoscopic tracheal intubation in patients with anticipated difficult airway management.”<sup>1</sup> We value their questions and considerations.

Drs. Todd and Bayman raise an important issue concerning postrandomization exclusion and missing intention-to-treat analysis. We agree that postrandomization exclusion is a limitation of our study and an intention-to-treat analysis is preferable. We have now performed intention-to-treat analyses for both tracheal intubation time and the success rate for first attempt of intubation. In six of the seven cases with impossible transtracheal injection, patients' airways were topically anesthetized and the data are available, and for patients without this information, we did the calculation