



FIGURE Transverse sonogram, at the level of the C-7 vertebra, showing the needle location between the sternocleidomastoid and the scalenus anterior muscles. SCM = sternocleidomastoid muscle; SMM = scalenus medius muscle; SAM = scalenus anterior muscle; N = brachial plexus; ↑ = needle.

injected 3 mL of 1% lidocaine through the needle; and the resulting ultrasound image showed that the injection had expanded the space. Furthermore, within one minute, the diaphragmatic contractions were successfully suppressed.

In many instances, ultrasound may not allow localization of relatively small nerves, such as the phrenic nerve. However, ultrasound is often adequate to delineate relevant, surrounding anatomical structures (such as the surrounding muscles in this case) which have known anatomical relationships to the nerve, thus providing surrogate marking to the nerve. Under combined ultrasound and nerve stimulation guidance, the needle position can be approximated within the vicinity of the nerve, as determined by viewing the related anatomical structures, and by using the appropriate motor response to stimulation in order to confirm the nerve localization. In this manner, the combined use of ultrasound and nerve stimulation may be used to facilitate phrenic nerve block.

Yasuhisa Okuda MD  
 Keiichiro Kamishima MD  
 Takero Arai MD  
 Takashi Asai MD PhD  
 Dokkyo Medical University, Koshigaya Hospital,  
 Koshigaya City, Saitama, Japan  
 E-mail: y-okuda@dokkyomed.ac.jp  
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## References

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- 2 Marhofer P, Greher M, Kapral S. Ultrasound guidance in regional anaesthesia. *Br J Anaesth* 2005; 94: 7–17.

## *The GlideScope®-specific rigid stylet to facilitate tracheal intubation with the Glidescope®*

To the Editor:

I read with interest the report entitled “The GlideScope®-specific rigid stylet and the standard malleable stylet (MS) are equally effective for GlideScope® use”.<sup>1</sup> This study showed that, within a group of experienced operators using the Glidescope®, the dedicated Glidescope® rigid stylet (GRS) and the standard endotracheal tube (ETT) MS are equally effective in facilitating endotracheal intubation. In this study, the staff and house staff were able to participate, only if they had successfully completed a minimum of 15 tracheal intubations using the GlideScope® videolaryngoscope (GVL). While the authors demonstrated proficient use of the GlideScope® with both stylets, they also indicated that the anesthesiologists were dissatisfied with the GRS more frequently than they were when using the MS. Furthermore, in one case, the patient’s trachea was successfully intubated utilizing the MS, after an unsuccessful attempt using the GRS.

Having used the GVL on numerous occasions, my impression is that tracheal intubation is easier using the GRS as compared with using the MS. This is also the prevailing opinion of other attending anesthesiologists in our department, who have considerable experience using the GVL. The report<sup>1</sup> does not fully detail the technique of airway management using the GRS. It has been my observation that passage of the endotracheal tube is facilitated by grasping the endotracheal tube, with the second through fourth fingers near the proximal end of the tube, and with the tip of the thumb located firmly on the black flange of the stylet (Figure). As the distal end of the tube passes through the vocal cords, the tube is rotated towards the right, to reduce the anterior angulation of the ETT, and to facilitate alignment of the tube with the axis of the trachea. As the tube is rotated, the thumb pushes up on the black flange, which helps to advance the ETT through the vocal cords into the trachea. Using this technique, I have not had any instances where the ETT could not be advanced into the trachea once the vocal cords were visualized. Finally,



FIGURE With the Glidescope® rigid stylet (GRS) *in situ*, the endotracheal tube is grasped with the second through fourth fingers, and the thumb is in position to push the GRS outward, as the endotracheal tube passes through the vocal cords.

while rapid sequence intubations were excluded in the study, in our practice, the GVL is frequently used for rapid sequence intubations, including those on the morbidly obese.

Steven M. Neustein MD  
Mount Sinai Medical Center, New York, USA  
E-mail: steve.neustein@msnyuhealth.org  
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#### Reference

- 1 Turkstra TP, Harle CC, Armstrong KP, et al. The GlideScope®-specific rigid stylet and standard malleable stylet are equally effective for GlideScope® use. *Can J Anesth* 2007; 54: 891–6.

#### Reply:

We thank Dr. Neustein for his interest in our research comparing the GlideScope® rigid stylet (GRS) with a standard malleable stylet during use of a GlideScope videolaryngoscope to facilitate tracheal intubation.<sup>1</sup> The trial showed no significant difference between the two stylets, in terms of time-to-intubation and ease of use; and it displayed a potential trend favouring the standard stylet when used by a population of experienced anesthesia care providers.

Dr. Neustein's letter expresses a personal opinion, contrary to the results of a randomized, controlled trial. Statistically, it is not unexpected that two inter-

ventions, that are equal on average, would have a sample of users who prefer one to the other. It is possible that in Dr. Neustein's hands, the GRS is superior to the malleable stylet. Our study has attempted to answer this type of issue: Is one device superior to another when applied to a general audience? Airway management is perhaps the very arena in which to conduct further, randomized, controlled trials. There are a myriad of devices available, all having their proponents. This study's value is in its attempt to make a systematic comparison of the usefulness of these devices to the general anesthesiologist. Future investigation might aim to elucidate characteristics or environments that lead to one device being more suitable than another. As the author has pointed out, technique is important when using any device. Though not presented in the original article, participants in the trial were permitted either to use the GRS as demonstrated by the manufacturer and as described by Dr. Neustein, or to hold the stylet loosely and have an assistant remove the GRS. For the most part, staff members at our institution prefer the latter and, in our opinion, the gentler technique. Usually the limitation with the GRS was difficulty in advancing the stylet through the vocal cords; occasionally, removing the stylet was also complicated.

We frequently use the GlideScope® at our institution for rapid sequence induction (RSI). However, RSIs were excluded from the study protocol because, at the time of the study design, we did not feel the use of the GRS was adequately supported in the literature to incorporate GRS use with RSI. Our opinion has not changed in the interim. If the author remains convinced of the superiority of the GRS, we would encourage him to verify his hypothesis through a randomized, controlled trial.

Timothy P. Turkstra MD M Eng FRCPC  
Christopher C. Harle MBChB FRCA  
Kevin P. Armstrong MD FRCPC  
Pádraig M. Armstrong MD FRCPC  
Philip M. Jones MD FRCPC  
London Health Sciences Centre, University of Western Ontario, London, Canada  
E-mail: timothy.turkstra@londonhospitals.ca

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- 1 Turkstra TP, Harle CC, Armstrong KP, et al. The GlideScope®-specific rigid stylet and standard malleable stylet are equally effective for GlideScope® use. *Can J Anesth* 2007; 54: 891–6.