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Considerations aimed at facilitating the use of the new GlideScope® videolaryngoscope

To the Editor:
The GlideScope® videolaryngoscope (Saturn Biomedical System Inc., Burnaby, BC, Canada) can exceed the utility of other instruments formerly considered indispensable in cases of foreseen difficult airway.[1,2] On the basis of our experience with this device, which includes 200 patients to date, we would like to offer a series of considerations:

1) Following difficulties to appropriately insert the laryngoscope blade when we began to use the device, we decided to modify the insertion technique in such a way as to use the instrument like a Guedel tube; that is, to insert the blade in the patient's mouth with the concave side looking up, before turning it 180° anticlockwise from the left to the right, to set it in place in the pharynx. This makes it possible to displace the tongue to the left and to minimize neck mobilization, while also allowing use of the device in cases of moderately limited mouth aperture.

2) "Steaming up" occurs to a greater or lesser degree. In our experience, optimal vision can be ensured with the GlideScope® by immersing the blade area containing the camera in lukewarm water for a few minutes before using the device.

3) We agree with Dr. Cooper[3] that the main problem of intubation with the GlideScope® has to do with passing the endotracheal tube (ETT) through a glottis that is in full view; this is because the lens invades the blade channel. We have managed to solve this problem by using a thick, firm, 5.6-mm stylet. We also angulate the tube a little more than 60°. The ETT should be inserted with the concave side up, and must be turned clockwise from right to left while it is slid behind the videolaryngoscope, in such a way that it fits in between the device and the pharynx. This positions the tip of the ETT under the tip of the blade, and aims it correctly in the direction of the glottal orifice. Intubation difficulties with this device sometimes occur because the tip of the ETT collides with the anterior comissure of the glottis, a problem that can be minimized by turning the tube while it is inserted. On two occasions we solved this problem using a Fastrack® laryngeal-mask tube (LMA North America Inc., San Diego, CA, USA), which has a blunter tip than a conventional ETT. In both cases, we were able to slide it through the glottis easily, without causing trauma.

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REPLY:

I am grateful for the opportunity of responding to the interesting letter from Drs. Cuchillo and Rodriguez.

Two recent publications are consistent with their comment that this device frequently provides comparable, but more frequently superior laryngeal exposure than direct laryngoscopy.[1,2] However, it may be difficult to introduce the laryngoscope blade into the mouths of patients with limited atlanto-occipital extension, reduced interincisor distance and/or a very protuberant chest. Their suggestion of introducing the laryngoscope upside down and rotating it as with a Guedel airway has not been previously described, and may prove helpful.

I am surprised by their comment concerning a foggy image. The transparent glass protecting the videochip is

heated to eliminate condensation. There should be no need to warm the instrument nor should anti-fogging solutions be required. In well over 500 GlideScope® laryngoscopies, I have never experienced any fogging. This leads me to question whether their device has been damaged.

I believe that the last point raised by Drs. Cuchillo and Rodriguez really has two components, namely difficulty in delivering the endotracheal tube (ETT) to the glottis though easily seen, and passage of the ETT into the trachea. Regarding the delivery problem, some frequent users have successfully adapted different stylet configurations. At present, we do not know whether our recommended 60° configuration,[2] Doyle's 90°,[3] or Arndt's U-shape[A] produces the best results. It has been my experience that insertion of both the GlideScope® videolaryngoscope and the styletted-ETT in the midline generally results in correct alignment. This may, however, result in a significant angle of incidence between the laryngeal axis and the ETT. Several strategies may prove helpful: i) relaxing the elevation of the laryngoscope; ii) slight withdrawal of the laryngoscope; iii) applying external laryngeal pressure to depress the laryngeal inlet; and iv) insertion of a cudé-tipped gum elastic bougie and subsequent railroading of the ETT, both performed under visual control. The second problem, namely difficulty advancing the ETT, may be corrected by the above techniques that diminish the angle of incidence or the rotation that Cuchillo and Rodriguez (and Cooper)[4] described. Alternatively, the styletted-ETT can be shaped as above, however in a direction opposite to the inherent memory of the ETT. Removal of the stylet will then result in the tube migrating upward, as if rotation had been performed.

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