

Comments on comparison of the combined Airtraq[®] laryngoscope and a fiberoptic bronchoscope with the Airtraq[®] alone for tracheal intubation

Fu Shan Xue · Jian Hua Liu ·
Yu Jing Yuan · Xu Liao

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To the Editor:

The recent article of Nishikawa et al. [1] comparing tracheal intubation by combined use of the Airtraq[®] laryngoscope (Airtraq) and a fiberoptic bronchoscope (FOB) with use of the Airtraq alone in a manikin study was of great interest to us. They found that in comparison with Airtraq alone, the combined use of the Airtraq and a FOB provided more rapid tracheal intubation in difficult airway scenarios. This finding suggests that a combination of the Airtraq and a FOB may be more effective for managing difficult airways compared with the use of the Airtraq alone. However, there are several aspects of this study that should be clarified.

First, the purpose of this study was to evaluate the efficacy of the combined use of the Airtraq and a FOB for tracheal intubation in simulated airway scenarios when the glottic view could not be optimized in the middle of the viewfinder of the Airtraq. However, in the results, the authors did not provide the glottic view obtained by the Airtraq in all airway scenarios. When the tracheal intubation was performed with the Airtraq alone in this study, we would like to know whether the glottis was positioned in the middle of the viewfinder of the Airtraq (i.e., grade 1 view of the Airtraq) with or without optimization maneuvers [2]. In this position, the endotracheal tube (ETT) will be advanced toward the glottis under a predetermined angle, defined by the configuration of the tube conduit and the ETT angulation [3, 4], whereas a partial or total glottic

view that is off center, i.e., grade 2 view of the Airtraq, is suboptimal for tracheal intubation with the Airtraq alone [2].

Second, in the results, the authors described that, to successfully intubate the trachea with the Airtraq alone, the requirement for optimization maneuvers increased with the level of difficulty of the tongue edema scenario. However, they did not state what optimization maneuvers were used. On the basis of our accumulated experience with the Airtraq, other than external laryngeal manipulation, adjusting the position of the entire device in the mouth and pharynx is often required to optimize the glottic position before attempting to intubate.

Third, three and two participants failed to intubate the trachea with the Airtraq alone in the tongue edema scenarios simulating grade 3 and 4, respectively. In the cervical immobilization scenarios, two and one participants failed with the Airtraq and the combined use, respectively. However, the authors did not provide the reasons for these failed intubations. When the tracheal intubation is performed with the Airtraq alone, our experience suggests that a posterior tube tip location is a most common cause of failed intubation, particularly in patients with tongue edema, micrognathia, short neck, or limited head and neck movement. To solve this issue, the operator can withdraw the Airtraq 1–2 cm away from the glottis and lift the device up [4]; this allows the tube tip to move upward toward the glottis with further advancement after its initial posterior movement [3]. If the larynx is simultaneously pushed down, the posterior tube tip location may often be corrected. Also, the Endoflex[®] ETT with a built-in flexing mechanism and a friction lock is a useful choice to overcome a posterior tube tip location [5].

Fourth, the combined use of the Airtraq and a FOB can enable rapid intubation in managing a difficult airway, but

F. S. Xue (✉) · J. H. Liu · Y. J. Yuan · X. Liao
Department of Anesthesiology, Plastic Surgery Hospital,
Chinese Academy of Medical Sciences and Peking Union
Medical College, 33 Ba-Da-Chu Road, Shi-Jing-Shan District,
Beijing 100144, People's Republic of China
e-mail: fruitxue@yahoo.com.cn



Fig. 1 Use of the combined Airtraq[®] laryngoscope and a gum elastic bougie to achieve successful intubation when only a suboptimal glottic view is obtained by the Airtraq[®] laryngoscope. Under direct vision of the Airtraq[®] laryngoscope, a gum elastic bougie is inserted into the trachea through the tube conduit and then the endotracheal tube is advanced over the gum elastic bougie

disadvantages of this technique are the requirement for two experienced anesthesiologists and the availability of the FOB. In our practice, a combination of the Airtraq and a FOB is only used when the operator cannot visualize the glottis with or without the epiglottis by the viewfinder, i.e., a grade 3 or grade 4 view of the Airtraq [5]. By using optimization maneuvers and adjusting the position of the device, if only a partial view is obtained using the Airtraq (i.e., grade 2 view of the Airtraq) or a total glottic view is off center of the viewfinder, we prefer to use a combination of the Airtraq and a gum elastic bougie to achieve

successful intubation. A gum elastic bougie is first inserted into the oropharynx through the tube conduit of the Airtraq. By adjusting the position of the gum elastic bougie tip, it is directed to the glottis and advanced into the trachea downward. Then, the ETT is advanced over the gum elastic bougie (Fig. 1). This method only requires an experienced anesthesiologist and an assistant. Also, the wind tube conduit of the Airtraq can provide a convenient means for inserting the gum elastic bougie into the trachea through the glottis. Although the FOB provides visualization, the gum elastic bougie is more readily available and may suffice in some cases of difficult intubation.

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