Assessing performance of McGrath MAC videolaryngoscope in morbidly obese and nonobese patients

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Keywords: Airway management; Tracheal intubation; Videolaryngoscope; morbidly obese

The word counts of this correspondence are 745. There are 7 references, no figure and table.


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To the Editor,

In the recent article by Arslan and Yörükoğlu [1] comparing performance of the McGrath MAC X-blade videolaryngoscope for tracheal intubation in morbidly obese and nonobese patients, they showed that this videolaryngoscope could safely be used both in nonobese and morbidly obese patients with the aid of some key maneuvers and with a statistically significant but clinically negligible prolongation of intubation time. Given the facts that difficult airway remains one of main reasons for adverse outcomes of surgical patients receiving general anesthesia and videolaryngoscope is one of the most promising first-line tools for difficult airway management [2], their findings have potentially clinical implications. To differentiate the effects of one factor on primary study endpoint in a randomized controlled trial, however, all of other factors have to be standardized for avoidance of potential biases. We note several issues in this study that would have made generalization and interpretation of their findings difficult.

First, a main purpose of this study was to compare performance of McGrath MAC videolaryngoscope in morbidly obese and nonobese patients. On the basis of body mass index (BMI), participants were arbitrarily divided into nonobese (BMI < 30) and morbidly obese (BMI > 35) groups. Indeed, BMI is the internationally accepted standard method for classification of obesity. According to the international criteria of BMI, however, patients are allocated to five different categories as normal, 18.5-24.9 kg/m²; overweight, 25.0-29.9 kg/m²; class 1-obesity, 30.0-34.9 kg/m²; class 2-obesity, 35.0-39.9 kg/m²; class 3-obesity, equal or greater 40 kg/m². Morbid obesity is considered to be class-2 or -3 obesity plus significant obesity-related co-morbidities [3]. In their study, the mean BMI of nonobese patients was 26.7 kg/m². That is, their nonobese group included normal patients and those with overweight and class 1-obesity. Thus, we argued that they used an inappropriate definition of nonobese patients. In method, moreover, they described that a sealed envelope technique was used for classification of participants. Evidently, this is not true, as their study is not a randomized clinical trial. Actually, in their study, patients were classed according to BMI and did not need a sealed envelope technique, which is often used for classification of participants in a randomized clinical trial.
Second, in this study, all patients were placed in the supine position for preoxygenation and intubation. It is not a routine clinical practice for morbidly obese patients. It is generally recommended that morbidly obese patients should be placed in a 30° head up position as this can improve preoxygenation and laryngoscopic view [4]. The improper use of a supine position for morbidly obese patients in this study may be one of main reasons for requirements of more reinsertion and cricoid pressure maneuvers during intubation, a longer intubation time and a higher rate of desaturation in this group. This design limitation would have made generalization of their findings difficult.

Third, we noted that all nonobese and morbidly obese patients were intubated successfully, but most of intubations were completed on the second attempt, with a requirement of some aiding maneuvers such as slight removal of the device, handling force, use of stylet, 90° anticlockwise rotation, and head flexion maneuvers. The McGrath MAC videolaryngoscope used in this study has a MacIntosh blade and the manufacturer recommend no need of a stylet for intubation. When performing intubation with videolaryngoscopy, however, it can be very helpful for bringing the tube tip up to the glottic opening. The available evidences that the routine use of a stylet can facilitate intubation with MacIntosh videolaryngoscope, especially for management of difficult airways [5,6]. Thus, we believe that the different results would have been obtained, if their study design included the routine use of styleted endotracheal tube.

Finally, in the postoperative care unit, postoperative sore throat was evaluated as minor complication of intubation. However, the authors did not clearly describe whether duration of anesthesia time and intraoperative dosages of opioids drugs were comparable between groups. It is believed that prolonged duration of anesthesia is associated with an increased risk of postoperative sore throat. Furthermore, intraoperative use of opioids drugs can significantly affect the occurrence of early postoperative sore throat [7]. In the absence of comparison of important risk factors affecting occurrence of early postoperative sore throat, thus, we argue that the secondary outcome findings and their subsequent conclusions should be interpreted with caution, as they may have been determined using incomplete methodology.
We believe that addressing above these issues will be helpful for avoidance of any optimistic interpretation or misinterpretation of study results.

Authors’ Contributions

All authors had carefully read manuscript of Arslan and Yörükoğlu, analyzed their methods and data. Ying Gao suggested comment points and drafted this manuscript. Fu-Shan Xue critically revised comment points and this manuscript, and is the author responsible for this manuscript. LJZS revised comment points and this manuscript. All authors had seen and approved the final manuscript.

References


3. Engin A. The definition and prevalence of obesity and metabolic syndrome. Advances in Experimental Medicine and Biology 2017; 960:1-17. doi: 10.1007/978-3-319-48382-5_1

