

Difficult Airway Management: Correct Concepts and Algorithm are Important for Patient Safety

Gui-Zhen Yang, Fu-Shan Xue, Chao Sun, Gao-Pu Liu

Department of Anesthesiology, Plastic Surgery Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100144, China

To the Editor: We read with great interest the case report published in Chinese Medical Journal by Ma *et al.*,^[1] who described difficult airway for patients undergoing spine surgeries. We believe that there are several issues regarding the difficult airway concepts and difficult airway management algorithm used in this article that need to be clarified.

First, all three cases reported in this article were anticipated as difficult airways due to cervical stiffness and/or restricted mouth opening, but general anesthesia was induced, and muscle relaxant was administered before tracheal intubation. We were interested in knowing whether the authors checked the ability to ventilate the patient by facemask before anesthesia induction and administration of muscle relaxant. It must be emphasized that when airway management is expected to be difficult, either because of the presence of a pathologic factor or a combination of anatomic factors, airway patency should be secured and guaranteed (usually by intubation) while the patient remains awake. In clinical practice, awake intubation is often regarded as the safest option for patients with known or anticipated difficult airway and the awake fiber-optic intubation has been established as the gold standard for difficult airway management.^[2] In the recent fourth National Audit Project Report of the Royal College of Anaesthetists in the United Kingdom,^[3] provider judgment against performing awake fiber-optic intubation has been cited as a potential contributing factor in poor airway outcomes. Moreover, if provider plans to manage the difficult airway under anesthesia, spontaneous breathing must be reserved before successful intubation and the patient's airway should be tested by gradually deepening anesthetic depth. Especially, it is necessary to check the ability to ventilate the patient by facemask before administering a muscle relaxant. When facemask ventilation is not difficult, the airway is easy to manage using the facemask ventilation even if the larynx proves difficult to visualize or tracheal intubation is a failure.^[4]

Second, in the second case, facemask ventilation was easy, direct laryngoscopy was not attempted, and tracheal intubation was achieved with McGrath video laryngoscope at first attempt. According to the latest standards of difficult airways by the American Society of Anesthesiologists Task Force on Management of the Difficult Airway,^[5] this case should not be defined as a difficult airway.

Third, in the third case, the GlideScope video laryngoscope was used as the first choice for tracheal intubation after anesthesia induction and revealed a Cormack–Lehane Grade 4 laryngeal view. The readers were not provided with the blade type and size of GlideScope video laryngoscope used in this case. There are totally two reusable and three disposable adult blades of GlideScope video laryngoscope available, and the proper function of a blade is dependent on using an appropriate length of the blade.

Fourth, in the third case, the “cannot intubate, cannot ventilate” (CICV) situation, which is one of the most critical emergencies in clinical anesthesia,^[6] occurred after anesthesia induction. After the video laryngoscopic intubation failed, three fiber-optic intubation attempts were performed via oral or nasal route. The fiber-optic intubation was finally successful, but arterial oxygen saturation dropped to the lowest level of 76%. We argue that, in managing this CICV patient, the authors did not obey the algorithm of living difficult airway management guideline and had placed the patient at a risk of loss of the airway control. According to the CICV algorithm of the American Society of Anesthesiologists' difficult airway management, early insertion of a supraglottic airway device, as long as mouth opening is sufficient, is standard practice for managing a CICV situation.^[5] The supraglottic airway devices have been effective in many CICV cases. Furthermore, they can provide an intubation conduit using a blind technique and by lightwand, optical stylet, or fiber-optic guidance during airway resuscitation.^[7] If the supraglottic airway device fails to provide adequate gas exchange for a CICV patient, the option of emergency invasive airway access including transtracheal jet ventilation and surgical airway should be immediately performed.^[5,6] As the clinicians, we must remember that maintenance of oxygenation and ventilation is paramount during difficult airway management. When the intubation attempt fails in a patient with difficult facemask

Address for correspondence: Prof. Fu-Shan Xue,

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, China
E-Mail: xuefushan@aliyun.com

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ventilation; thus, the priority is to ensure adequate ventilation and oxygenation of the patients rather than repeated intubation attempts.^[4,5] Actually, patients with difficult airways may only die of ventilation or oxygenation failure, but do not die of failed intubation.^[6]

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Conflicts of interest

There are no conflicts of interest.

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