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LETTER TO THE EDITOR

What is missing for difficult airway management in the 21st century

O que falta para o manejo de via aérea difícil no século 21

Dear Editor,

The difficult airway algorithm developed by the American Society of Anesthesiologists has significantly decreased morbidity and mortality related to airway management.[1] This algorithm, widely spread in different countries, provides a rational and effective framework for the anesthesiologist's performance in this clinical setting. The new version of this algorithm highlights the use of supraglottic devices and videolaryngoscopy.[2]

Difficult airway algorithms have become a mainstay of training programs in anesthesiology and clinical practice. Its effectiveness depends on the proficiency of its users, and training in various techniques of airway management is mandatory. Nevertheless, not all users in training, or even experienced physicians, have full competence regarding current algorithms or techniques for difficult airway. In a recent study conducted in the UK, the incidence of complications reached 1:5000 cases. Hypoxemia is the main cause for bringing disastrous consequences, such as cardiac arrest, brain damage, and death.[3] Unfortunately, there is no comparative study with the current Brazilian reality. Among the reasons given for these outcomes, the inability to predictively assess the airway and the lack of proper training and essential equipment may be cited.[3]

In order to successfully ensure the different airway presentations, the physician must have psychomotor skills that can only be obtained through training and experience. In this regard, the Stanford University Advanced Airway Management Program, led by Dr. Vladimir Nekhendzy, trained over a thousand Brazilian anesthesiologists in various airway management techniques. This is the result of joint work with various state societies of anesthesiology since 2007 (personal communication). The fact of living/knowing both (American and Brazilian) realities allows us to issue a challenge to all colleagues in order to reduce this difference, particularly regarding the provision of essential equipment.

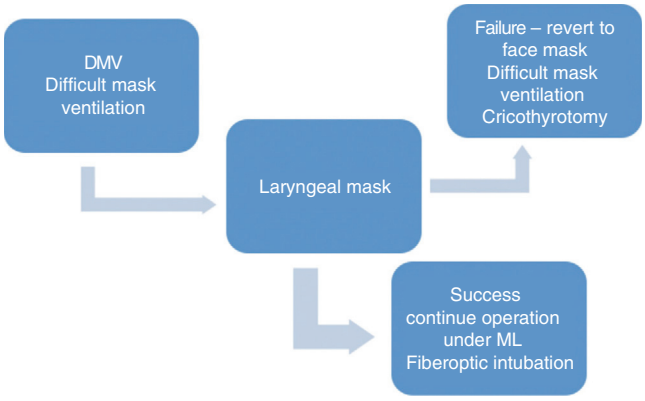

Figure 1 Difficult mask ventilation (DMV).

Bougie[4] and laryngeal mask[5] have shown to be efficient in most settings of unpredicted difficult airway management; however, nowadays optical devices have been used frequently. Unfortunately, many training programs have no access to these devices.

We propose a new simplified algorithm for difficult airway management. Our goal is to provide a standardized approach for difficult airway management that focuses on institutional issues (e.g., accessibility, material, and training) and can be widely applied. Based on the organizational strategy recommended by Schmidt and Eikermann, we propose a model for difficult airway management that leads to learning and, once mastered, to strong adhesion. We simplify the decision chart for three situations: (1) difficult mask ventilation (DMV, Fig. 1); (2) failed direct laryngoscopy (DL) with Cormack–Lehane/Yentis[6,7] Grade I or II (Fig. 2); and (3) failed direct laryngoscopy (DL) with C–L/Y Grade III or IV (Fig. 3). In an effort to simplify this approach, while maximizing the expertise, our approach included only five airway devices: bougie, laryngeal mask airway (which may serve to vent or conduit for intubation), videolaryngoscope, bronchoscope, and the oxygen flow modulator device (Enk®).

A pilot study including preceptors and residents of anesthesiology at two academic institutions was conducted in Recife, Pernambuco, from September 2012 to September

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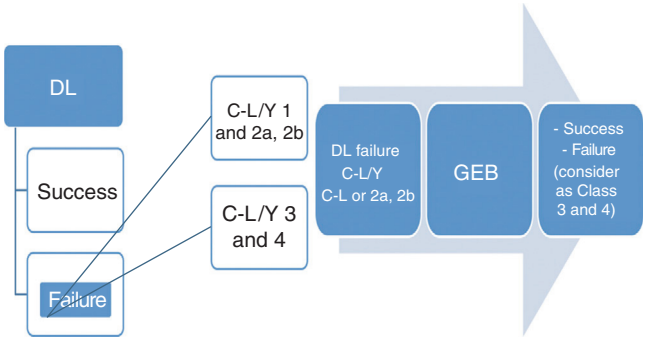

Figure 2 Failed direct laryngoscopy (DL) with vision Grades I and II, according to Cormack–Lehane classification modified by Yentis (C–L/1 and 2).

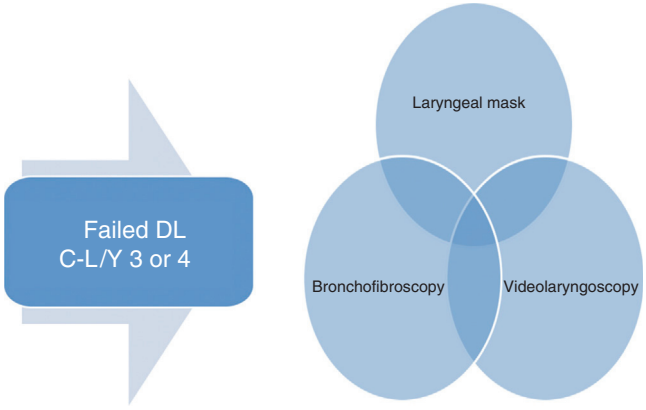

Figure 3 Failed direct laryngoscopy (DL) with vision Grades IIIand IV, according to Cormack–Lehane classification modified by Yentis (C–L/Y 3 and 4).

2013. Each center received a day of instruction as part of the program, which included a didactic module and another with skill stations. After this training, there was also monitoring within the surgical ward. We know that to validate an algorithm, hundreds or even thousands of patients are needed.[8] This proposal includes tools that are available to anesthesiologists and has been validated in the literature. We emphasize that each device has indications that are unique, which may be advantageous in certain situations and limiting in others. There is no single solution or device that allows the ultimate solution for difficult airway management. The lesson learned is that, with a relatively low investment for hospital administration, it is possible to enable our anesthesiologists and surgical centers appropriately. We are analyzing the feasibility of conducting a large prospective study in the future.

Initiatives such as this will help identify the special local needs and its implementation feasibility, and also provide a variety of solutions to problems encountered in daily clinical practice in communities with low socioeconomic status. We may not allow our patients to continue to suffer from lack of basic equipment. Here is our appeal: ZERO complication from the lack of essential material in airway management!

Conflicts of interest

The authors declare no conflicts of interest.

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