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Trends in Anaesthesia and Critical Care

journal homepage: www.elsevier.com/locate/tacc

Heavily questioned two dogmas in airway management

While well-established techniques have been applied for airway management for many years, it is noteworthy that nowadays, non-evidence based applications are abandoned and patient safety-based approaches take over. An example of this is the use of halothane, which has been used for years for the induction of anaesthesia for children but left the place with a radical shift to sevoflurane in the 1990s [1]. On the other hand, reductionists teaching approaches such as “see one do one teach one” were used in airway training as well as in many other areas of anaesthesia, but in recent years advanced educational techniques based on simulation took over and are now largely in place [2]. This issue of *Trends in Anaesthesia and Critical Care* includes two controversial issues. One of these is a question about whether an application that has been going on for years has to change.

Should we give during induction of anaesthesia, as the standard procedure neuromuscular blocking agents before mask ventilation or afterwards? Domenech et al. [3] clarify this issue in their narrative review. This article responds clearly to the question of whether we improve patient safety without waiting for the action of muscle relaxation - in the form of mask ventilation as we have been trained for years, or whether we are actually compromising patient safety by continuing this way. This debate began in the 2000s and continues until today. Goodwin et al. [4] included 30 patients undergoing general anaesthesia and measured inspired (V_{Ti}) and expired (V_{TE}) tidal volumes before and after neuromuscular blockade. When the V_{TE}/V_{Ti} ratio was used to assess the effectiveness of ventilation, no significant difference was found between periods before and after paralysis. The major problems to be encountered in the induction of anaesthesia without neuromuscular blocking agent are e.g. opioid-induced muscle rigidity or laryngospasm secondary to difficult face mask ventilation. Traditionally the main reason for bag-mask ventilation of the patient before the administration of neuromuscular blocking agent was the intention to predict unexpected difficulties or impossible mask ventilation with the option to awaken the patient as a rescue approach [5]. However, the agent suxamethonium/succinylcholin was popular in those years because of the rapid onset of action and relatively short duration of action, but it was not possible to predict the clinical course of the agent [6]. Besides the incidence of impossible mask ventilation is between 0.0001 and 0.02% [3], today the anaesthesia community uses rocuronium and sugammadex not only for patients with expected difficult airway management. Naguib et al. [7] showed that the duration of neuromuscular blockade with 1.0 mg/kg succinylcholine took 10 min but 1.2 mg/kg rocuronium followed by 16 mg/kg sugammadex 3 minutes later resulted in re-establishing of muscular activity within 4.5 minutes. Other valuable acquisitions we did not have decades before but are nowadays available are the progress in monitoring techniques, difficult airway algorithms, numerous difficult airway rescue devices, and awake and asleep

fiberoptic intubation opportunities [8]. The fact that awake and asleep fiberoptic intubation options are always present in patients with difficult mask ventilation or difficult tracheal intubation is also supporting that we have to change our attitudes for face mask ventilation. First of all, there is no evidence-based comparative study showing the need to check ventilation before providing neuromuscular blocking agent. Besides that, the National Audit Project 4 (NAP4) recommends: “where facemask or laryngeal mask anaesthesia is complicated by failed ventilation and increasing hypoxia the anaesthetist should consider early administration of further anaesthetic agent and/or a muscle relaxant to exclude and treat laryngospasm” [9]. It is also clearly stated in the latest published 2015 Difficult Airway Society (DAS) guideline that “if face mask ventilation is impossible paralyse the patient” [10]. In this regard, as the first choice to read, we propose you this article where you can find the most recent statement to that topic and a brief evaluation.

Our second choice we want to highlight, is an article by Urtubia et al. [11]: a different perspective on how to manage problems encountered during airway management: the “Vortex approach”. We often use DAS [10] as well as American Society of Anesthesiologists (ASA) [12] guidelines in our clinical practice for difficult airway management. Until recently these established guidelines provided us with not more than algorithms in case of a difficult airway situations. However, during a crisis, sometimes more information is available than someone can process under stress [13]. This cognitive overload impairs decision-making and task management with the danger to become fixated easily on a particular procedure or job to do. The “Stop and Think” step in the 2015 DAS guideline is an instruction added in order to make the correct orientation focusing on what we call nowadays “non-technical skills” [10].

The Vortex approach to airway crises management helps the stressed clinicians during difficult airway management situations to be better focused and to recall the multiple rescue techniques and options available while avoiding unsuccessful recurrent interventions [14]. The recently published “Guidelines for the management of tracheal intubation in critically ill adults” by the Difficult Airway Society (DAS) has been taken a step forward and a section entitled “Managing cognitive overload and the Vortex approach” has taken place [15]. In this issue’s article by Dr. Urtubia and colleagues, it is clearly stated how the Vortex approach can be integrated into each individual difficult airway approach. Therefore, besides being an up-to-date clinician, who knows what the sequences have been to follow through an algorithm in these extreme situations, it is now possible for all the readers to become a superb team member that is able to cope successfully with such stressful situations. We hope you enjoy reading our selection.

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