

Difficult airway management – a constant challenge

Airway management during anaesthesia and in the critically ill patient admitted to the intensive care unit (ICU) has seen significant advances since the beginnings of anaesthesia practice. Nevertheless, the difficult airway remains up until now one of the greatest challenges of the anaesthetist, with possible dramatic consequences for the patient when failing to intubate and failing to ventilate. Airway management remains one of the prime skills of any anaesthesia provider and directly affects patient safety in the surgical or ICU setting. During the last decades anaesthesia has become increasingly safe, with a practice based on clear guidelines and protocols, but nevertheless failed airway management still leads to feared complications, that although rare, can sometimes be life-threatening.

Airway management is strongly influenced by context, with rates of failed intubation that differ in the hospital vs. pre-hospital setting. Another great determinant is the urgency context of the surgical intervention. Therefore, the incidence of failed intubation varies as follows, based on the aforementioned situations: elective surgery setting failed intubation incidence is approximately 1 in every 1000 cases [1], during rapid sequence induction (RSI) it is around 1 in 300 cases [2], with an even higher incidence (1 in 100 cases) in the ICU, emergency department, and pre-hospital setting [3]. Difficulty in airway management includes multiple entities according to the Practice Guidelines for Management of the Difficult Airway updated by the American Society of Anesthesiology. These entities

are: difficult facemask or supraglottic airway ventilation, difficulty in placing the supraglottic device, difficult laryngoscopy, difficult tracheal intubation, and failed intubation [4].

The “can’t intubate can’t ventilate” (CICV) scenario occurs in 1 in 5000 cases for general anaesthesia, but only 1 in 50 000 patients will need an emergency surgical airway. Nevertheless, 25% of deaths related to anaesthesia are attributed to CICV [5]. The most feared and serious complications of a difficult airway are death, cardiopulmonary arrest, brain injury, and airway trauma. Apart from these, the anaesthesiologist should also monitor the patient to evaluate for further complications such as aspiration, pneumothorax, oedema or possible bleeding.

Around the world, there are several societies that share a common interest, improving airway management by both the anaesthetist and clinicians working in the critical care setting, such as the European Airway Management Society (EAMS) or the Difficult Airway Society (DAS). These societies develop guidelines that are subject to revision on a regular basis, in order to assist the clinician in making evidence-based decisions in airway management. The guidelines are based on the evaluation and review of the scientific literature and on findings and recommendations made by experts in the field, aiming at improving medical conduct and patient safety. This year in December, EAMS will host the 5th European Airway Management Congress, an occasion for experts’ meetings, practical and theoretical updates, and workshops, providing training for both novice trainees and experienced clinicians. Training stands at the foundation of safe medical practice and airway management is no exception. Poor standards of care were time and time again identified as responsible for airway management related complications. Constant training in both routine and emergency

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intubation procedures is now available for all levels of expertise, involving hands-on workshops or learning on simulators, refreshment theoretical courses, and even teaching of mental skills needed in order to master the psychological impact an unexpected difficult airway can have on the clinician.

The present issue of our journal reflects the importance of the topic of difficult airway management, bringing forward two articles on the subject. The two studies highlight the importance of ventilation, as well as the importance of a precise and successful tracheal intubation. Tobin et al. carried out a study [6] that evaluates the ability of novice trainees to efficiently ventilate a patient using two different facemasks. They based their results on the achieved tidal volume per mask, and also studied the impact hand area, age, and gender on quality of mask ventilation. The Tao Mask proved superior for a first attempt at bag mask ventilation, helping students achieve greater tidal volumes. The same study showed that hand size does not have a great impact on the quality of ventilation when using the Tao mask [6].

A second original article published in this issue compares the impact the use of channeled vs. non-channeled videolaryngoscope blades has on the performance and success of tracheal intubation [7]. Biro and Schlaepfer investigated the characteristics of two blade types on two randomly allocated groups of patients undergoing elective urological surgery under general anaesthesia. As characteristics of laryngoscopy and intubation they assessed the time needed for clear glottis recognition from the insertion of the laryngoscope, the number of attempts for intubation, the visualization degree of the glottis, and the lowest peripheral oxygen saturation value registered during the intubation procedure. Patients were also assessed during the recovery period for a sore throat or dental damage, as possible airway-manipulation related complaints. Their research showed differences between the two studied blade types, with a shorter time to larynx recognition for the non-channeled blades, although due to the easier handling, time to successful intubation was faster with the channeled blades [7].

Technological advancements such as those presented in the aforementioned articles, as well as research in the field, are destined to increase airway management-related patient safety. Although complications of airway management in general are not frequent, complications that arise in the case of CICV are dramatic. For the same reason societies in the field have also developed guidelines that are directly transferable from one hospital to another, that help anaesthetists in managing complex emergencies such as the difficult airway. Certain skills must be acquired by all anaesthesia providers, by ICU doctors, and by

the personnel in the ED in order to increase patient safety and to reduce the chance for complications when encountering an unanticipated difficult airway. Constant training is mandatory, as well as the implementation of guidelines, although planning at a local level is also important. Competence in airway management must be first achieved and then maintained, as this is a field of constant development, with new airway devices appearing on the market that could be introduced in the future in daily clinical practice.

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Conflict of interest

Nothing to declare

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