Airway management and supraglottic devices: which solution for which problem?

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Since 1983, when Brain[1] published his first preliminary report on the use of the laryngeal mask airway (LMA), supraglottic airway devices have become increasingly popular. They have been evaluated for both surgery and emergency airway management. In some institutions, they have replaced the use of endotracheal intubation for a large variety of procedures. This was a revolution because it was a new way to blindly control the airway. Every physician involved in anaesthesiology, critical care or emergency medicine was interested in these new tools. It took nearly 10 years before the use of these devices became routine practice. During this time, a large number of clinical studies have shown the real interest in their use in resuscitation but have also documented their limitations.

In this issue of the *European Journal of Anaesthesiology*, two articles illustrate the actual point of the debate around these devices. The first, published by Shin *et al.*,[2] compares the I-gel with the ProSeal LMA and the classic LMA in patients undergoing general anaesthesia, including muscle relaxants. The main interest of this well designed study was to evaluate the usefulness of a new device, the I-gel, by comparing it with both a classic one (the classic LMA) and a relatively new one (the ProSeal), which has the same concept of a built-in drain tube designed to channel fluid away and permit gastric access. The LMA has been widely used in both children and adults since the 1990s. Even if its safety in standard procedures can now be considered as well established, some concerns still remain about the quality of the airway protection and leakage. Al-Mazrou *et al.*[3] compared the airway protection in children undergoing nasal and paranasal sinus surgery and were unable to show a difference between the LMA and an uncuffed endotracheal tube combined with a throat pack. In the same way, Martin-Castro and Montero[4] compared the flexible laryngeal mask with the reinforced tracheal tube for head and neck surgery in adults and found the supraglottic airway device adequate in this clinical setting. Some concerns have to be highlighted though. In both studies,[3,4] the number of patients was limited and efficacy and safety of airway protection cannot be proved in a single study in such difficult situations. This is one of the major problems we have to face when we study the literature about supraglottic devices. There are so many new tools with such poor evidence that the first step must always be to compare them with the standard devices, which have the maximum level of proof. These standard devices remain the endotracheal tube and the LMA. No other device has enough evidence to allow a reasonable comparison.

The second relevant study that appears in this issue of the *European Journal of Anaesthesiology* was performed by Seet *et al.*[5] and compares the LMA supreme with the LMA ProSeal. Both devices include a built-in drain tube. The main difference is the shape of the device. This clearly illustrates the actual dissatisfaction related to the usage of all of these supraglottic airway devices. There is no perfect device; imperfections are related to a wide range of clinical situations that are dependent on anatomical, pathological and pharmacological differences. The situation is, for example, different in adults or children, women or men, standard surgical cases or head and neck cases, general anaesthesia with or without the use of a muscle relaxant, or during spontaneous or controlled ventilation. Nobody can contest the real improvements due to the use of supraglottic airway devices, especially for difficult airway management and during resuscitation. However, we have to carefully study the level of scientific evidence provided by all these studies.

No one should forget the initial recommendations made by Brain in 1983 about the LMA 'which may be used as an alternative to either the endotracheal tube or the facemask with either spontaneous or positive pressure ventilation'. All is summarized in this recommendation – the LMA, and some other supraglottic airway devices, can be used in a wide range of clinical situations, but not necessarily in all. Before using a new device, physicians should be interested to know the level of scientific evidence for efficacy and harm for a particular indication.

A lot of work still has to be done to precisely indicate the exact place and the real benefit of each of these new tools.

References

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