



LETTERS

THE USE OF THE LARYNGEAL MASK AIRWAY WITH MECHANICAL POSITIVE PRESSURE VENTILATION

To the editor:

I have some serious reservations about the article, "The use of the laryngeal mask airway with mechanical positive pressure ventilation," which appeared in the October 2004 *AANA Journal*.¹ The authors' conclusion that positive pressure ventilation (PPV) with a laryngeal mask airway (LMA) is safe essentially hinges on 1 meta-analysis.² I feel I need to remind the authors of this article that meta-analyses are often performed retrospectively on studies. In addition, many are based on summary statistics that have been extracted from published papers. Consequently, there are a number of potential problems that can affect the validity of these meta-analyses. The available studies used in a retrospective meta-analysis may vary in design, patient population, treatment regimen, primary outcome measure, and quality. Therefore, it is reasonable to suppose that the true treatment difference will not be exactly the same in all trials. But all this aside, even the author of this meta-analysis concludes that the analysis shows a higher frequency of gastric insufflation when compared to the use of tracheal tube placement and that when compared to the use of a face mask esophageal reflux was more likely to occur with an LMA.

Let me also point out that the author of this meta-analysis recently coauthored a report in the *British Journal of Anaesthesia* that described 3 cases of aspiration associated with the LMA, including the first brain injury and the first death. The report also reviewed 20 specific case reports of aspiration associated with the LMA.³ I don't think anyone would argue with the authors that "complications such as sore throat, vocal cord paresis, endobronchial intubation,

bronchospasm, and increased adrenergic activity" is more prevalent with the use of endotracheal tubes (ETTs) than with LMAs, but the issue here is the appropriateness of using an LMA when PPV is employed. If you consider that the overall incidence of LMA malpositions is 40% and that 90% of this group⁴ will experience gastric air insufflation, then it seems prudent that mechanical PPV be avoided if the airway is secured with an LMA.

Perhaps the authors can provide us with a little more insight into the study by Grazzotti.⁵ They write that he (Grazzotti) "found no significant difference in insufflation volumes between the LMA and the tracheal tube." Do they interpret "insufflation volumes" as meaning lung insufflation volumes or gastric volumes? I would definitely question the validity of the study if the author was referring to gastric volumes since a well placed ETT should assure no gastric insufflation.

The authors point out that "peak airway pressures greater than 20 to 30 cm H₂O have large impacts on the air leak from the LMA" subsequently producing "hypoventilation and gastric insufflation." They even note that air leaks generally occur when airway pressures average 17 cm of H₂O.⁶ If this is so, how in good conscious can they tacitly agree with Natalini et al⁷ who, according to the authors, suggest using the LMA with positive pressure ventilation in patients with "chronic obstructive pulmonary disease, obesity," or with patients needing to acquire a "Trendelenburg or prone" position or undergo "laparoscopy." In my 35 years of anesthesia practice I have yet to see airway pressures less than 20 cm H₂O under these conditions. To my way of thinking, using an LMA under these conditions is akin to malpractice.

Lastly, the authors also suggest using short acting muscle relaxants to help secure the airway with an LMA. I wonder do they also advocate using muscle relaxants to insert an oral pharyngeal airway? To intimate that the use of muscle relaxants for the insertion of an LMA is safe or even normal practice under-

mines good anesthetic practice, which is to provide adequate depths of anesthesia to offset the various stressors to which the patient is subject.

As far as I'm concerned, I will continue to reserve the use of LMAs for procedures that will allow me to assist, not control, the patient's ventilation. I will insert these airways under adequate anesthesia, ie, when the airway reflexes are appropriately obtunded, and I will never use the LMA in conjunction with positive pressure ventilation. If my thinking seems to some to be antiquated, so be it.

REFERENCES

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**Michael Troop, CRNA, PhD, LTC,
USA(ret.)**
Naples, Florida

Response:

In response to Michael Troop's letter to the editor regarding the article, "The use of the laryngeal mask airway with mechanical positive pressure ventila-

tion,” we would like to briefly address a couple of issues.

First, let us preface this response by noting that we were in no way attempting to persuade or change current practice patterns regarding LMA use. We simply wanted to provide a review of the most current literature regarding this controversial topic. We identified this as a controversial topic due to the observation of variable practice patterns pertaining to LMA use in the clinical arena.

Multiple comments in Mr Troop’s response underscore the controversy surrounding LMA use, and the points in which he states he is unclear on are far too numerous to respond to in our brief reply. We would like to emphasize that he misunderstands the intent of the article.

We support the information presented in the article, and again empha-

size (as we repeatedly noted in our article) that in order for the LMA to be used *safely* and *effectively* in practice, the appropriate patient and surgical conditions must be adhered to. For instance, LMA use is *not recommended* for use in patients with obesity, gastroesophageal reflux disorder, pulmonary conditions, Trendelenburg positioning, laparoscopic procedures, etc. Additionally, the LMA must be inserted with the appropriate technique, must be seated properly to create a seal, and peak pressures must remain below 20 cm of H₂O to avoid improper results and gastric insufflation. As discussed in the article, the literature clearly states that the LMA is not recommended for use in inappropriate conditions (which includes but is not limited to those conditions mentioned above). The article even notes that there may be

differences in opinion regarding demographic profiles and areas in which LMAs are used.

Lastly, we acknowledge Mr Troop’s opinions and would be curious to hear from the individuals who safely incorporate positive pressure ventilation with LMA use in their practice. Our intent was only to denote differences in practice patterns regarding the LMA and identify the most current literature available on this controversial topic. We were not looking to convey opinions or change practice patterns with the article, but we must state that it is our opinion that Mr Troop’s comment was a bit harsh and antiquated when indicating that the use of the LMA with PPV constitutes malpractice.

Suzanne Snyder-Clickett, CRNA, MSN
Carrie Chmielewski, CRNA, MSN
Troy, Michigan