Sir,—Tolley, Watts and Hickman have demonstrated apparently that the laryngeal mask airway (LMA), when inserted by inexperienced personnel, is less satisfactory for ventilation of the lungs than use of a traditional mask and airway [1]. We believe that their results warrant careful examination, because they conflict with previous studies which demonstrate that LMA insertion is learned readily by inexperienced personnel [2, 3]. There are some features of the study that cause us some concern and may make the results less valid than they might have been.

Although the operators are stated to be junior hospital doctors with no postgraduate anaesthetic experience, there is no information on whether or not they had received resuscitation training, either when medical students or after qualification. We understand from the several Australian trainees in our department that it is common practice in Australian medical schools for undergraduates to undergo basic resuscitation training which includes the use of bag and mask ventilation.

Patients who were likely to present difficulties for tracheal intubation were excluded. We would be interested to know what criteria were used and if any of the patients included in the study actually presented difficulty when the trachea was intubated after the study manoeuvres were completed (this is a situation in which the LMA has a recognized role) [4]. It is not stated how the operators were instructed to use the face mask and airway. Use of a mannequin or demonstration in vivo may make the technique easier to learn than using a video. Also, the operators were not taught in a standard fashion to use the LMA: some watched a video, while others were demonstrated the technique by an investigator.

Patient selection and anaesthetic management were not strictly standardized, with a large age range of 18–84 yr (ASA I–III) and there was no direct monitoring of the state of neurological block. The spread of patient age and general health may not directly affect results in this study; however, we are concerned that there was no standard muscle relaxation, when variations in muscle tone could affect the ease of ventilation by inexperienced personnel using each technique.

Although the required tidal volume of 800 ml was recommended by the American Heart Association, the source of the time limit of 40 s is not mentioned. We are intrigued by the decision to record the times of all the failures as 41 s and then quote the results as a mean time to successful ventilation. Additional useful information would have included the ranges of the time to successful ventilation. Although the difference in mean times to ventilation is statistically significant, it is interesting to debate if the approximately 5-s delay with the LMA is clinically significant, bearing in mind the “hands free” security of the airway and the degree of protection against aspiration that the LMA potentially affords. It would also be interesting to know the exact causes of failure in both groups. Was it desaturation to less than the limit of 95%, or was it difficulties with LMA placement (or the fit of the mask in the other group)?

The fact that each operator managed the airways, using both techniques, of five patients would enable the authors to examine the learning curve for each technique. We would be interested to know if there was any reduction in time taken to successful ventilation as experience was gained and, if so, if the improvement was equal with each technique.

This study compared LMA ventilation and use of the mask and airway yet, during resuscitation, initial ventilation is with the face mask and airway using a large inspired concentration of oxygen. The next phase is to control and protect the airway by intubating the trachea with a tracheal tube. The exact role of the LMA in resuscitation has yet to be elucidated fully, but we feel that it is possible that the LMA may be a useful adjunct for airway management, especially when the operator is inexperienced. The degree of protection against aspiration afforded by the LMA and its stability within the airway during external cardiac massage need to be determined. We hope that the questionable results of this study will not deter investigators from examining in more detail the exact role of the LMA during resuscitation.

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Sir,—Tolley, Watts and Hickman [1] compared ventilation with the laryngeal mask and face mask by inexperienced personnel. Their data do not support the statement appearing in the summary that “the LMA cannot be recommended as a resuscitation device for use by inexperienced operators”. Having failed to address most of the relevant questions, they are quite unjustified in making categorical statements about the place of the LMA during cardiopulmonary resuscitation.

Some of the theoretical advantages of the LMA compared with the Guedel airway and face mask during cardiopulmonary resuscitation are as follows: avoidance of anatomical airway obstruction, maintenance of a seal between the device and the airway and freeing of the operator’s hands for other activities (such as cardiac massage, cervical spine control and two-handed bag squeezing). Therefore, ventilation should be greater in the long term, particularly by the single operator. None of these issues has been addressed adequately by Tolley and colleagues, who have examined the first 40 s of ventilation only, without cardiac massage or resuscitation.

Against these supposed advantages must be balanced the disadvantages of the LMA, namely: the time necessary for insertion and the resultant loss of ventilation, the difficulty of insertion, the possibility of a greater risk of aspiration of stomach contents [2] and the loss of the airway seal when compliance is reduced, such as during external cardiac compression.

Success rates of 74% and 92% are reported for the LMA and mask, and it is inferred that the reason for failure to achieve two tidal volumes of 800 ml within 40 s in the LMA group was delayed insertion. We have recorded an LMA insertion rate of 94% by inexperienced operators within the same time, using the production of carbon dioxide as the end-point [3]. This suggests that Tolley’s junior doctors were inadequately trained or were particularly unskilful, or that our results were inaccurate. Our trainees carried out twice the number of insertions and their performance was very similar to that recorded for failure to achieve two tidal volumes of 800 ml within 40 s in the LMA group was delayed insertion. We have recorded an LMA insertion rate of 94% by inexperienced operators within the same time, using the production of carbon dioxide as the end-point [3]. This suggests that Tolley’s junior doctors were inadequately trained or were particularly unskilful, or that our results were inaccurate. Our trainees carried out twice the number of insertions and their performance was very similar to that recorded for failure to achieve two tidal volumes of 800 ml within 40 s in the LMA group.

Not only should the study have been carried out after adequate training, rather than during it, but it should also have been extended over a clinically relevant period—for several minutes—when insertion has been successful within 40 s. It is possible that the LMA would allow more ventilation than the face mask over a longer period, making good the losses necessitated by insertion, as known from the inadequacies of single operators using a face mask, Guedel airway and resuscitation bag [6, 7].

This study poses an important question, but as a result of both failure to train adequately and an inappropriate period of assessment, its conclusions are not justifiable. The LMA may or may not be useful during resuscitation, but more carefully conducted research is needed before it is written off for this purpose.

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