the Macintosh blade should be preferred to the Miller blade.

Instead, the study data suggest that in those predicted to be a difficult intubation, the Miller blade would offer the best chance of successfully intubating the trachea, although in those predicted to be straightforward, the Macintosh would be the preferred blade.

The vast majority of patients present no airway difficulties and clearly, in these patients, we must all endeavour to avoid the complications associated with intubation. However, like Arino, we recognize that intubating the trachea is the ultimate end-point for determining the efficacy of a laryngoscope blade. In those predicted to be difficult, this must be the over-riding consideration.

The data presented show that when a Miller blade was used, no patient had a grade 3 or 4 laryngoscopic view, whereas eight out of 100 patients had a grade 3 or 4 laryngoscopic view when using a Macintosh blade. In fact, one of the four patients who could not be intubated was in the Macintosh group.

Finally, when applying any conclusions from this study to our own practice, it is noteworthy that a very high success rate for intubation was achieved for all five blades. However, the over-riding factor in the choice of any airway device should be the operator's past experience and familiarity with the equipment.

Michael Lim MB BS FRCA

Charlotte Demspey MB BS FRCA

Michael Pead MB BS FRCA

London, UK

Reference

- 1 Arino JJ, Velasco JM, Gasco C, Lopez-Timoneda F. Straight blades improve visualization of the larynx while curved blades increase ease of intubation: a comparison of the Macintosh, Miller, McCoy, Belscope and Lee-Fiberview blades. *Can J Anesth* 2003; 50: 501–6.

REPLY:

We consider that straight blades improve visualization of the larynx while curved blades increase ease of intubation. A good laryngeal view with the intubating device did not equal ease of intubation. Since the most important aspect of any laryngoscopic intubation is the correct placement of the endotracheal tube, and not the visualization of the larynx, we recommend the use of a curved blade to improve the ease of intubation. Curved blades provide more room in the oropharynx to maneuver the endotracheal tube, even if the laryngeal view is Cormack grade 3.¹

When laryngoscopy is difficult with the curved blade (the epiglottis obstructs the view of the larynx) the use of a straight blade may help to achieve adequate laryngeal visualization,² but the ease of intubation may not improve. Like Marks et al.³ we recognize that the curved tip of the Miller blade offers better intubating conditions than other straight blades.

We agree that the operator's experience and familiarity is an important factor in the choice of any airway device.

Jose J. Arino MD PhD

Jose M. Velasco MD

Carmen Gasco MD PhD

Francisco Lopez-Timoneda MD PhD

Madrid, Spain

References

- 1 Arino JJ, Velasco JM, Gasco C, Lopez-Timoneda F. Straight blades improve visualization of the larynx while curved blades increase ease of intubation: a comparison of the Macintosh, Miller, McCoy, Belscope and Lee-Fiberview blades. *Can J Anesth* 2003; 50: 501–6.
- 2 Benumof JL. Difficult laryngoscopy: obtaining the best view. *Can J Anaesth* 1994; 41: 361–5.
- 3 Marks RR, Hancock R, Charters P. An analysis of laryngoscope blade shape and design: new criteria for laryngoscope evaluation. *Can J Anaesth* 1993; 40: 262–70.

To the Editor:

I read with interest the recent article by Arino *et al.*,¹ assessing the use of straight blades (Miller, Belscope) or curved blades (Macintosh, McCoy, Lee-Fiberview) in the improvement of visualization of the larynx and ease of intubation.

It was noted in the conclusion that straight blades give the best visualization of the larynx. However, "the function of laryngoscopy is ease of placement of the endotracheal tube and a curved blade was optimal in this respect".¹

In the United Kingdom, in situations of difficult intubation a gum elastic bougie is traditionally used² and has reported success rates of 96%.³ In this case visualization of the larynx to aid placement of the bougie is the most important factor. The increased space in the oropharynx to maneuver the endotracheal tube (as provided by a curved blade) is therefore not required, as studies show that once the bougie has been placed the tube can always be railroaded into position.⁴ Hames *et al.* recently suggested greater success with fibrescopes but at present in the UK these are not readily available and require dual operators at a time of urgency.³

It may be suggested that in the management of patients with difficult intubation the use of a straight blade with a gum elastic bougie is an alternative strategy in the accurate placement of the endotracheal tube.

Lucy Miller MRCP
Salisbury, England

References

- 1 Arino JJ, Velasco JM, Gasco C, Lopez-Timoneda F. Straight blades improve visualization of the larynx while curved blades increase ease of intubation: a comparison of the Macintosh, Miller, McCoy, Belscope and Lee-Fiberview blades. *Can J Anesth* 2003; 50: 501–6.
- 2 Latto IP, Stacey M, Mecklenburgh J, Vaughan RS. Survey of the use of the gum elastic bougie in clinical practice. *Anaesthesia* 2002; 57: 379–84.
- 3 Hames KC, Pandit JJ, Marfin AG, Popat MT, Yentis SM. Use of the bougie in simulated difficult intubation. 1. Comparison of the single-use bougie with the fibroscope. *Anaesthesia* 2003; 58: 846–51.
- 4 Gataure PS, Vaughan RS, Latto IP. Simulated difficult intubation. Comparison of the gum bougie and the stylet. *Anaesthesia* 1996; 50: 935–8.

Management of the unanticipated difficult airway using a modified sequential intubation technique

To the Editor:

Leoni *et al.*¹ are to be congratulated on the successful outcome to a technically-difficult life-threatening situation. By first oxygenating the patient, and only then attempting to intubate the trachea, they have beautifully illustrated the golden rule for the difficult airway – that patients die from failure to oxygenate, not failure to intubate.

Whilst impossible to criticize the final result, we wish to comment upon two areas.

Firstly, we would question the value of drawing arterial blood for blood gas analysis whilst still attempting to ventilate via face-mask. The inadequacy of gas exchange is all too obvious from the clinical picture. An investigation should only be performed if its result may alter the patient's management, and clearly, tracheal intubation was inevitable. To make matters worse, the physician taking the arterial sample is being diverted from the urgent priority of resuscitating the patient.

Secondly, most endotracheal tubes are not long enough to avoid the risk of its cuff sitting over or above

FIGURE Aintree catheter mounted onto fiberoptic bronchoscope and passed through a laryngeal mask airway.

the vocal cords when passed through the laryngeal mask airway (LMA).² This increases the risk of accidental extubation when removing the LMA, in addition to preventing the administration of high positive airway pressures and positive end-expiratory pressure. A solution would be using the Aintree intubating catheter³ (Cook Critical Care, IL, USA). This is a modified airway exchange catheter that fits over the bronchoscope. It is 56 cm long, allowing greater control of the airway and oxygenation to continue, via its Rapi-fit® connector, whilst rail-roading the endotracheal tube over it. A purpose-built solution for this situation.

Michael Lim FRCA*
Jonathan Casement FRCA†
London, * Stoke-on-Trent, † UK

References

- 1 Leoni A, Crescenzi G, Landoni G, Castracane W, Zangrillo A. Use of the laryngeal mask airway and a modified sequential intubation technique for the management of an unanticipated difficult airway in a remote location (Letter). *Can J Anesth* 2003; 50: 523–4.
- 2 Asai T, Latto IP, Vaughan RS. The distance between the grille of the laryngeal mask airway and the vocal cords. Is conventional intubation through the laryngeal mask safe? *Anaesthesia* 1993; 48: 667–9.
- 3 Atherton DP, O'Sullivan E, Lowe D, Charters P. A ventilation-exchange bougie for fiberoptic intubations with the laryngeal mask airway. *Anaesthesia* 1996; 51: 1123–6.

REPLY:

We appreciate your comments on our letter to the *Canadian Journal of Anesthesia*¹ and agree with both of them.