Correspondence

Ultrathin fibreoptic laryngoscope

To the Editor:

We read the paper by Roth *et al.*[1] with interest. The authors report successful oral tracheal intubation with the aid of a fibreoptic in 20 infants uisng an apnoeic relaxant technique with minimal adverse effect. We have recently completed a prospective study evaluating the 2.2 mm Olympus LF-P fibrescope (Keymed Ltd, Southend-on-Sea, Essex, UK) as an aid to oral tracheal intubation in 40 children (mean age 45) with normal airway anatomy, undergoing elective surgery using a spontaneously breathing technique with halothane.[2] The fibrescope was passed into the trachea in all children (mean time 69 sec) and fibreoptic intubation was successful in 30 children (mean time 113 sec). In ten children the procedure was unsuccessful; in seven the fibrescope flipped out of the trachea on attempting to railroad the tracheal tube into place, resulting in oesophageal intubation; two developed laryngospasm and in one the wrong-sized tracheal tube was initially chosen. In four children the arterial oxygen saturation decreased to <94% and in two of these children to <90%. The period of desaturation in each child lasted less than one minute.

The principle cause of failure was fiberscope displacement during railroading the tracheal tube. This was related to (1) the increased flexibility of the ultrathin fibrescope and (2) the use of preformed Portex tracheal tubes. Difficulty in railroading the tracheal tube is likely to be compounded during oro-tracheal intubation compared with naso-tracheal intubation because of the acute angulation with which the fibrescope enters the larynx. The use of a flexible armoured tracheal tube may have reduced the difficulty in railroading.[3,4]

The conditions for fibreoptic intubation are less than ideal when using a spontaneously breathing technique with halothane. However, they are likely to be encountered during the management of the difficult paediatric airway. Therefore, we feel that this method is more useful in maintaining skills in the use of the fibrescope than a technique employing muscle-relaxants.

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REFERENCES

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REPLY

We thank the authors for their interest in our study and the summary of their experiences with ultrathin fibreoptic intubation. We agree that "The conditions for fiberoptic intubation are less than ideal when using a spontaneously breathing technique with halothane." In our study, we addressed the safety and efficacy of orotracheal intubation using the ultrathin fibreoptic laryngoscope in anaesthetized patients after muscle relaxation was judged to be adequate by peripheral nerve stimulation. We, too, have found using the ultrathin fibreoptic intubation technique without muscle relaxant to be a much more difficult technique, due both to the irritability of the paediatric airway (laryngospasm) and the difficulty of successfully intubating and advancing the tracheal tube into a moving glottis. In our limited experience, for ultrathin fibreoptic intubation to be successful in non-paralyzed infants, the patient must be deeply anaesthetized, with the concommitant risks of hypotension and bradycardia. For this reason, we do not routinely use that technique.

The study we reported did not address the management of children with anatomically abnormal airways but was designed to test the safety and efficacy of the ultrathin fibreoptic intubation in the child with a presumed normal airway.

Lastly, we should mention that the uncuffed, clear tracheal tubes used in our study were all made by one manufacturer (Mallinckrodt Medical, Inc., St. Louis, MO). These tubes were pre-softened in warm water to facilitate passage along the fibreoptic scope. Importantly, they were never forced into position over the fibreoptic scope, and passage was not attempted until the ultrathin fibreoptic scope was deeply positioned (near carina). With this technique, we had no difficulty in advancing the tracheal tube after intubation with the fibreoptic scope.

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