LMA masks and children

To the Editor:

I was interested to read of Dr. Tham's approach to urgent paediatric anaesthesia for torsion of testis and I note that he found difficulty in the use of the laryngeal mask airway (LMA).¹ Dr. Tham attributed the patient's "decrease in oxygen delivery and resulting hypoxia" to a "leak of anaesthetic mixture" caused by selection of an inappropriately-sized LMA. Guidelines show that paediatric LMA selection is primarily based on patient weight, not age. A #2.5 LMA is used for patients weighing between 20 and 30 kg, not for one of 45 kg.²

My main concern, however, is Dr. Tham's choice of the LMA in the circumstances described in his letter. His patient is 12 yr old, "chubby" and presenting for emergency surgery. There is no guarantee *whatsoever* that his patient had an empty stomach and I contend that the use of the LMA in this situation is not the safest option. A major consideration in this case is protection of the airway from aspiration of gastric contents, which can prove lethal.³ The use of the LMA, at least in adults, may reduce lower oesophageal sphincter pressure, predisposing to gastro-oesophageal reflux.^{4,5}

I would therefore advise that in such a case where the patient's anatomy is normal, the lungs should be protected by tracheal intubation following a rapid-sequence induction and application of cricoid pressure.⁶

Another consideration is that the LMA in paediatric use may give an imperfect position⁷ and this remains under debate.⁸

David R. Ball MB BS FRCA
University of California
Irvine Medical Center
Orange, California

REFERENCES

- 1 Tham LCH. Children and size of laryngeal masks (Letter). *Can J Anaesth* 1994; 41: 354.
- 2 Wilson JG. The laryngeal mask airway in paediatric practice. *Br J Anaesth* 1993; 70: 124-75.
- 3 Edwards G, Morton HJ, Pask EA, Wylie WD. Deaths associated with anaesthesia, a report of 1000 cases. *Anaesthesia* 1956; 11: 194-200.
- 4 Barker P, Langton JA, Murphy PJ, Rowbotham DJ. Regurgitation of gastric contents during general anaesthesia using the laryngeal mask airway. *Br J Anaesth* 1992; 69: 314-5.
- 5 Vanner RG. Regurgitation and the laryngeal mask airway. *Br J Anaesth* 1993; 70: 380.
- 6 Cote CJ. Paediatric anaesthesia. In: Miller RD (Ed.).

Anaesthesia, 3rd ed., New York: Churchill Livingstone, 1990; 1897-926.

- 7 Rowbotham SJ, Simpson DL, Grubb D. The laryngeal mask in children: a fiberoptic assessment of positioning. *Anaesthesia* 1991; 46: 489-91.

- 8 Asai T. Difficulty in assessing the correct position of the laryngeal mask airway. *Br J Anaesth* 1994; 72: 366-71.

REPLY

I thank Dr. Ball for his comments. He is indeed correct in stating that the choice of a laryngeal mask airway (LMA) size for children should be made in relation to the child's weight and not his/her age. However, Dr. Ball has clearly not fully understood the purpose behind my communication, which was written to highlight the importance of choosing a correct sized LMA in children and the ease with which a wrong size can be selected.

Dr. Ball considers an alternative anaesthetic management for the child involving rapid sequence induction and tracheal intubation. Several factors, however, tipped the favour towards my chosen technique of spontaneous ventilation through a LMA. Firstly the child had been fasted for in excess of 12 hr before his admission, which is more than adequate in children prior to anaesthesia.¹ Furthermore the child had no symptoms of indigestion or heartburn and was not in severe pain, therefore no opioids had been administered. Although he was slightly overweight for his age, he was not obese, the criteria for which the use of the LMA is not recommended.² A further consideration, perhaps the most important one, is the need to avoid tracheal intubation in the child, bearing in mind the well-recognized hazards and inherent disadvantages associated with its use.³ The widespread consensus among clinicians is that the LMA has become well established in paediatric anaesthetic practice.⁴ Its versatility together with the low incidence of adverse effects when used appropriately will continue to ensure its popularity in the years to come.

L.C.H. Tham MB DA
Newcastle-upon-Tyne, UK

REFERENCES

- 1 Meakin G, Dingwall AE, Addison GM. Effects of fasting and oral premedication on the pH and volume of gastric aspirate in children. *Br J Anaesth* 1987; 59: 678-82.
- 2 Brain AIJ. The Intavent Laryngeal Mask Instruction Manual, 2nd ed. 1993; 31-32.
- 3 Atkinson RS, Rushman GB, Davies NJH. Lee's Synopsis of Anaesthesia, 11th ed, Boston: Butterworth-Heinemann, 1993; 231-2.
- 4 Wilson IG. The laryngeal mask airway in paediatric practice. *Br J Anaesth* 1993; 70: 124-5.