

Correspondence

Inhalation induction with sevoflurane

We read with interest the editorial by Goresky and Muir.¹ Perhaps the time has come to reevaluate reliance on *iv* induction of anaesthesia for adults and to consider offering inhalational induction. Recently, we offered 100 consecutive patients scheduled for minor gynaecological procedures the choice of an inhalational anaesthetic with sevoflurane or *iv* induction of anaesthesia using propofol. It was explained that patients who chose the inhalational method would not require an *iv* cannula until asleep. Inhalational anaesthesia was induced with sevoflurane 8% and maintained with sevoflurane 1–2% in oxygen 50% and nitrous oxide. Exclusion criteria included mask phobia, reflux oesophagitis, cardiac or respiratory disease, obesity and allergy to sevoflurane. When assessed by a blinded observer after surgery, the acceptability rate for inhalational anaesthesia was 86%. Most (93%) patients found it a pleasant experience and most of these (87%) would chose the mask again.

This study highlights the need to reevaluate this means of induction in adult patients. Several studies have shown rapid induction and recovery from anaesthesia with sevoflurane in the paediatric population.^{2–5} Do we not owe it to our patients to at least offer this form of induction to adults without a mask phobia who are undergoing minor procedures?

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REPLY

Observations in adults similar to those documented by Dr. McGinley, Briggs, and Carey have been presented previously. In the Journal, Doi and Kazuyuki reported in 1993¹ that sevoflurane was the least irritant of four inhalational anaesthetic agents when administered to adult male volunteers using tidal breathing of standardized inhaled concentrations.

Thwaites, Edmonds and Smith conducted a randomized, double-blind comparisons of 8% sevoflurane and propofol as induction agents for day-case cystoscopy in 102 patients. They also found in 14% of their subjects that inhalation induction with sevoflurane was unpleasant and 24% were unwilling to receive the same induction again.

*Others have reported that a vital capacity breath in adults provides a faster induction with fewer excitatory phenomena than does an induction using tidal breathing. In the Journal, Yurino and Kimura reported that induction times were faster and induction complications were fewer with single breath sevoflurane than with halothane induction. In a follow-up these investigators demonstrated in adult volunteers that a vital capacity manoeuvre provided faster induction with fewer excitatory phenomena.⁴ Using a vital capacity breath to facilitate inhalation induction BK Philip, JB Gross, MH Sloan, and JH Philip demonstrated, at an exhibit at the 1996 ASA meeting that "vital capacity inhalation was a good alternative to *iv* induction of anaesthesia." Clearly, inhalation induction with sevoflurane in cooperative adults can be even more effective than tidal breathing when an initial vital capacity breath is used.*

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Cricoid pressure

I read with interest the review article Cricoid Pressure by Brimacombe and Berry¹ and I would like to make two points.

1. As regards regurgitation, it is important to realize that Oesophageal manometric measurements have shown that gastric reflux into the oesophagus occurs at a barrier pressure below 13 cm H₂O². The barrier pressure is defined as the difference between the lower oesophageal sphincter pressure and gastric pressure, hence, barrier pressure is the physiological barrier to reflux.³ Therefore, if a patient with a basal barrier pressure of 26 cmH₂O is given a drug that decreases the lower oesophageal pressure by 14 cmH₂O, the lower oesophageal sphincter will be rendered incompetent. However, considerable individual variations in resting sphincter tone have been reported.⁴ It is obviously an advantage to increase the lower oesophageal pressure and, thereby, the barrier pressure by drugs like metoclopramide, domperidone, ranitidine, flunitrazepam.⁵ Even antacids can increase lower oesophageal sphincter tones.
2. As regards gastric insufflation, the authors refer to our article in *Anesthesiology*,⁷ but do not mention a very important finding in that paper. We studied 59 patients, from two weeks to eight years of age, who received routine general anaesthesia. In study #1 (without paralysis), the proximal airway pressure was slowly increased by gradually closing the pop-off valve on the anesthesia machine until gas was heard entering the stomach (pop-off point), or until the peak inspired pressure (PIP) reached 40 cmH₂O. The same patients were then studied when paralyzed. The important finding was that in the paralyzed state, there was a considerably lower pop-off point than in the non-paralyzed state for any given patient. Cricoid pressure would seem even more important in paralyzed patients than previously realized.

I compliment the authors on the interesting review of cricoid pressure, however, I prefer to refer to cricoid pressure by the inventor, namely, Sellick manoeuvre.⁸

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REPLY

We thank Professor Brock-Utne for his interest in our review of cricoid pressure. We agree that the use of drugs to increase barrier pressure may play a role in protecting the patient from regurgitation and they should continue to be given. However, as we pointed out in the review, the impact of these drugs on patient outcome and the extent to which they are responsible for the reduction in maternal death from acid aspiration is unknown. We also agree that the risk of gastric insufflation may be higher in paralysed than nonparalysed patients and mention in the review that this important factor has not been adequately studied. Regarding use of the term "Sellick's manoeuvre," or "cricoid pressure," we actually prefer the latter since it better describes what occurs. In addition, some historical purists might insist on the term "Monro's" or "Hunter's" manoeuvre.

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