Cricoid Pressure for Preventing Gastric Insufflation in Infants and Children

To the Editor—In a recent study of the effectiveness of cricoid pressure for preventing gastric inflation,1 the single, nonblinded investigator relied on breath sounds during cricoid pressure to determine the adequacy of ventilation and on detection of a “gurgle” by auscultation of the upper abdomen to indicate gastric insufflation. Because the investigators did not measure exhaled volumes or volumes of gases in the stomach and there is no mention of end-tidal CO₂ or CO₂ waveform, one cannot be certain that cricoid pressure did not occlude the patient’s airway. Sounds from the lungs or esophagus can be misleading because they are transmitted easily in infants and children.2 Normal breath sounds can be heard over the epigastrium, whereas esophageal sounds may be misinterpreted as normal breath sounds.

That the single investigator in Moynihan et al.’s1 study quickly rediscovered that the amount of pressure applied certainly does vary from application to application and probably was less in the younger infants testifies to the need for gentle rather than firm application of cricoid pressure to prevent gastric insufflation, as we emphasized 19 yr ago.3 In that study,4 we compared the volumes of exhaled gas and the volumes of gas in the stomach after two identical periods (with and without cricoid pressure) of intermittent positive-pressure ventilation by mask and demonstrated unequivocally, for the first time, the efficacy of cricoid pressure for preventing gastric insufflation.

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References

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Does the Potency of Fentanyl Vary with Different Inhalational Agents?

To the Editor—I was interested to read the recent papers by Glass et al.5 and McEwan et al.2 describing their investigations of the potency of fentanyl. They elegantly combined a computer-assisted continuous infusion scheme for achieving stable plasma fentanyl concentrations with the well-established method of evaluating the potency of inhalational anesthetic agents by suppression of movement to surgical incision. Comparison of the findings of the two studies reveals an interesting difference in the plasma fentanyl concentrations required for equivalent levels of movement suppression when combined with either nitrous oxide or isoflurane.

Glass et al.5 demonstrated that in the presence of 70% inhaled nitrous oxide, the minimal steady-state plasma concentration of fentanyl required to prevent 50% of patients from moving in response to skin incision was 3.26 ng/ml (67% fiducial limits 2.4–4.1 ng/ml). Assuming that 70% nitrous oxide was administered for at least 10 min before the response to incision was assessed, its end-tidal concentration should have reached at least 95% of inspired concentration, i.e., 66.5%. Assuming the widely accepted MAC value for nitrous oxide of 105%, its contribution to suppression of the movement response to incision should therefore have been approximately 66.5/105, equivalent to 0.63 MAC. It is generally recognized that in terms of their contribution to standard MAC, the end-tidal concentrations of nitrous oxide and the common volatile agents are directly additive. This certainly has been shown for nitrous oxide and isoflurane,8 and thus the end-tidal nitrous oxide concentration of 66.5% would be expected to be equivalent to 0.63 MAC isoflurane.

The mean ages of the patients in the two studies were comparable (33 and 36 yr), and the MAC of isoflurane without fentanyl in the

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