CORRESPONDENCE

SPINAL ANAESTHESIA IN OBSTETRICS

Sir,—In his review of spinal anaesthesia in obstetrics [1], Dr Kestin kindly attributed to me the first report of the combined spinal–extradural technique for Caesarean section. I have now performed well over 1000 sections using this approach and, for the reasons outlined by Dr Kestin, I believe that it provides consistently better anaesthesia and more flexibility than each technique used alone. Since first using the combined approach 15 years ago, for example, I have not yet found it necessary to resort to general anaesthesia.

Dr Kestin also referred to the absence of spinal headache that was reported in my previous communication [2]. Despite routine daily follow up until discharge from hospital, no patient has yet developed a dural puncture headache following this combined anaesthetic. I can assure you that no-one has been more surprised about this than I! Even using a 26-gauge needle, I would have anticipated a spinal headache to have occurred by now. The only explanation I can offer is that by using the extradural catheter for postoperative analgesia (pethidine 50 mg in saline 10 ml given on a patient-demand basis for up to 48 h after surgery) we are unwittingly providing prophylaxis against the development of spinal headache.

As Dr Kestin (and also Dr Carrie in another recent review [3]) has stated, a combined “needle-through-needle” technique seems to have become more popular than using two separate interspaces. The former approach obviously appears more attractive because the patient requires only one injection. I am concerned, however, that damage to the spinal needle tip might occur during its passage through the extradural needle and that this, combined with a directional change of the needle just before entering the dura, could traumatize the dura—and so increase the likelihood of spinal headache. I am even more concerned about any delay which might occur because of difficulty in threading the extradural catheter. In my view, after the spinal anaesthetic has been administered, the patient demands undivided attention and reassurance. For instance, the onset of spinal anaesthesia often leads to patient anxiety, and demands undivided attention and reassurance. For instance, after the spinal anaesthetic has been administered, the patient may be alarmed for the patient to develop a unilateral block, but she should be protected from developing severe hypotension by lying in the full lateral position. There are potentially much greater hazards in this event if the technique is being performed with the patient sitting upright.

If the extradural catheter is inserted first and a spinal injection has been given is a concern. For this reason, I think combined techniques using a “needle-through-needle” method should be performed only with the patient lying on her side. It may be alarming for the patient to develop a unilateral block, but she should be protected from developing severe hypotension by lying in the full lateral position. There are potentially much greater hazards in this event if the technique is being performed with the patient sitting upright.

If the extradural catheter is inserted first and a spinal injection performed at a different interspace, as suggested by Dr Brownridge, then there is a theoretical possibility of damaging the extradural catheter with the spinal needle. The magnitude of this risk is unknown, but it seems unlikely. There are Tuohy needles with an end-hole for the spinal needle and the side hole for the extradural catheter (Sterima SA, Zonnekestraat 13, 8620 Kortrijk, Belgium).

Difficulty threading the extradural catheter after the spinal injection has been given is a concern. For this reason, I think combined techniques using a “needle-through-needle” method should be performed only with the patient lying on her side. It may be alarming for the patient to develop a unilateral block, but she should be protected from developing severe hypotension by lying in the full lateral position. There are potentially much greater hazards in this event if the technique is being performed with the patient sitting upright.

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I. G. KESTIN
Plymouth

REFERENCES

FRESH GAS REQUIREMENT OF THE BAIN SYSTEM

Sir,—Dr Miller’s article on rebreathing with various anaesthetic systems described an ingenious lung model for calculating the degree of rebreathing of alveolar gas into the alveolar compartment [1]. An important result from this study, which appears to have been overlooked, is that rebreathing with the Bain system was prevented by a fresh gas flow less than twice the minute volume (V̇e). This agrees with earlier work by Meakin and Coates in anaesthetized children [2], but is contrary to a previous assertion by Miller that at least 2V̇e is necessary for adults and 3V̇e for children [3].

G. MEAKIN
Manchester
Sir.—Dr Meakin's astute observations that rebreathing in the Bain system, detected by capnography, at a level less than two times the minute ventilation (2\(V_e\)) could be claimed as rebreathing with a magnitude which may be of clinical importance. The actual curves, using the more sensitive and accurate method to discern rebreathing, showed that deviation from the maximum effective alveolar ventilation (\(V_{AE}/V_e\)) line began at 2\(V_e\). Why, then, should I have said in another earlier report that the recommended fresh gas flow (\(V_F\)) for children should be 3\(V_e\)? This recommendation is based upon the difference in the magnitude of variability of metabolic rate between children and adults.

In the Magill or any other afferent reservoir system, the recommended \(V_F\) is equal to \(V_e\) and is greater than the point at which onset of rebreathing occurs (approximately 0.6–0.7 of the \(V_{AE}\) [1, 2]). This is to allow for changes in carbon dioxide production (\(V_{CO_2}\)) during anaesthesia. In the Bain system, the recommended \(V_F\) should be greater than this point, which may become clinically significant only when \(V_F\) is less than 2\(V_e\). In children, the potential changes in \(V_{CO_2}\) are greater than in adults and it is therefore for practical reasons that I made the recommendation that \(V_F\) should be 3\(V_e\) for all afferent reservoir or T systems. If one were monitoring the resting minute ventilation in children (and not many of us do), then I must agree that \(V_F\) equal to 2\(V_e\) would indeed be acceptable.

D. MILLER
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REFERENCES

PICOLAX BOWEL PREPARATION

Sir,—I was interested to read the abstract of the presentation to the Anaesthetic Research Society on the effects of Picolax on body weight and intravascular fluid [1]. The findings might account for the observation of Campbell and colleagues of the increased requirement for i.v. fluids during surgery for intestinal resection [2].

My experience in anaesthetizing patients for colon resection after Picolax bowel preparation is that these patients often need large volumes of i.v. fluids (up to 4 litre) to stabilize the arterial pressure after induction of anaesthesia. I have also heard anecdotal stories of collapse after bowel preparation with Picolax before radiological examination, and of one patient who had a cardiac arrest. The manufacturers inform me that their packaging insert includes the instruction to encourage oral fluid intake when Picolax is used, but I found that many nurses were not aware of this, and that individual sachets of Picolax do not include this advice.

It is important that patients who are given Picolax are also given the instruction to drink quite large quantities of fluid. In a letter from the manufacturers, they describe a study in which patients drank 139 ml of water every 1 h for 12 h during treatment with Picolax, and serum sodium, potassium and osmolality results suggested that this produced only mild overhydration. If oral intake is impossible, fluids should be infused i.v.

M. E. DOIDSON
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REFERENCES

INTERFERENCE WITH PACEMAKER FUNCTION

Sir,—The recent case report by Dr Finfer [1], illustrates one of the inherent problems of a unipolar pacing system, that of inhibition by skeletal muscle myopotentials. Suxamethonium-induced muscle fasciculations were thought to be responsible for pacemaker failure. It has been suggested that a defasciculating dose of a non-depolarizing neuromuscular blocker should be used or suxamethonium avoided [2]. In addition, thiopentone has been documented to decrease pacemaker threshold [3], increasing the risk of ventricular arrhythmias [4].

Permanent pacemakers with bipolar electrodes are less sensitive to interference [5]. This has led to their increased use over recent years. During the 12-month period April 1990 to March 1991, 16 unipolar and 402 (96%) bipolar pacemakers were inserted at our hospital. Wider adoption of this practice will help reduce the problems encountered during anaesthesia.

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REFERENCES