degree this difficulty occurs with a distance of ≤ 6.0 cm. In order to evaluate objectively, it is necessary to conduct a large-scale study.

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Combined subarachnoid and epidural block for Caesarean section

To the Editor:

I would be grateful for the use of your columns to comment on the letter from Dr. Rawal.¹ The single-space double-needle technique has been described previously^{2,3} and I would like to mention our modification of the technique.⁴ This involves clamping the spinal needle with a light-weight artery clip at the point where it enters the Tuohy needle. This avoids the difficulty commonly encountered with a long flexible needle, whereby when attempting to firmly attach a syringe with a leak-proof seal and then inject, the needle may be advanced through the ventral surface of the dura, or passed out through the original dorsal puncture. In either case, the local anaesthetic solution is deposited extradurally, resulting in failure of the technique.

The dose and drug recommended by Rawal was 1.5 to 2.0 ml of hyperbaric 0.5 per cent bupivacaine. In their 24 cases they noted that the block rose to T₄ with the subarachnoid injection in only 25 per cent of the patients.

We use 1.5 to 1.6 ml of 0.5 per cent isobaric (slightly hypobaric) bupivacaine and, in a series of over 400

patients, the subarachnoid injection consistently reached T₂ to T₄. In less than five per cent of patients does the epidural cannula need to be used to bring the sensory block up to a level suitable for surgery. This has the advantage of reliably quick onset, because the patient can be moved into theatre immediately after the block is performed and preparation for operation commenced. We now, except in the most life-threatening emergencies, use this technique for emergency Caesarean section, as the patient, with a skilled team, can be in the operating room with a block at T₅ and undergoing skin preparation, five minutes after starting the procedure.

At the beginning of our series, we noted a similar incidence of hypotension to that noted by Rawal, i.e., about 10 to 15 per cent. We now administer 9 mg ephedrine IV immediately after the epidural cannula is inserted, plus supplementary injections of 6 mg if the systolic blood pressure falls below 110, following a "pre-load" of two litres of lactated Ringer's solution. The incidence of hypotension, defined as systolic blood pressure below 100, is now less than five per cent.

I would agree with Dr. Rawal about the incidence of headache. We had two spinal headaches in the first 400 patients. Whether or not this is attributable to extradural opiates is a matter of controversy. We use 0.3 mg buprenorphine in 10 ml 0.25 per cent bupivacaine extradurally and the patients are allowed to mobilize as soon as they have sufficient motor power.

A final point to make is that although our sensory block is usually at a high thoracic level, we have had no respiratory problems from intercostal weakness, suggesting again the beneficial effect of 0.5 per cent isobaric bupivacaine in producing a differential marked sensory block with little motor block.

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