Muscle Relaxants and Bier's Block

Sir

We are grateful for the opportunity to reply to your correspondent.

If no less an authority than Professor J. M. Hunter can write a sentence beginning 'With the advent of the two new non-depolarizing muscle relaxants, atracurium and vecuronium . . .' (Hunter, 1987), we feel we may use the same expression.

Ethical committee approval for the addition of atracurium to Bier's blocks was obtained immediately after the studies on the volunteers (two of whom were authors of the paper), and informed consent was obtained from all patients. The patient undergoing excision of radial head under Bier's block with sedation made no complaints of either the tourniquet or the stimulator. In our experience the cuff is more painful than the nerve stimulator.

With regard to the standard dose of atracurium employed, one must remember that it is common practice among anaesthetists to use a standard dose of a non-depolarizing neuromuscular junction blocking agent to prevent muscle pains after the administration of suxamethonium ('pre-curarization'). Atracurium has been investigated for this purpose (Budd *et al.*, 1985). In that paper the authors mentioned 'the problem of administering variable small doses of drugs accurately', and decided to use two fixed doses of atracurium (2.5 mg and 5 mg) in patients whose weights ranged from less than 50 kg to more than 70 kg. Out of 50 patients given atracurium, three developed 'clinically significant neuromuscular blockade during the pre-treatment'. All three were in the group given 5 mg. Our dose of 2 mg proved very effective in the pilot study, and was less than the lower dose given systemically (Budd *et al.*, 1985). The fact that the atracurium continued to cause paralysis long after deflation of the cuff in the patient undergoing excision of radial head is fascinating in itself, but irrelevant in the context of overall patient safety, as there was no suggestion of systemic toxicity.

Regarding the absence of data concerning weight, age and angle of fracture—this data was included in tables in the initial paper, however, we were advised against their inclusion, the argument being that too much data was being presented.

Atracurium is presented as 10 mg/ml and in our study one millilitre was diluted to 10 ml, this giving a concentration of 1 mg per ml. The correspondent refers to the morbidity and mortality of Bier's block, whilst this is true when bupivacaine was used, we are unaware of any similar problems with prilocaine.

In our paper we were not recommending the use of muscle relaxant in all patients, but a selected sub-group.

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REFERENCES

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