Correspondence

Respiratory depression and spinal opioids

To the Editor:

We would like to congratulate Etches *et al.* for their review article on respiratory depression and spinal opioids.[1]

There are several comments we would like to make regarding this paper and also about the use of intraspinal opioids in general. The first recorded use of intraspinal opioids was actually reported from Japan in 1901.[2] An injection of 10 mg of Morphine combined with 20 mg of Eucaine, a local anaesthetic, was made into the subarachnoid space of two patients with uncontrollable back pain. Both obtained excellent pain relief lasting several days.

We agree with the authors that the value of spinal opioids in the management of postoperative pain is unproven. However, as we all know, the present methods available to us for the provision of postoperative pain relief leave a lot to be desired.[3] Pain following surgery is usually worse in the first 24 hours. It is during this period that the single intrathecal dose of an opiate would be most useful. At this hospital, we are at present undertaking a small trial using a single dose of intrathecal diamorphine (2.5 mg) given at the start of surgery in patients undergoing major urological or vascular surgery. All the patients are monitored in ITU for up to 36 hours. The results in six patients (two urological and four vascular) so far studied have been very encouraging.

The tracheas of the six patients studied in this small pilot trial were all extubated immediately after completion of the surgery. None of them was given systemic opiates preoperatively or intraoperatively. None of the patients complained of itching or headache. However, as their bladders were catheterised, it is difficult to say whether or not they would have had urinary retention. None of the patients required any form of analgesia in the first 24 hours. (Postoperatively they were charted down to receive codeine phosphate 30–60 mg intramuscularly four hourly on a PRN basis.)

We are now undertaking a more formal trial regarding the use of intrathecal diamorphine, after obtaining these very encouraging results.

In the ideal world, if all postoperative patients could be monitored in special postoperative wards by trained nursing staff, the use of intraspinal opioids could become more widespread.

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REFERENCES

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2 *Matsuki A.* Nothing new under the sun – a Japanese pioneer in the clinical use of intrathecal morphine (Editorial). Anesthesiology 1983:58: 289–90.

3 *Benedetti C, Bonica JJ, Belluci G.* Pathophysiology and therapy of postoperative pain: a review. In: Benedetti C, Chapman CR, Morica A Eds. Advances in Pain Research and Therapy, Vol. 7, Recent Advances in the Management of Pain. New York, Raven Press, 1984: 373–407.

REPLY

We would like to thank Doctors Ravalia and Robinson for their interest in our article, and for drawing our attention to the much earlier use of intrathecal morphine. We certainly agree with the statement that the present management of postoperative pain is imperfect, and we do not suggest the avoidance of spinal opioids; in many patients they will provide excellent analgesia. However, we feel that before these techniques are endorsed as a "gold standard" for analgesia, we first need to see good, controlled, blinded studies which compare equianalgesic doses of the opioid in question administered intravenously, epidurally, or intrathecally. At present there are few studies[1] that indicate that the approaches differ in the degree of sedation or respiratory depression produced if equivalent analgesia is obtained.

The use of intrathecal diamorphine poses some interesting pharmacokinetic questions. Diamorphine in solution at 37° C deacetylates spontaneously to 6-acetylmorphine and morphine, and in brain homogenates diamorphine may be completely converted to its metabolites within 20 minutes. In addition, diamorphine itself may be inactive at opioid receptors, and any analgesic activity may be due to its primary metabolites.[2] With these points in mind, it is unclear how the effects of intrathecal diamorphine will differ from those of the same dose of intrathecal morphine.

Finally, we would like to caution practioners who are considering the epidural or intrathecal use of drugs not yet approved for such routes of administration. Before using such drugs clinically it is the practitioner's responsibility to ensure that animal toxicity studies have been completed with a favourable outcome, and that approval from the appropriate government agency (in Canada, the Health Protection Branch) has been obtained.