CORRESPONDENCE

SPREAD OF EXTRADURAL ANALGESIA FOLLOWING CAUDAL INJECTION IN CHILDREN

Sir,—I read with interest the paper by Schulte-Steinberg and Rahlfs (1977), as I did their earlier paper on this subject in 1970. As I have more experience in this subject now than in 1970 (700-800 caudal blocks in children aged 10 yr and less), I should like to say that I cannot see the relevance of this work to clinical practice. If a general anaesthetic is to be administered throughout surgery, why give a caudal block at all? I have found the principal advantages of caudal analgesia in children to be ease of administration, especially in very small children or for surgery in the prone position when general anaesthesia would require tracheal intubation, and the calm, pain-free emergence which allows analgesics to be given orally before pain has been felt. These advantages will be absent or modified considerably by concurrent general anaesthesia.

I, who use unsupplemented caudal anaesthesia for my children, soon came to the conclusion that pinprick testing was clinically valueless (McGown, 1972). To test skin anaesthesia, I found it necessary to nip the skin with artery forceps (or, later, between the finger nails). After reading the 1970 paper of Drs Shulte-Steinberg and Rahlfs, I compared this with pinprick testing. Like the authors, I find it necessary to render nearly all my patients unconscious for a brief period by either i.v. thiopentone or brief inhalation anaesthesia for the duration of the caudal injection. Testing was performed 10 min after this, and pinprick gave a level 2-8 segments higher than skin nipping. This unreliability was confirmed by Peebles and Slack (1972). At the end of any operation under general anaesthesia, however light, a child must be assumed to be even less responsive than my patients, and pinprick testing even less reliable. That two or three observers were needed to verify the level suggests this, since with skin nipping, the level of anaesthesia is very clear-cut.

I also take issue with the authors' statement that age is a more reliable determinant of dosage than is body weight. This may or may not be so for a uniform, healthy, well-nourished population, but my experience with African children, among whom a 6-yr-old may weigh anything from 9 to 30 kg, suggests just the opposite. Analysing dose/weight and dose per week of age against segments blocked, among 54 infants less than 1 yr (in whom age should have been known most accurately) dose/weight gave a correlation coefficient of 0.636 while that of dose/age was only 0.116.

Finally, the suggestion that the intervertebral foramina are more patent in the very young, allowing more solution to escape, does not stand up to examination. The enclosed radiograph is of a 23-yr-old male patient, taken in the prone position 10 s after the completion of injection of 20 ml of undiluted 70% iodothalamate (Conray 280). It will be seen that the contrast is already escaping freely through the sacral and intervertebral foramina. It is for this reason that caudal anaesthesia, although its spread is more predictable in children, can never be as predictable as lumbar extradural anaesthesia, nor can one use such small doses per spinal segment.

The doses indicated by the regression line of Drs Shulte-Steinberg and Rahlfs, even at the upper confidence limit, are about 4½ times smaller than those I would recommend.

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REFERENCES


Sir,—Thank you for the opportunity of replying to Dr McGown's interesting letter.

The argument "If a general anaesthetic is to be administered throughout surgery; why give a caudal at all?" was

FIG. 1. Radiograph of a 23-yr-old male in the prone position 10 s after the sacral injection of 70% iodothalamate 20 ml (Conray 280). Note the spilling through the sacral and intervertebral foramina.