

paravertebral block has been shown to reduce significantly postoperative decline in lung function at 24 hours, improve its subsequent restoration, and reduce pain scores and opiate requirements.⁵ In 160 patients who have had this form of pain relief after thoracotomy, we have seen no instances of clinical toxicity to bupivacaine, infusing 0.5 per cent plain bupivacaine at $0.5 \text{ mg} \cdot \text{kg}^{-1} \cdot \text{h}^{-1}$ for four days.

There appears to be no advantage in leaving a catheter in the pleural cavity at thoracotomy when it can so easily be placed in the paravertebral space.

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REPLY

I would like to thank Mr. Sabanathan for his interesting comments. I applaud their ingenuity in the use of yet another catheter technique to provide postoperative anaesthesia on patients having undergone thoracotomy. Mr. Sabanathan makes no comment as to whether or not this technique can be used for analgesia for abdominal incisions but one would intuitively think so.

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Should vecuronium be used in renal failure?

To the Editor:

We read with interest the paper by Starsnic *et al.* (*Can J Anaesth*, 1989; 36: 35-9) on the use of vecuronium in renal transplant patients. Their conclusion is that vecuronium may accumulate in the renal transplant patient. Perhaps it is timely for us to stand back and examine the use of vecuronium in patients with impaired renal function. There are a number of papers which have shown little difference between the pharmacokinetics of vecuronium in patients with and without renal failure. These papers have, however, examined single bolus doses or very short infusions (a few minutes only).^{1,2} In situations where repeated doses have been administered or a continuous infusion has been used, various extents of prolonged paralysis, up to 90 hours in one report,³ have been noted.³⁻⁶ The weight of evidence seems now to be such that there is little doubt about the tendency for vecuronium to accumulate in patients with renal failure. It must surely therefore be appropriate now to make the recommendations that caution be exercised in the use of vecuronium in patients with impaired renal function and that when it is used, neuromuscular function should be carefully monitored.

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Epidural air-filled bubbles and unblocked segments

To the Editor:

Dalens *et al.*¹ pointed out that epidural air-filled bubbles can cause unblocked segments during epidural anaesthesia. We administered epidural anaesthesia to a 16-year-old primigravid patient for pain relief in labour, after which she experienced a persistent unblocked segment in the right groin. This was believed to be due to an air-filled bubble in the epidural space in the area of the nerve root supplying the right groin.

Loss of resistance to air was used to identify the epidural space after needle placement in the second lumbar interspace and a translucent multi-orificed catheter was inserted 4 cm into this space. Neither cerebrospinal fluid (CSF) nor blood could be aspirated from the catheter. A test dose of 2 ml lidocaine two per cent with 1/200,000 adrenaline was injected and was negative for catheter misplacement. Good obstetrical analgesia was achieved after 10 ml of 0.25 per cent bupivacaine was injected. A segment in the right groin, however, remained unblocked. Top-ups were requested on two later occasions and at each biochemically proven CSF could be aspirated from the catheter. On each occasion 8 ml bupivacaine 0.25 per cent fractionated in 2 ml increments at five-minute intervals, was required to produce satisfactory obstetrical analgesia. The area in the right groin remained unblocked throughout. At no stage after the initial placement of the Tuohy needle was air injected into the epidural space.

Following the delivery and informed consent from the mother, 12 ml of iopaminol ($200 \text{ mg} \cdot \text{ml}^{-1}$) was injected via the epidural catheter under fluoroscopic control. A radiograph of the spine (Figures 1a and 1b) revealed a normal peridurogram with a large air-filled bubble overlying the T₁₂-L₁ region on the right side. There was no evidence of subarachnoid spread of contrast medium.

We believe that the air-filled bubble in the T₁₂-L₁ region was probably the cause of the unblocked segment in the corresponding dermatome in the groin. It can further be postulated that the normal peridurogram as well as the unexpected behaviour of the block following CSF aspiration, was due to the distal orifice of the multi-orificed catheter migrating into the subarachnoid space

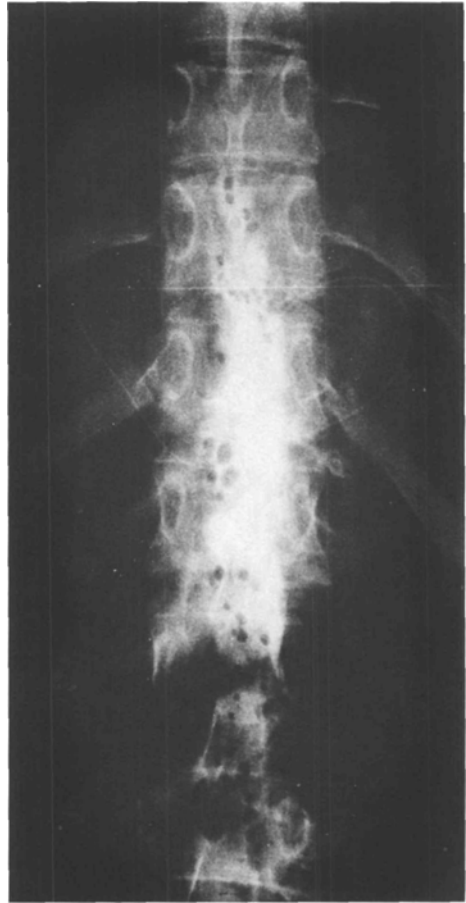


FIGURE 1a

while the proximal two orifices remained extradurally (Figure 2).

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