With the discovery of opioid receptors in the spinal cord [1] and of the undoubted efficacy of opioids given by the extradural route [2], this technique of analgesia rapidly became popular and obstetric anaesthetists were not slow to adopt the method. During the early days we had hoped optimistically that this route of administration would provide analgesia which was complete, long lasting and free from the side effects produced by systemic opioids and extradural local anaesthetics. First began the search for the ideal drug: when used in obstetrics, morphine was soon found to be unique in its capacity to produce more side effects than analgesia [3]. Although effective in the management of chronic pain [2], this polar opioid penetrated meninges too slowly to be of value via the extradural route for labour. Because of the large doses that are necessary, pethidine owes part of its action to a local anaesthetic effect, and it has a shorter duration of action when given extradurally than i.m. [4, 5]. In the U.S.A., butorphanol has been given extradurally, and it produces profound somnolence [6, 7]. In labour, only fentanyl [8-13] and sufentanil [14-16], when added to bupivacaine, have been shown to produce analgesia that is quicker in onset, more intense and longer lasting than bupivacaine alone. However, in general fentanyl and sufentanil are unreliable when used alone [17] and no better than bupivacaine alone [18].

It is not surprising that the combination of fentanyl and bupivacaine produces greater analgesia than the same dose of each agent used independently. It is unnecessary to invoke potentiation to explain this finding. If fentanyl is added to a dose of bupivacaine expected to be effective alone, not only are the subjective benefits of each agent likely to be less, but this approach cannot avoid local anaesthetic induced side effects of weakness, hypotension and poor expulsive efforts. Moreover, with the passage of time it has become clear that extradural opioids have individual side effects, although the only significant one in labour is pruritis, which is a consistent observation. Some anaesthetists have obtained good results by adding fentanyl 80-100 μg to a bupivacaine test dose of 10-12 mg [8-10], while others, whilst exploring various combinations, have found an optimum dose of fentanyl 50 μg in combination with bupivacaine 25 mg [11, 12]. Even with the optimal regimens, the benefits of the combination are found to be only marginal in comparison with the individual agents, and the duration of action is not as great as had been hoped.

Continuous extradural infusions avoid inadequate duration of action, and the peaks of side effects and troughs of analgesia, which occur with intermittent bolus injections. However, a recurring problem with this technique is that either the infusion rate is too slow and top-ups, albeit fewer, are required to maintain analgesia, or the infusion rate is too rapid, with an increase in total dose of local anaesthetic resulting in increase in the height of the block; motor block, hypotension, systemic toxicity and instrumental delivery are also more likely to occur. This may be obviated by avoiding the use of a fixed infusion regimen and training midwives to use regular dermatome testing and to modify the infusion rate according to the needs of each mother [19]. Another strategy is to add fentanyl to the infusion. Skerman and colleagues [20] examined the effect of a bupivacaine bolus followed by infusion of 0.125 % at 10 ml h⁻¹ with and without fentanyl, while Chestnut and colleagues [21] halved the dose of bupivacaine when fentanyl was added. More recently, D’Athis and colleagues [22] compared an intermittent dose regimen with that of a bolus followed by infusion of 3 ml h⁻¹ of a combination of 0.25 % bupivacaine with fentanyl 5 μg ml⁻¹. All these studies found that the infusion of the combination was the more reliable treatment. In the present issue of the Journal, Dr Jones and her colleagues [23] have
compared a fixed dose regimen of a bupivacaine bolus and infusion, with and without fentanyl. They used a generous test dose of lignocaine and, following the loading dose of bupivacaine, gave supplements in order to achieve block of the T10 dermatome irrespective of the mother’s symptoms. As would be expected, fewer supplements were needed in the group receiving fentanyl with bupivacaine; with the high catheter placement used, perineal pain was a common reason for administration of supplements. In common with other studies [8-10], it was found that neither hypotension nor abnormal deliveries were avoided by the use of fentanyl, although with the fairly large dose of bupivacaine used by this Scottish group, this was perhaps not surprising.

What, then, is the current status of extradural opioid analgesia in labour? Undoubtedly, it can reduce the dose requirements for bupivacaine and enhance analgesia from an extradural infusion. However, hypotension and instrumental deliveries are not avoided, while a new side-effect, pruritis, is introduced. The use of an opioid can only be advantageous if it allows the use of minimal doses (10-12 mg) of bupivacaine; even so, it is questionable if the gain in enhanced analgesia outweighs the inconvenience of using a controlled drug. However, there are two distinct advantages: improved management of perineal pain [17], where an opioid in the lumbar region is well placed to gain access to its site of action in the spinal cord, whilst a dose of local anaesthetic sufficient to reach the sacral roots is likely to produce profound motor block of lumbar roots; and effective management of that well-known problem of obstetric extradural block, shivering [24, 25].

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