Combined spinal and epidural anaesthesia after a failed epidural

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A 27-year-old woman had had a lumbar epidural inserted 8 hours previously during labour. Epidural top-ups had given her some relief (0.125% bupivacaine with 2 μg/ml fentanyl initially and later 0.25% bupivacaine) but she continued to use entonox. The baby was occipitotransverse. Since the cervix was fully dilated and there was no fetal distress, the obstetrician wanted to perform a trial of forceps and proceed to a caesarean section if that was unsuccessful.

The epidural was topped up with 20 ml of 50/50 mix of 2% lidocaine and 0.5% bupivacaine over a 10-minute period and the patient was transferred to theatre. There was no evidence of a block on testing with a cold spray and pin prick 20 minutes later. The epidural catheter was in-situ. The patient was experiencing strong contraction pains.

The following options were considered:

1. Pudendal nerve block
2. Sedation
3. General anaesthesia
4. Spinal subarachnoid block
5. Epidural anaesthesia
6. Combined spinal and epidural anaesthesia.

Neither the obstetrician nor the anaesthetist had experience of performing a pudendal nerve block. Moreover, the maximum local anaesthetic dose would be exceeded by further use of local anaesthetics. Use of intravenous sedation is unwise in a pregnant labouring patient. A general anaesthetic was not the first choice as the patient was going to have a trial of forceps in the first instance. If a new epidural catheter is sited, establishing a T4 block will not only take time but also need local anaesthetic doses that will exceed the maximum safe dose. Hence options 1, 2, 3 and 5 were rejected.

Spinal anaesthesia administered after a recent epidural top-up can result in a 'high block' because of a squeeze effect of the local anaesthetic volume that may be present in the epidural space at the subarachnoid space (Mets et al, 1993). Moreover the epidural local anaesthetic can enter the subarachnoid space through the hole in the dura and cause a high block (Suzuki et al, 1995). If a low volume of local anaesthetic is used for the spinal block, then there is always the possibility of a low block which is inadequate for a caesarean section. Hence option 4 was discarded.

A combined spinal and epidural anaesthetic has several advantages in this situation. The spinal anaesthetic should provide quick and reliable analgesia with a small dose of local anaesthetic. Using a small volume in the spinal intrathecal space can avoid a high block. If the block height is inadequate for a caesarean section, small titrated volumes of normal saline or local anaesthetic administered through the epidural catheter can always increase it (Blumgart et al, 1992). Hence option 6 was chosen.

The epidural catheter was removed and, using an aseptic technique, the L2/L3 epidural space was identified with a 16g Tuohy needle by loss of resistance to saline. A 27g pencil point needle was passed through the Tuohy needle and into the subarachnoid space, and then 1.8 ml of 0.5% hyperbaric bupivacaine and 20 μg of fentanyl (total of 2.2 ml) were injected into the CSF. The spinal needle was removed and 4 cm of the epidural catheter were left in the epidural space. The patient was then positioned supine with a lateral tilt. Cold spray testing found the block to be T4–S5 bilaterally within 3 minutes. The block did not extend thereafter.

The trial of forceps failed and the patient needed a caesarean section. She delivered a healthy male baby. There was no complaint of pain, discomfort, dyspnoea, light-headedness or nausea. Blood pressure remained stable and there was no need for ephedrine. The patient was monitored for any high block for a few hours postoperatively. The epidural catheter was used to administer diamorphine for postoperative analgesia once the spinal analgesia had wore off. The patient, obstetrician and anaesthetist were very pleased with the outcome. HM

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