

Letter to the Editor:
**LOW SPINAL ANAESTHESIA FOR
 CAESAREAN SECTION**

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Sir,

I read with interest the two issues of Update in Anaesthesia that covered anaesthetic management of Caesarian section (No 2, 1992) and spinal anaesthesia (No 3, 1993). I have developed a technique of "low spinal anaesthesia" for routine use in caesarean section. A prospective evaluation of 100 consecutive cases has been published⁽¹⁾, and since then many hundreds of Caesarian sections have been done at this hospital using the technique with no adverse effects.

This procedure was adopted when both ventilators in our hospital were unserviceable at the same time; none of the doctors had any experience with spinal anaesthesia and I was fearful of using the full spinal described in Primary Anaesthesia⁽²⁾. A saddle block with infiltration of the abdominal wall proved less than satisfactory when teaching new doctors to perform Caesarian sections. An increase in the volume of anaesthetic given to produce a saddle block was therefore tried, to produce a "low spinal". This seemed to provide satisfactory surgical conditions and has proved to be a safe anaesthetic with minimal risk of hypotension and high spinal block.

The technique is as follows. A pre-load with 500-1000ml of a crystalloid is completed in theatre and good venous access ensured (sodium citrate and metoclopramide is given in the labour ward). A lumbar puncture (L3-4) is performed in the sitting position and hyperbaric bupivacaine 1.5ml is injected slowly when free flow of cerebrospinal fluid is obtained (plain bupivacaine is used if necessary). The patient remains seated for 5 minutes with a nurse close by. She then lies flat with a left lateral tilt and a slight head-up tilt. Her head is placed on a pillow. Surgery proceeds as usual.

In only 3 of 100 consecutive cases was the anaesthetic judged inadequate by the surgeon. Patient tolerance

(as judged by facial expression, verbal complaint etc) was fine in 87. In 11 women pethidine 50mg was given during the procedure for discomfort and ketamine 0.5mg/kg was given in 2 for incomplete block. In no cases was the procedure abandoned. No cases of total spinal were seen and ephedrine was not needed to counteract hypotension.

In 59 women the systolic blood pressure (SBP) dropped by an average of 16%. In only 5 women did the SBP drop by 39mmHg or more and 2 of these were associated with brisk uterine haemorrhage. All responded to intravenous fluids. Having performed several hundred caesarian sections under general anaesthetic I was struck by how good the fetal condition remained under spinal. Of the 108 babies delivered at the 100 sections, 91% had an Apgar score of 10 at birth, 93% had an Apgar score of 10 at 1 minute, and all but one had an Apgar of 10 at 2 minutes.

Patients were highly satisfied with the procedure; 99% said they would have a spinal again if necessary. Of the 42 who had had a previous Caesarean section under general anaesthetic 38 said they preferred spinal; mainly because they remained awake but pain-free, were able to see the baby immediately and because the postoperative course was more pleasant.

Since then hundreds of cases have been done at this hospital using this technique. There have been no cases of total spinal or significant hypotension, and we use it for all Caesareans including fetal distress and cord prolapse. The only contraindication is severe haemorrhage.

This technique is simple and effective, and thus can be recommended to colleagues working in resource-poor settings. While no anaesthetic is ever completely safe, some are safer than others. Having done many hundred caesarian sections using both techniques (often alone), there is no doubt that low spinal is best for the mother, baby and doctor in almost all circumstances.

1. **Wilkinson D.** Low spinal anaesthesia for caesarian section S. Afr. Fam. Pract. 1993; 14:7-10
2. **Primary Anaesthesia.** Ed. **M. King** Oxford University Press, Oxford, UK.

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