

Title : THE EFFECT OF LATERAL POSITION AND VOLUME ON THE SPREAD OF EPIDURAL ANESTHESIA IN THE PARTURIENT

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Introduction. It is now accepted that the parturient should not be supine because of the risk of aorto-caval compression. This risk is increased after administration of epidural anesthesia. We wished to determine the effects of the lateral position and the volume of drug injected on the efficacy and spread of epidural anesthesia during labour.

Methods. All patients were ASA physical status I and in the first stage of labour. Consent was obtained for anesthesia and subsequent examinations. Patients were placed on their sides and epidural anesthesia was performed using a 16-gauge Tuohy needle at the L3-4 interspace. A catheter was inserted 3-4 cm into the epidural space after injection of the drug.

Ninety three patients were studied and were divided into 4 Groups according to the dose given and the position maintained after injection. The doses used were 12 ml bupivacaine 0.25%, and 6 ml bupivacaine 0.50%. The patients were kept in the lateral position on the same side in which the block was performed (Groups I and III) or turned to the opposite side after completion of the epidural injection (Groups II and IV). This is summarized in Table I.

Table I

Group I: 12 ml bupivacaine 0.25% -Not turned
Group II: 12 ml bupivacaine 0.25% -Turned
Group III: 6 ml bupivacaine 0.50%-Not turned
Group IV: 6 ml bupivacaine 0.50% - Turned

Fifteen to 20 minutes after injection, the analgesia was assessed and the sensory levels were noted. All assessments were performed by a trained observer who did not know to what Group the patient was allocated.

Analgesia was assessed by the mother using a 5 point scale where 4+ represents complete pain relief, 3+ some pain but patient satisfied, 2+ definitely helped or not bad, 1+ hardly any relief and 0 is no pain relief.¹

The upper and lower dermatome levels of anesthesia² were measured by noting the loss of sharpness to pinprick (#22 s.w.g.).

After the assessment, supplementary doses of local anesthetic were given as requested by the patient.

Results. The 4 Groups were comparable as to parity, height, weight and cervical dilatation when the epidural was initiated.

The results of analgesia scoring are shown in Table II. Analgesia scores were determined for both the upper and lower sides of the body. The terms "upper" and "lower" sides refer to body position at the time of assessment.

Table II

Table II	PERCENTAGE OF PATIENTS		
	Analgesia scores	Lower side	Upper side
Group I (n=29)	4+	90	59
	3+	3	34
	0-2+	7	7
Group II (n=33)	4+	78	85
	3+	12	9
	0-2+	10	6
Group III (n=15)	4+	67	46
	4+	26	21
	0-2+	7	33
Group IV (n=16)	4+	50	50
	3+	25	19
	0-2+	25	31

Discussion. The volume of drug injected into the epidural space plays a role in determining patient satisfaction and the number of segments blocked. Groups I and II received the same mass (ie 30 mg bupivacaine) as Groups III and IV, but there was a much larger percentage of satisfied patients in Groups I and II. The number of segments blocked was greater in the Groups receiving a larger volume, but this did not reach statistical significance. There was an unacceptably large percentage of patients (35%) in Groups III and IV who requested supplementary doses of analgesia. Only 6% in Groups I and II requested supplementary doses.

Ninety-four percent of patients receiving 12 ml bupivacaine 0.25% were satisfied (3+ and 4+) with their pain relief whether or not they were turned. However, turning the patient after epidural blockade resulted in a larger percentage of patients who were completely satisfied (4+).

In conclusion, maintenance of the lateral position after epidural anesthesia is compatible with satisfactory analgesia for labour. Twelve ml bupivacaine 0.25% provides better analgesia than 6 ml bupivacaine 0.50% although the same mass (30mg) was injected. The quality of analgesia is improved by turning patients to the contralateral position after injection of 12 ml bupivacaine 0.25%.

References.

1. Steffenson J, -Inhalation Analgesia - Nitrous Oxide, Methoxyflurane, Obstetrical Anesthesia. Edited by Shnider S.M. New York, Robert E. Krieger Publishing Company, 1970, P 85.
2. Holmes G, Mathews B, -Introduction to Clinical Neurology, 3d ed. Edinburgh: Churchill Livingstone, 1968, P 67.