

CSE for Cesarean Section: Gertie Marx versus PENCAN Spinal Needles

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Introduction: PENCAN spinal needle along with ESPOCAN epidural needles are used routinely for combined spinal-epidural anesthesia for cesarean delivery. However, we frequently encountered difficulty piercing the dura forcing us to switch to epidural block. In this study, we compared Gertie Marx spinal needle with PENCAN needle to determine which one is preferred to be applied for our obstetric patients.

METHODS: Following IRB approval and signing informed consent, 124 ASA I-II parturients, who requested neuraxial block for cesarean section, were included. The epidural space was located with ESPOCAN 18 gauge epidural "Braun" needle (B. Braun Medical Inc.) at L4-5 or L3-4 interspace with loss of resistance to air technique using midline approach in lateral or sitting flexed position... Patients were then randomized to one of two groups. Group I: 59 parturients had a 25 gauge PENCAN spinal needle placed in the subarachnoid space. Group II: 65 parturients had a 26 gauge Gertie Marx spinal needle (IMD Inc. USA) placed in the subarachnoid space. Patients received intrathecally 10mg isobaric bupivacaine with 25mcg fentanyl and 100 mcg epinephrine. When the dura could not be pierced by the spinal needle the epidural needle was rotated 45 degree at a time for further attempts. If still unsuccessful, the spinal needle removed and epidural block was applied. All parturients had a 19 gauge arrow FlexTip plus (Arrow international Inc.) open-end tip catheter placed 4 cm in the epidural space. An investigator recorded patient's height, weight, parity, patient's position, the distance of epidural space from the skin, technical problems, paresthesia and pain upon insertion of the spinal needle, time to incision, difficulty with catheter insertion, post-dural-puncture-headache, transient radicular irritability, duration of procedure and overall satisfaction from the technique use. Values are mean±SD, p<0.05 considered significant.

RESULTS: Groups did not differ in age, weight, height or parity, the distance of epidural space from the skin, duration of surgery, previous neuraxial block, the need to rotate or reinsert the epidural needle, the efficacy of the block, side effects from the block, difficulty with cath insertion, the sensory level overall satisfaction, or the APGAR score. Time to incision was 33 ± 8 and 24 ± 6 min for Group I and II respectively (p= 0.0001). Time to T6 level was 6 ± 4 and 2.6 ± 2 min for Group I and II respectively (p= 0.0001).

CONCLUSION: Application of PENCAN spinal needle when compared to Gertie Marx needle for C/S had less success piercing the dura, caused more paresthesia and pain during insertion, prolonged time to incision and required switch to epidural block more often.

	PENCAN n=59 N (%)	Gertie Marx n=65 N (%)	P-Value
Lateral Position	55(98)	48(80)	0.002
Spinal needle problem	34(58)	19(29)	0.001
Leg jerk upon needle insertion	24(41)	10(16)	0.001
Paresthesia upon needle insertion	3 ± 3.8	1.4 ± 3	0.02
Pierced dura with successful block	36(61)	56(88)	0.001
Switched to epidural	23(39)	8(13)	0.001
Sedation (0-10)	0.1 ± 0.5	3.3 ± 3.9	0.0001
Overall Satisfaction (0-10)	9.3 ± 1.1	9.6 ± 1.0	0.09