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Title: THE INCIDENCE OF POSTDURAL PUNCTURE HEADACHE IN OBSTETRICAL PATIENTS COMPARING THE 24-GAUGE AND 22-GAUGE SPROTTE NEEDLES

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Introduction: A common complication of spinal anesthesia in the obstetrical patient is a postdural puncture headache (PDPH). The shape and gauge of the spinal needle have both been shown to influence the incidence of PDPH. The Sprotte needle is a recently introduced spinal needle with a blunt ogival tip. Cesarini et al.[1] reported a 0% incidence of PDPH using the 24g Sprotte needle in cesarean section patients, compared to a 14.5% incidence using the 25g Quincke needle. Sears et al.[2] reported a 0% incidence of PDPH in a series of 130 cesarean section patients using the 24g Sprotte needle. The 22g Sprotte needle has the same shape tip as the 24g but a larger diameter, which many anesthesiologists find easier to use. Thus far it has not been determined if use of this larger diameter Sprotte needle results in an increased incidence of PDPH. This prospective study, currently in progress, is designed to compare the incidence of PDPH between the 24g and 22g Sprotte needles.

Methods: With institutional human subjects review committee approval and informed consent, 112 ASA I and II cesarean section and postpartum tubal ligation patients were randomly assigned to one of two groups and received spinal anesthesia via midline dural puncture with either the 24g or 22g Sprotte needles. Patients were followed throughout their hospital course and were contacted by telephone one week or more after discharge by an investigator who did not know the type of needle used. If no complaints were reported, patients were specifically questioned about the occurrence of postural headache. Statistical analysis was performed using a Chi-square test.

Results:

	Group I 24g Sprotte (N = 55)	Group II 22g Sprotte (N = 57)
Number of PDPH	2	1
Number Requiring Blood Patch	0	0

There was no statistically significant difference in PDPH incidence between the two groups. Headaches developed within 48 hours and lasted less than 72 hours. The headaches were characterized as mild and did not limit the patients' daily activities. Treatment consisted only of oral analgesics.

Discussion: Our preliminary data indicate that the 22g Sprotte needle, like the 24g Sprotte, results in a low incidence of PDPH in obstetrical patients. If further study shows no significant difference between the two needles, these results would suggest that the larger 22g Sprotte needle may be used without risking an increased incidence of PDPH.

References:
1. Anaesthesia 45:656-8, 1990. 2. Anesthesiology 73:A1003, 1990.

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Title: SKIN SURFACE WARMING BEFORE EPIDURAL BLOCK BLUNTS ANESTHETIC-INDUCED HYPOTHERMIA

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Introduction: Hypothermia occurs commonly during epidural anesthesia.[1,2] Recent data support the hypothesis that this hypothermia results from redistribution of body heat from the central compartment to the periphery during sympathetic blockade.[3] Warming the periphery, therefore, should limit anesthetic-related hypothermia. We tested the hypothesis that skin-surface warming before inducing epidural anesthesia blunts hypothermia.

Methods: After approval by the local IRB and written informed consent, lumbar epidural catheters were placed in 7 healthy minimally clothed subjects. We monitored the following: central temperature (tympanic membrane), skin temperature (7 sites), ECG, blood pressure, oxygen saturation and anesthetic level to pinprick. The subjects received two epidural injections, 40 ml each, of 1.5% lidocaine during the study day. One epidural injection followed a 2-hr period in which the subject rested uncovered in a cool room (preanesthetic condition: control). The other epidural injection followed a 2-hr period in which the subject was covered with a Bair Hugger® warming mattress set on "medium" (38°C) (preanesthetic condition: warm). The order of preanesthetic conditions was alternated between subjects. Before beginning the second anesthetic study period, complete resolution of the first epidural anesthetic was confirmed by the absence of anesthetic level, ability to ambulate, and return of toe skin temperature to baseline values. Differences between the two anesthetics with respect to preanesthetic temperatures and maximum decreases in central temperature were determined using Student's t-test for paired data. $P < 0.05$ was considered statistically significant.

Results: Preanesthetic central temperatures were similar, but preanesthetic skin temperatures were significantly higher after the warm period than after the control period (Table). Midthoracic levels of anesthesia were achieved after all epidural injections. Decreases in central temperature during anesthesia were smaller when the subjects had been warmed before receiving the epidural injection (Table).

Conclusion: Actively warming the skin before inducing epidural anesthesia lessened anesthetic-related hypothermia. This finding supports body heat redistribution as the etiology of hypothermia from epidural anesthesia. Although multiple factors contribute to intraoperative hypothermia, warming the patient before inducing anesthesia should help limit anesthetic-related hypothermia.

TABLE

Preanesthetic Condition	Skin Temp before anes	Central Temp before anes	Maximum decrease in central temp after anesthesia
Control	31.5 ± 0.6	36.8 ± 0.3	-0.79 ± 0.31
Warm	36.1 ± 0.4*	37.0 ± 0.4	-0.36 ± 0.31*

Values are presented as °C, and are mean ± S.D.
*$P < 0.05$

1. Anesthesiology 71:A838, 1989
2. Regional Anesthesia 14:48, 1989
3. Anesthesiology 73:A967, 1990