TITLE: INCIDENCE OF POSTDURAL PUNCTURE HEADACHE IN CESAREAN SECTION PATIENTS USING THE 24G SPROTTE NEEDLE

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Introduction: Postdural puncture headache is a common complication of spinal anesthesia. The shape and gauge of the needle have been shown to influence the incidence of headache. Snyder et.al.[1] reported that a non-cutting pencil point 22g Whitacre needle is associated with a lower incidence of headache in obstetrical patients than a beveled 26g Quincke needle (4% vs. 25%). This prospective study, in progress, was designed to determine the incidence of postdural puncture headache in cesarean section patients using the non-cutting pencil point 24g Sprotte needle.

Methods: With institutional human subjects review committee approval, 130 ASA I and II patients undergoing cesarean sections have been studied. Spinal anesthesia was induced via a 24g Sprotte needle, with agents of the anesthesiologist's choice. Postoperatively, no restrictions on activity were made following resolution of the block. The patients were followed throughout their hospital course, and follow-up was done by telephone one week or more after discharge. If no complaints were reported, they were asked specifically about the occurrence of postural headache.

Results: None of the 130 patients (0%) reported a postdural puncture headache.

Discussion: The cause of postdural puncture headache is widely assumed to be loss of CSF via the dural puncture site. Therefore small beveled needles or non-cutting pencil point needles have been advocated for use in parturients. The incidence of headache in parturients using the beveled 26g needle has been reported as 0.4 - 25%.[1,2] A 4.0% incidence of headache in parturients has been reported using the pencil point 22g Whitacre needle.[1,3] The 24g Sprotte needle, like the 22g Whitacre needle, is technically easy to use and provides rapid CSF return. Our initial results (0% incidence of headache) suggest that the 24g Sprotte needle may be the needle of choice to prevent postdural puncture headaches in cesarean section patients.

References: 1. Anesthesiology 71: A860, 1989.
2. Anesthesiology 11: 464, 1950.
3. Anesthesiology 71: A861, 1989.

TITLE: STRESS IN THE ATTENDING ANESTHESIOLOGIST

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Anesthesiologists often describe stress when supervising residents in the operating room. We have attempted to ascertain: 1) whether specific events during the conduct of an anesthetic can trigger this stress; 2) if the training level of the resident influences the perceived level of stress; and 3) if this perceived level of stress can be correlated with dysrhythmias or ST-segment changes.

Following approval by the Human Research Committee, 20 members of the Anesthesiology faculty were monitored by an ambulatory cardiac recorder. Each staff member wore the monitor during a day of supervising two senior residents and during another day supervising two junior residents . The monitor was marked by the attending at specific times (induction, intubation, emergence, and other stressful events), and a diary was kept noting the subjective level of stress (0-10) at each of these times. 40 recordings of at least 6 hours duration were computer analyzed and reviewed; heart rate (HR) was averaged over 20 minute intervals. Heart rate changes of >5 beats/minute were considered clinically significant. Confidentiality was ensured by assigning blinded code numbers; no attempt was made to determine medical history. Statistical interpretation of data was performed using Chi-square, ANOVA, and linear regression.

The results of the study are summarized in Table 1. Attending anesthesiologists < 50 years old reported stress scores > 0 more frequently when supervising junior residents than senior residents (73.1% VS 31.7%, P =.01). However, heart rate changes occurred more frequently despite no perceived stress when supervising senior residents than junior residents (48.2% vs. 22.6%, p = .001). Attendings greater than 50 years old reported stress scores >0 less frequently than younger attendings when supervising both junior and senior residents (p=.01). Attendings over 50 years of age were more likely to report stress levels > 0 at times when heart rate changes occurred than those < 50 years old (p=.001).

Increases in heart rate were associated with recorded OR events in attendings < 50 years old, but not in those > 50 (p=.01). The single event most consistently identified as stressful by all attendings was endotracheal intubation. Attendings less than 50 years old perceived it to be more stressful with junior than senior residents; attendings greater than 50 years old noted higher stress levels with seniors. ASA classifications, relative difficulty of operation, and the number of cases supervised were similar among groups.The peak HR recorded during the study was 140 beats/minute. No ischemic ST segment changes were noted in any of the monitor records.

Attendings over age 50 were more accurate in their assessment of an event's effect on their heart rate regardless of resident training level. The attendings under age 50 were able to recognize stress when staffing junior level residents but when staffing senior residents, HR changes frequently occurred during OR events assessed as "non-stressful" (stress score of 0.). The reason for this disparity is unclear at present, but could reflect learned responses, greater experience, physiologic effects of aging, unknown medical conditions or merely a small sample population. Further studies are underway to examine a larger population of anesthesiologists with varying levels of experience and modes of practice, and to better define the subjects' medical histories.

TABLE 1-OPERATING ROOM EVENTS

		STRESS SCORE = 0		STRESS SCORE > 0	
ATTENDING	RESIDENT	Δ HR	NO Δ HR	Δ HR	NO Δ HR
< 50	SENIOR	48.2%	20.2%	21.3%	10.4%
< 50	JUNIOR	22.6%	4.3%	57.1%	16.0%
> 50	SENIOR	7.3%	48.3%	22.2%	22.3%
> 50	JUNIOR	12.6%	36.2%	32.3%	18.9%