

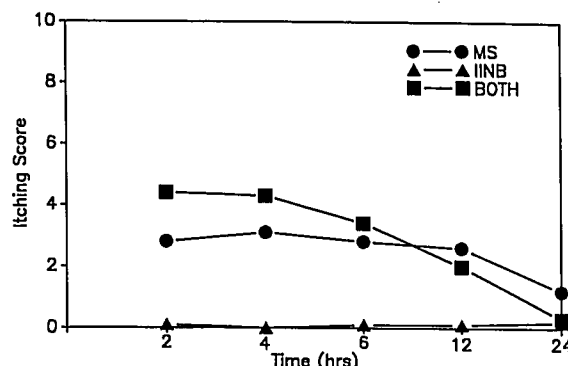
**TITLE:** ILIOINGUINAL NERVE BLOCKS: AN ALTERNATIVE OR SUPPLEMENT TO INTRATHECAL MORPHINE  
**AUTHORS:** TA Witkowski MD, BL Leighton MD, MC Norris MD  
**AFFILIATION:** Department of Anesthesiology, Thomas Jefferson University, Philadelphia, PA 19107

**Introduction.** Intrathecal morphine can provide effective post-cesarean analgesia but its use is limited by itching, nausea and potential respiratory depression (1). Ilioinguinal nerve blocks can also provide effective post-cesarean analgesia (2). We designed this randomized, double-blind study to compare intrathecal morphine (MS), ilioinguinal nerve blocks (IINB) and a combination of the two following spinal anesthesia for cesarean section via Pfannenstiel incision.

**Methods.** Twenty-four healthy term-pregnant patients scheduled for cesarean section via Pfannenstiel incision consented to participate in this IRB-approved study. All patients received intrathecal bupivacaine 15 mg and were randomly assigned to: group MS (intrathecal MS 0.15 mg, placebo IINB)(n=9), group IINB (intrathecal placebo, IINB with 10 ml 0.5% bupivacaine with 1:200,000 epinephrine bilaterally)(n=8), or group BOTH (intrathecal MS 0.15 mg, IINB with 10 ml 0.5% bupivacaine with 1:200,000 epinephrine bilaterally)(n=7). We standardized post-operative narcotic orders. Patients assessed their pain, itching, and nausea using unmarked 10-cm visual analogue scales and completed Trieger dot and digit substitution tests 0,2,4,6,12 and 24 hr post-operatively. We determined differences among groups by two-way analysis of variance and accepted  $P < 0.05$  as significant.

**Results.** Patients receiving intrathecal morphine (groups MS and BOTH) had more itching than IINB patients ( $p = 0.02$ ).

There was no difference in pain scores among groups and supplemental narcotic usage was similar in all groups. There were no significant intergroup differences in nausea, Trieger dot or digit substitution scores.



**Discussion.** Ilioinguinal nerve block analgesia alone avoids the itching and increased respiratory monitoring requirements that accompany intrathecal morphine. Ilioinguinal nerve blocks may successfully supplement or substitute for intrathecal morphine for post-operative analgesia following cesarean section via Pfannenstiel incision.

#### References

1. Anesthesiology 68:444-448, 1988
2. Br J Anaesth 61:773-775, 1988

**TITLE:** EPIDURAL PCA VS. CONTINUOUS INFUSION OF SUFENTANIL-BUPIVACAINE FOR ANALGESIA DURING LABOR AND DELIVERY

**AUTHORS:** JS Naulty MD, D Barnes MD, R Becker MD, A Pate MD, W Griffith MD

**AFFILIATION:** Department of Anesthesia, George Washington University, Washington D.C.

Epidural sufentanil has been employed in combination with low concentrations (.06-.03 %) of bupivacaine to produce analgesia for labor and delivery. Patient Controlled Epidural Analgesia (PCEA) has been suggested as an effective method of administration, but little information is available comparing PCEA vs. continuous infusions of local anesthetics ± narcotics in this patient population. We have performed a double-blind, randomized dose-response study of PCEA compared to continuous infusions of bupivacaine and sufentanil in parturients at our institution.

The protocol was approved by the Institutional Review Board and written informed consent was obtained. We have studied 80 ASA class I multiparae who had a pain score of at least 5 on a 10 cm visual analog pain scale. The patients were randomly assigned to one of six treatment groups. An epidural catheter was placed at the second lumbar interspace, and all patients received a loading dose of 10 ml of .125% bupivacaine with 3 µg. sufentanil. The patients were then randomized into 5 groups.

group 1: continuous infusion of 10 ml/hr of .125% bupivacaine

group 2: continuous infusion of 10 ml/hr of .125% bupivacaine with 0.3 µg/ml sufentanil

group 3: continuous infusion of 10 ml/hr of .0625% bupivacaine with .3 µg/ml sufentanil

group 4: continuous infusion of 10 ml/hr of .3125% bupivacaine with .3 µg/ml sufentanil

group 5: a patient-controlled infusion of .0625% bupivacaine with .3 µg/ml sufentanil (5 ml/hr continuous infusion rate, 2 ml PCA dose with a 6 min lockout interval).

Supplemental injections of 0.125% bupivacaine were administered if the patient reported a pain score of >1 and she desired more profound analgesia. The anesthesiologist performing the block or evaluating the maternal, fetal and neonatal responses was unaware of the composition or method of administration of the study solution. Sensory levels, motor block, pain scores, vital signs, cervical dilation and descent, uterine activity, and fetal heart rate were recorded at 1,3,6,9,12,15, and 30 minutes, and every 30 minutes thereafter until delivery was accomplished and the patient discharged to the postpartum floor. Umbilical blood gases and Apgar scores were obtained at delivery, and Scanlon neurobehavioural assessments (ENNS) were performed on the neonate at 4 and 24 hours post partum. Non-parametric observations were statistically analyzed using contingency-table analysis, and parametric scores were analyzed using multiple analysis of variance.

Following the initial loading dose, more patients in group 1 required supplemental injections of .125% bupivacaine than in any of the other groups to produce satisfactory analgesia (6 in group 1, and one each in groups 3,4 and 5,  $p = .01$ ,  $n = 15$  patients/group). All of the patients achieved a pain score of <1 within 15 minutes. Patients who received continuous infusions of .125% or .06% bupivacaine with sufentanil received less local anesthetic than patients who received .125% bupivacaine alone or 0.031 % bupivacaine with sufentanil ( $p = .01$ ). Patients who received PCEA received more local anesthetics and sufentanil ( $p = .02$ ) than the continuous infusion groups, and reported no greater overall satisfaction with the technique. ENNS scores and the incidence of Apgar scores <6 did not differ between the groups. No significant differences were found in the course or outcome of labor. Patients who received .062 and .0312% bupivacaine with sufentanil exhibited no observable motor block, and were able to ambulate without assistance, whereas patients who received a continuous infusion of .125% bupivacaine alone developed more motor block at delivery ( $p = .01$ ).

A continuous infusion of a small dose of sufentanil (.3 µg/ml, 3 µg per hour) significantly potentiated the analgesic effects of epidural bupivacaine, and allowed safe, excellent analgesia to be produced with extremely low concentrations of bupivacaine, with significant decreases in local anesthetic dose, motor block and the incidence of hypotension, when compared with .25% bupivacaine. We found no particular benefits attributable to PCEA in this patient population.