## A39 (Poster 29)

**PSYCHIATRIC SIDE EFFECTS OF INDOMETHACIN IN PARTURIENTS** *Clunie, M.L.; Crone, L.L.; Klassen, L.J.; Yip, R. Department of Anesthesiology, Royal University Hospital, Saskatoon, SK, Canada*

**Introduction:** A perceived problem of adverse psychiatric reactions occurring in parturients receiving the non-steroidal anti-inflammatory drug (NSAID) indomethacin has been identified. This study describes the central nervous system (CNS) side effects of indomethacin in a case-series of obstetric patients. **Methods:** The hospital records of patients experiencing a postpartum complication between 1994 and 1999 were reviewed for adverse drug reactions (ADR) attributed to indomethacin. Additional cases of indomethacin-induced side effects were identified through reports to the nursing administration and the ADR Reporting Program. The Naranjo ADR Probability scale was applied to all cases.(1) **Results:** Thirty-two patients experienced a psychiatric reaction after receiving indomethacin for postpartum pain. The symptoms were often severe and included anxiety, fear, agitation, affective lability, depersonalization, paranoia, and hallucinations. **Discussion:** NSAID-induced CNS side effects have been described predominantly in the elderly, with indomethacin most frequently reported to produce psychiatric reactions.(2,3) Whether the vulnerability to these neuropsychiatric reactions is randomly distributed or if parturients are at increased risk is yet to be determined. Proposed mechanisms of these side effects include a postpartum dopamine supersensitivity exacerbated by the prostaglandin inhibition (4,5) as well as a structural relationship between serotonin and indomethacin.(2,3) The severity of the reactions to indomethacin and the potential for these disturbing psychiatric side effects to compromise the safety of both mother and infant have led to the use of alternative analgesics including different classes of NSAIDs for this population. **Reference:** 1) Clin Pharmacol Ther 1981;30:239-245. 2) Arch Intern Med 1991;151:1309-1313. 3) Int'l J Psychiatry in Medicine 1996;26:25-34. 4) J Clin Psychiatry 1990;51:365-366. 5) Psychopharmacology 1991; 103:95-98.

## A40 (Poster 30)

**DID TUOHY DESIGN THE EPIDURAL NEEDLE OR WAS IT HUBER?** *Martini, J.; Martin, D.; Kamath, G.; Vasdev, G. Anes. Dept., Mayo Clinic, Rochester, MN* Despite the success of spinal anesthesia in 1900 (using intrathecal cocaine),[1]) the spread of obstetric regional analgesia (OBRA) did not occur until major improvements in technique, needle-design, and safety were established.[2] Our aim was to document the development of the epidural needle, using institutional archives and cross-references with the Wood-Library Museum (Chicago). Lemmon in 1940,[1] described an indwelling malleable needle, which provided extended anesthesia, but imposed additional risks. For OBRA, Hingson used a malleable needle for caudal analgesia.[3] In 1944, he described lumbar epidural blockade with the malleable needle. He used a ureteral catheter, but later abandoned the practice due to technical difficulty of catheter insertion through a Love-Barker needle.[4] In 1944, Edward Tuohy, a US Army Medical Corps captain, described the first use of an indwelling silk ureteral catheter.[5] To persuade the cephalad migration of the epidural catheter tip, he suggested bending the catheter prior to placement. It wasn't until the following year that he used a 15-gauge needle with a Huber tip (a curved tip with a lateral orifice) to perfect the technique.[6] In 1946, Ralph Huber, a dentist from Seattle, applied for a patent for a "transversely curved wall. . . end portion" needle. It was Tuohy, however, who suggested using the lateral orifice to direct the catheter. In addition, the original Huber tip had secondary levels, which made it much sharper compared to the single, primary level of the modern needle. Tuohy claimed no originality for the needle design and described it as "a needle with a Huber point." However, it seems that any epidural needle with a Huber tip, became known as a "Tuohy needle" despite the absence of any claim by Tuohy himself. **Reference:** 1. Ann of Surg 1940;111:141-4 2. Surg Gynecol Obstet 1933;57:51-62 3. Anesth Analg 1942;21:301-11 4. Anesth Analg 1949;28:13-23 5. Anesthesiology 1944;5:142-8 6. Surg Clinics N Am 1945;25:834-40

## A41 (Poster 31)

**EPIDURAL ANALGESIA AND OXYTOCIN USE: AUGMENTATION VS INDUCTION** *Ramanathan, S. Anesthesiology, Magee-Womens Hospital, Pittsburgh, PA* Oxytocin is used either for augmentation (1)or induction of labor. This report describes the effects of lumbar epidural analgesia (LEA) on the duration of labor and labor outcome in primiparous women with uncomplicated pregnancies receiving oxytocin for either purpose. Data were retrieved from a quality improvement database. Bupivacaine 0.25% followed by bupivacaine 0.125% + fentanyl 2 mcg infusion at 10 ml/hr was used. A total of 1671 primiparous parturients (>38 weeks gestation) were included: n=996 in the augmentation group; n= 675 in the elective induction group. Data were expresed as mean (SD) and analyzed using t-test or X2 analysis. Patient dwmographic data were similar.The LEAs were started slightly early in labor in the induction patients. The epidural to 10 cm time, the stage II duration and neonatal birth weights were similar in the two groups. The rates of normal spontaneous vaginal delivery (NSVD) were similar in the two groups. The rates of cesarean section (C.S) and instrumental deliveries were higher in the induction geoup. (Table). We found no difference in the durations of labor in primiparous patients undergoing oxytocin augmentation or induction with LEA. However, the induction group faces an increaed rate of operative deliveries.

| | Induction | Augmentation | p value |
|---|---|---|---|
| Cervical dilatation (cm) | 3.27 (1.3) | 3.65 (1.38) | 0.000 |
| Epid-10 cm time(hrs) | 5.45 (3.91) | 5.26 (3.64) | NS |
| Stage II(hrs) | 2.13 (1.5) | 2.0 (Poster1.63) | NS |
| NSVD(%) | 67 | 72 | NS |
| C.S (%) | 11.3 | 7.8 | 0.008 |
| Instrumental (%) | 29.8 | 21 | 0.001 |
| Baby weight (kg) | 3.47 (0.48) | 3.41 (0.43) | NS |

## A42 (Poster 32)

**DEVELOPMENT AND VALIDATION OF A RISK SCORE FOR BREAKTHROUGH PAIN DURING LABOR EPIDURAL ANALGESIA** *Vasudevan, A.; Pratt, S.D.; Soni, A.K.; Sarna, M.C.; Hess, P.E. Anesthesia, Beth Israel Deaconess Medical Center, Boston, MA* Breakthrough pain is common during labor epidural analgesia; however, predicting if an individual parturient will suffer breakthrough pain is difficult. This is the development and validation of a scoring system to identify women at increased risk for breakthrough pain. **Methods:** Secondary analysis of a labor analgesia database. 1963 subjects in spontaneous labor with functioning epidural catheters were randomly assigned to two groups. Only factors obtainable at the time of epidural placement were considered. Independent variables associated with breakthrough pain were identified in Group 1 using logistic discriminate anaysis. $p<0.05$ was significant. The exponent of each parameter estimate was used as the risk value. The total risk score was the sum of all risk values. A classification table was used to create cutoffs for low- mid- and high-risk groups. Validation of the scoring was performed on Group 2, by calculating specificity and sensitivity. After validation of the system, the final model was constructed from the complete dataset. **Results:** Final risk values are in the table. The cutoff for low-risk was 6 or less, mid-risk 7 to 10, high-risk was 12 or greater. Of subjects in Group 2, 81% in the high-risk vs. 33% in low-risk required any rescue med, and 31% in the high vs. 2.7% in the low had recurrent pain (more than 2 episodes). Sensitivity was 69% and specificity was 67%. **Conclusion:** This scoring system accurately predicted breakthrough pain during labor analgesia. It could be used to determine dosage requirements during labor, or for comparing treatments of labor pain.

| | Parity | Fetal Weight | | | Dilation at Epidural Placement | | | |
|---|---|---|---|---|---|---|---|---|
| | Nullip | <3000 gm | 3000 - 4000 gm | >4000 gm | <3 cm | 3 - 4 cm | 5 - 6 cm | 7+ |
| Risk Score | 3 | 0 | 1 | 3 | 8 | 3 | 1 | 0 |