SOAP 40th Annual Meeting
April 30 – May 4, 2008

A-113

An Open-Label, Randomized, Controlled Trial of Epidural Space Identification with the Episure(TM) AutoDetect versus Conventional Syringe

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Background: Among skilled physicians with expertise in procedural technique, there is a hesitation in altering that technique, particularly if a high degree of success is enjoyed. This is particularly true with the epidural technique where various elements (i.e. syringes, loss of resistance techniques, catheters and agents) are believed to contribute to a high success rate. The Episure™ AutoDetect is a spring-loaded "loss of resistance" epidural syringe that allows for a steady two-handed advancement of the epidural needle and visual confirmation that the epidural space has been identified.

Study: In this open-label randomized controlled trial of epidural space identification we hypothesized that highly skilled individuals, who should have a favored stable technique, could still potentially benefit from the Episure™ AutoDetect syringe. Benefit would be assessed by placement elements (number of attempts, time required for placement) and success/failure of analgesia within 30 minutes of catheter placement.

Methods: After IRB approval and informed consent, experienced anesthesiologists were randomized to perform 50 consecutive attempts with either the Episure™ AutoDetect syringe with saline (A) or with the conventional glass syringe with loss of resistance to saline (C). All anesthesiologists completed a brief questionnaire about experience and preference in epidural technique prior to enrollment. Epidural placement was performed in laboring parturients in the sitting position with the standard epidural mix at Brigham and Women's Hospital. Time to find the epidural space, clarity of the loss of resistance, ease of threading the catheter, patient comfort at 30 minutes, and success/failure rates were recorded. Complications were noted. Physicians were also asked to complete a brief survey rating the syringe after each use. A subset of those who completed the study was allowed to crossover to the other technique for the next 50 consecutive attempts, following the same study procedure. The data was evaluated using Chi-square and Student's t test analyses.

Results: This is an ongoing study. This analysis includes the 319 (A) and 412 (C) epidurals by 16 physicians (9 attendings, 5 fellows and 2 CA3's). The results are summarized on Table 1. There is no difference in demographics between the 2 groups. Among all placements, there is a statistically significant difference in the time of epidural placement for Group A (50.9 +/- 30.2 seconds) versus Group C (70.1 +/- 49.6 seconds), $p<0.001$. When the data was analyzed individually by those that participated in the crossover study, there was a slightly faster placement time in the Episure™ AutoDetect group by 20 seconds in one individual. There was one dural puncture in group (C) and 2 intrathecal catheters in each group after placement of the epidural catheter. With both techniques, there is decrease in "time to placement" from epidural number 1 to number 50; however, the improvement is similar between 2 groups (Figure 1). There was no difference in success/failure between the two groups.

Conclusion: Epidural placement with both techniques show similar rates of improvement over 50 consecutive epidurals with an overall faster "time to placement" in the Episure™ AutoDetect group. There is no difference in complications, success or failure between the two groups.

References:

Reg Anesth 1996 May-Jun;21(3):182-90
Anesth Analg 2002;95:411-6

Poster Review #1 (continued)

SOAP A36 **The Anesthetic Management Of Women With Heart Disease For Labor And Delivery**
E. Goldszmidt1, A. Macarthur1, M. Sermer1, S. Siu2;
1Mount Sinai Hospital, Toronto, ON, Canada; 2University Health Network, Toronto, ON, Canada

SOAP A37 **Optimal Maternal Dosing Of Penicillin G At Delivery For Prophylaxis Against Neonatal Infections From Group B Streptococcus (GBS)**
J. Spiegel, P. Fan-Havard, J. Johnson;
Beth Israel Deaconess Medical Center, Boston, MA

SOAP A38 **Obstetrics And Obstetrical Anesthesia Issues In Women With Dwarfism**
J. Hoover-Fong1, I. Berkowitz1, J. Rossiter2, D. Krakow3, D. Miller1, G. Oswald1, D. Penning4;
1Johns Hopkins University, Baltimore, MD; 2St. Joseph Medical Center, Towson, MD; 3Cedars-Sinai Medical Center, Los Angeles, CA; University Of Miami Miller School Of Medicine, Miami, FL

SOAP A39 **Chronic Pain After Cesarean Section. Is It A Problem?**
M. M. Cardoso, M. C. Rizzo, A. R. Amaro, E. Lorenz;
Hospital E Maternidade Santa Joana, São Paulo, Brazil

SOAP A40 **Obstetric Anesthesia Complications In A Tertiary Care Center - A Six Year Review.**
J. S. Ranasinghe, G. Wirth, L. Garcia, M. Lai, D. H. Penning, D. J. Birnbach;
University Of Miami Miller School Of Medicine, Miami, FL

SOAP A41 **Where Have All The Pudendals Gone?**
M. H. Amols, K. D. Traynor, D. J. Creedon;
Mayo Clinic College Of Medicine, Rochester, MN

SOAP A42 **New Autodetect Syringe For Labor Epidural Analgesia**
V. Soskin, H. Marsh, Z. Injic, T. Tenenboym, D. Deppen, J. Cox, K. Ferguson;
Wayne State University, Detroit, MI

SOAP A43 **Six-Compartment Pharmacokinetic Model To Predict Maternal And Fetal Propofol Concentration During Cesarean Section In Antenatally Diagnosed Congenital Diaphragmatic Hernia**
K. Yokota1, O. Nagata2, K. Terui1, M. Tamura1, R. Uokawa3, M. Tamura1, H. Miyao4;
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SOAP A44 **Lidocain Vs Ropivacaine For Epidural Analgesia In Labor: The Frequency Of Transient Neurological Symptoms**
E. M. Shifman, S. Floka, I. Got;
Republican Perinatal Center, Petrozavodsk, Russian Federation

SOAP A45 **Impact Of Advanced Maternal Age On Pregnancy Outcomes**
Y. You, G. Lee;
The Catholic University Of Korea, Seoul, Republic Of Korea

SOAP A46 **Survey Among Soap Membership On The Use Of Benzodiazepines During Pregnancy, Labor And C-Section**
L. Hebbar, M. Bamert, K. Coyle;
MUSC, Charleston, SC

Abstracts are available online at www.soap.org and in the May issue of *Anesthesiology*.