

ORAL PRESENTATIONS #2

O2-1

CAN ROPIVACAINE AND LEVOBUPIVACAINE BE USED AS AN INTRAVENOUS TEST DOSE FOR REGIONAL ANESTHESIA? *Gautier, P.¹ Owen, M.D.² Hood, D.D.²* 1. Anesthesiology, Clinique Ste. Anne-St. Remi, Brussels, Belgium; 2. Anesthesiology, Wake Forest University School of Medicine, Winston-Salem, NC **Introduction:** In obstetric anesthesia, intravenous (iv) catheter insertion can occur in 5-10% of cases, therefore, a reliable epidural test dose is essential. While ropivacaine (rop) and levobupivacaine (levo) appear to be less toxic than bupivacaine after large iv doses (1,2) it is unclear whether CNS symptoms can be elicited after small doses administered for iv catheter testing. This study was conducted to determine if rop and levo are suitable for use as an iv test dose. Ethical considerations prevented study of pregnant patients. **Methods:** After informed consent, 117 nonpregnant, unpremeditated patients were randomly assigned to receive a 5 ml bolus injection of iv saline (n=28), 2% lidocaine (n=30; 100 mg), 0.5% rop (n=29; 25 mg), or 0.5% levo (n=30; 25 mg) prior to general anesthesia. Following iv injection, patients were questioned for the presence and duration of visual or hearing changes, perioral numbness, metallic taste, dizziness, slurred speech, shortness of breath, palpitations, and anxiety. Blood pressure and heart rate were also recorded. **Results:** In all groups, blood pressure and heart rate were stable with iv drug injection. No patient experienced CNS symptoms after receiving saline. After iv rop and levo, only 52% and 57% of patients, respectively, reported one or more CNS symptoms. Dizziness, tinnitus and metallic taste were the most common CNS symptoms, mild-moderate in intensity, and persisting 90 seconds. In contrast, 87% of patients receiving lidocaine reported one or more CNS symptoms. Tinnitus, dizziness and metallic taste were the most common symptoms with moderate-severe intensity lasting 112 seconds. Lidocaine, 100 mg was significantly more reliable in producing recognizable CNS symptoms ($P < 0.001$, exact Chi-square test) when compared to either levo or rop. **Conclusion:** Plain, 25 mg doses of rop and levo are unreliable for use as an iv test dose because CNS symptoms are inconsistently observed in nonpregnant patients. The addition of epinephrine or the substitution of another local anesthetic such as lidocaine for iv testing is recommended. Supported in part by: NIH# MO1-RR07122 1. *Anesth Analg* 2001;92(1):37-43. 2. *Anesth Analg* 1989;69:536-9.

O2-2

THE VIRTUAL LARYNX: TEACHING INTUBATION SKILLS WITH FEWER PATIENTS *Glassenberg, R.¹ Glassenberg, S.²* 1. Anesthesia, Northwestern University, Chicago, IL; 2. Electrical and Computer Engineering, University of Illinois, Urbana/Champaign, IL **Introduction** The airline industry has traditionally relied on flight simulators for safely training pilots to handle emergencies that are life threatening, but rarely encountered. Anesthesia simulators are being developed to assist anesthesiologists in managing critical situations such as difficult intubation. **Methods** A virtual reality larynx was created out of a series of three-dimensional spline surfaces and Boolean objects. Muscle movement, such as the vocal chords and epiglottis were then animated. Tissue-like textures were "painted" onto the surfaces, and lighting conditions were varied to allow for fogging of the fiberoptic lens, as well as the accumulation of secretions. The system was designed in 3D Studio Max by Kinetix, and exported to VRML2 (Virtual Reality Markup Language), the current industry standard for virtual worlds and simulations. The complexity of the three-dimensional surfaces demands an efficient VRML player on a relatively high-end computer in order to dynamically render the images to the screen as the user navigates the animated environment. **Results** [See images.] **Discussion** Currently, only two methods exist for acquiring skills in the use of the fiberoptic laryngoscope prior to the actual intubation of live patients: mannequins and video instruction. Neither method provides the necessary realism and interactivity, as they both show only a fixed path on a particular anatomy. In contrast, this simulation allows the user to safely experience all of the potential difficulties associated with laryngoscopy, without exposing a patient to any danger. *Schuid, HA. Anesthesiologists' Management of Simulated Critical Incidents. Anesthesiology* 76(4) 495-501, Apr 92

