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Rivanna Medical
press release
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SOAP Clinical Research Presentations Prove the Benefits of RIVANNA Spinal Navigation System

Accuro Enhances Anesthesia Placement Accuracy and Efficacy

CHARLOTTESVILLE, Va., May 15, 2017—The Accuro® automatic spinal navigation system significantly enhanced the accuracy of epidural and spinal anesthesia placement compared to traditional landmark techniques, even for residents-in-training and patients with atypical spinal anatomy, according to three abstracts presented at the annual meeting of the Society for Obstetric Anesthesia and Perinatology (SOAP).

Accuro is a pocket-sized ultrasound system that uses specialized algorithms to automatically detect spinal midline and epidural depth and trajectory. The device is optimized for visualization of bony anatomy and eliminates the steep learning curve required for accurate ultrasound interpretation.

UVA Trial Demonstrates Significantly Improved Placement Success

Presented at the meeting were the results of a randomized trial conducted at the University of Virginia Medical Center comparing anesthesiology residents' success placing spinal anesthesia in C-section patients with Accuro guidance and with conventional methods. Participants were not experienced in ultrasound reading and received a brief 10 minute training session on Accuro operation.

The trial found that for residents with prior spinal anesthesia experience, Accuro improved first-attempt needle placement by more than 100% in patients with a high body mass index. For these residents, the average number of needle redirections to achieve placement using Accuro was almost half that of the same sub-group using conventional placement methods.

This clinical trial was funded by National Institutes of Health (NIH) National Institute of Biomedical Imaging and Bioengineering (NIBIB) under award number R44EB015232. The content is solely the responsibility of the authors and does not represent official views of NIH.

Stanford Clinical Trial Highlights the Accuracy and Effectiveness of Automated Ultrasound

In a second clinical trial conducted at Stanford University Medical Center, automated Accuro imaging technology successfully identified the location and depth for optimal epidural anesthesia administration with essentially equivalent accuracy to traditional ultrasound images read by an



experienced interpreter. Researchers also found that real needle depth to the epidural space measured after successful delivery significantly correlated with Accuro's initial assessment.

Additionally, Accuro identified the appropriate spinal interspace for needle insertion in 94% of patients. Its automated image navigation enabled 87% success in first-attempt epidural administration for participating physicians, who were primarily anesthesia residents.

This study was conducted under the direction of Brendan Carvalho, MD at Stanford Medical Center and led by Katherine Seligman, MD, who is currently faculty at the University of New Mexico.

Rutgers Demonstrates Benefits for Atypical Spinal Cases

A third SOAP presentation focused on the case history of a pregnant patient with severe scoliosis who received epidural anesthesia under Accuro guidance at Rutgers-New Jersey Medical School. Prior surgical scoliosis treatment had resulted in significant scarring and additional anatomical distortion. RIVANNA® Accuro successfully identified bony landmarks and the optimal spinal interspaces for anesthesia delivery. Ultimately, the procedure was successfully performed with first-time needle placement, followed by a single manipulation.

Authors note that conventionally delivered spinal anesthesia for severe scoliosis patients typically involves multiple needle insertions, extended procedure time and elevated risk of complications. They believe that Accuro's automated recognition of the spinal midline and epidural depth contributed significantly to the procedure's success.

"We are extremely encouraged by this growing body of scientific evidence underscoring Accuro's accuracy and efficacy in providing image guidance for successful spinal and epidural anesthesia placement," says RIVANNA Chairman and CEO Will Mauldin. "While numerous studies demonstrate the benefits of ultrasound guidance in epidural and related neuraxial anesthesia delivery, widespread use has been hampered by the need for operator experience and the complex, cumbersome nature of the equipment. Our goal is to provide precise, practical image guidance that supports anesthesiology workflow to enhance patient satisfaction and departmental efficiency, while eliminating the risks of repeated needle placement attempts."

About Accuro® and Rivanna Medical, LLC

RIVANNA® Accuro is the world's first ultrasound-guidance system designed to effortlessly enhance spinal and epidural anesthesia placement accuracy. The revolutionary platform features BoneEnhance®, which optimizes ultrasound for the visualization of bony vs. soft tissue anatomy, and SpineNav3D™, which automates measurements of the spinal midline, epidural depth and trajectory. Accuro was engineered and commercialized by RIVANNA, an innovative medical device company headquartered in Charlottesville, VA. The proprietary device is FDA 510(k)-cleared for a variety of imaging applications. For anesthesia providers, certainty can be effortless with Accuro. For more information, visit rivannamedical.com.

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