RIVANNA®

An Accuro® success story: Rapid placement of neuraxial block in morbidly obese parturient to avoid general anesthesia

- Neuraxial ultrasound is proven to increase spinal and epidural success; however, a steep learning curve has prevented widespread adoption of this technology.

- Accuro's SpineNav3D™ technology eases the training burden by automating identification of spinal midline, landmark detection, and depth to the epidural space.

- Clinical benefits of Accuro are particularly pronounced in the morbidly obese population where palpation alone cannot reliably identify an appropriate needle insertion site.

"Accuro is a practical, reliable, and easy to use tool that facilitates administration of neuraxial anesthesia, particularly in challenging cases."

Beth Ann Clayton, DNP, MS, CRNA
Assistant Professor of Clinical Nursing
Program Director-Nurse Anesthesia Major
University of Cincinnati, College of Nursing

Case Study

The Accuro device provided essential landmark information that enabled the administration of an efficient and effective neuraxial anesthetic in a morbidly obese (BMI 52) parturient. Prior to utilization of the Accuro device, this laboring patient received two consecutive epidurals from experienced anesthesia providers. Each epidural failed to provide adequate bilateral pain control and was extremely difficult to place, requiring multiple attempts. Due to inadequate labor progression, a cesarean delivery was planned. Preoperative assessment determined the existing epidural had failed and a third anesthetic would be required. I utilized the Accuro device with less than 2 minutes of scanning to place a working Combination Spinal Epidural (CSE) anesthetic after only one minor needle redirect. Total placement time was less than 5 minutes. The CSE worked perfectly, pleasing both the surgeon and patient. Under normal circumstances, this patient was at a high risk to receive general anesthesia due to an inability to place a successful neuraxial block.

Figure 1. Accuro handheld device in use to localize the epidural space prior to placement of neuraxial anesthesia.

Conclusion

"The information provided by Accuro's SpineNav3D technology was not obtainable with palpation alone, as evidenced by the two prior failed epidural placements."

The Accuro facilitated rapid identification of spinal midline and detection of the intervertebral space in a morbidly obese patient with impalpable landmarks. The information provided by Accuro's SpineNav3D technology was not obtainable with palpation alone, as evidenced by the two prior failed epidural placements from providers who did not utilize image guidance. With Accuro, the neuraxial block was placed quickly and successfully, requiring only a minor needle adjustment. The ability to administer neuraxial anesthesia with fewer needle insertions may result in higher patient satisfaction and reduction

in complications. In this instance of neuraxial anesthesia for a morbidly obese patient undergoing cesarean section, an accurate neuraxial placement avoided the use of general anesthesia.

Providers may consider the potential benefits of utilizing the Accuro technology to improve patient and provider satisfaction, reduce costs for operating room time and anesthesia equipment, decrease patient complications, avoid general anesthesia during childbirth, and facilitate immediate skin-to-skin contact after delivery.
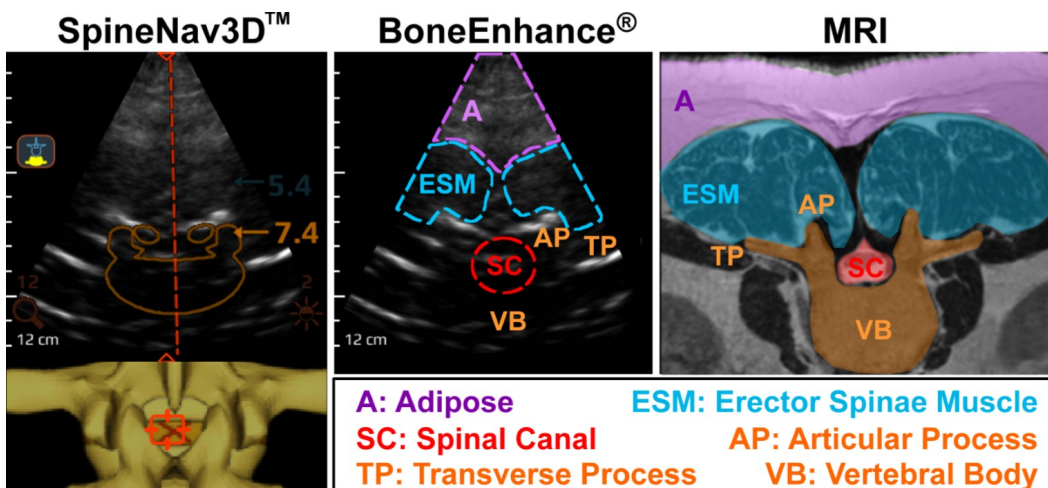

Figure 2. Clinical Accuro images from a morbidly obese parturient with BMI greater than 50. The SpineNav3D™ image (left) as it appears on the Accuro device in real-time. The underlying BoneEnhance® image (middle) from the same subject is shown with manually annotated anatomy matched to an MRI of the lumbar spine (right). BoneEnhance® is a proprietary image reconstruction technology with greater bone-to-tissue contrast compared to conventional B-mode ultrasound.

ABOUT ACCURO®

Accuro is the world's first ultrasound-based system specifically designed to help anesthesia providers effortlessly apply spinal and epidural anesthesia. Accuro's revolutionary image-guidance platform features SpineNav3D™, which automates measurements of the spinal midline, epidural depth and trajectory; and BoneEnhance®, a technology innovation designed to visualize bone landmarks, making it easier and faster (compared to conventional ultrasound) to interpret the underlying image. Accuro supports a sterile environment for optimal patient safety. For anesthesia providers, certainty can be effortless with Accuro.

For information about the easy-to-use Accuro or the medical-device company RIVANNA, please visit rivannamedical.com.

Rivanna Medical, Inc.
2400 Hunters Way
Charlottesville, VA 22911
USA
www.rivannamedical.com

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