The American Society of Regional Anesthesia and Pain Medicine and the European Society of Regional Anaesthesia and Pain Therapy Joint Committee Recommendations for Education and Training in Ultrasound Guided Regional Anesthesia

Why Do We Need These Guidelines?

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The American Society of Regional Anesthesia and Pain Medicine (ASRA) and the European Society of Regional Anaesthesia and Pain Therapy (ESRA) are 2 of the oldest societies of regional anesthesia (33 years and 27 years, respectively), whose missions are “to encourage specialization and research in regional anaesthesia, generally working to develop and further the knowledge of safe techniques for the management of pain, to assure excellence in patient care utilizing regional anesthesia and pain medicine, and to investigate the scientific basis of the specialty.”¹,² Excellence and safety are the cornerstones of the missions of both societies. Guidelines, recommendations, and/or practice advisories are used to obtain clarity regarding controversial topics, to provide clinical paradigms or pathways, and to provide forums for discussion of “hot topics.” Over the years, the collaborative efforts of both societies have produced the Consensus Conference on Neuraxial Anesthesia and Anticoagulation (ASRA), the Practice Advisory on Infectious Complications of Regional Anesthesia and Pain Medicine (ASRA), the Practice Advisory on Neurologic Complications of Regional Anesthesia and Pain Medicine (ASRA), and the General Recommendations and Principles for successful Pain Management (ESRA), to name a few.¹,² In this issue of *Regional Anesthesia and Pain Medicine*, ASRA and ESRA have joined forces to prepare a new set of guidelines for education and training in the use of ultrasound-guided regional anesthesia.³

The continuing increase in the use of regional anesthesia has engendered a need for new, safer, and more effective drugs, tools, and techniques. For instance, the technique of eliciting paresthesia was used for nerve detection for many years until the availability of new technology, that is, the nerve stimulator. Nerve stimulation has been used since the early 1980s and has reached such wide acceptance that the technique of purposefully eliciting paresthesia has been largely abandoned by most anesthesiologists. However, the basic tenets of the nerve stimulation have been criticized, and several articles have attempted to demonstrate the deficiencies of this technique.³ Controversy exists. Dr. Gregory Liguori⁶ has commented, “Our understanding of nerve stimulator-guided regional anesthesia continues to evolve… Long-held beliefs and ‘logical explanations’ have recently been challenged and refuted.” Indeed, Tsai et al⁷ have demonstrated in a large animal model that, contrary to common wisdom, intraneural needle placement does not lead to predictable motor response during stimulation: they found that motor response could be absent with intraneural needle placement at a current intensity of up to 1.7 mA. To further the safety of regional anesthesia requires that our 2 societies continue to collaborate on refining the technical aspects of neural blockade.

A new and exciting development that has the potential to further refine neural blockade is ultrasound-guided techniques pioneered by such luminaries as Drs. Kapral, Marhofer, Grau, and Chan⁸–¹¹ (to name a few). Their pioneering efforts have shown the utility of these new techniques. There is great enthusiasm for the use of ultrasonography in regional anaesthesia, and this is due to several factors. (1) Ultrasound-guided neural blockade is the first “real news” in the field of regional anesthesia for about 10 years. There have been few major advances since the description of the nerve
mapping technique and the introduction of the local anesthetics ropivacaine and levobupivacaine.12–20 (2) There has been a “flood” of publications in the last few years (>1220 articles—73 in the last 6 months alone!), raising enthusiasm for a technique that seems to be rapidly changing how we practice regional anesthesia.21 Indeed, our Journal now devotes an entire section to articles about ultrasound-guided regional anesthesia.22

Controversy remains as to the superiority of nerve stimulation or ultrasound-guided neural blockade. Looking beyond the potential risks associated with the technique, nerve stimulation can be more simply implemented. It is nothing more than an electrical response twitch produced by guiding an insulated needle toward a landmark. On the contrary, ultrasound-guided neural blockade requires not only a more-than-basic knowledge of anatomy but also the so-called “sonoanatomy.” This must be learned before attempting to use the technique. Without a thorough knowledge of sonoanatomy, the risk of malposition of a needle into a nerve or a vessel could be greater than with nerve stimulation.

The aim of ASRA and ESRA in developing guidelines was not to say or to show that ultrasound-guided neural blockade was superior to nerve stimulation. Only further time and research will determine any definitive differences with respect to safety and efficacy between the 2 techniques. Indeed, it is well stated in the introduction to the document that the beginner should use both techniques. The guidelines attempt to elucidate the minimum understanding of an ultrasound machine, how to use it, the requisite fund of knowledge to be acquired before attempting this new experience, and a pathway for residency training programs to teach, and residents to obtain, this special expertise. The guidelines are not designed purely for implementation by programs to teach, and residents to obtain, this special expertise but are designed for every anesthesiologist who wishes to use ultrasound-guided neural blockade in daily clinical practice.

The boards of directors of both societies nominated the members of the Joint Committee on Ultrasound-Guided Regional Anesthesia who worked together for the past year on this document. The Joint Committee solicited broad input from both academic and private practitioners in many different countries and practice settings. The document was then presented to the respective boards for approval and thereafter underwent extensive peer review before appearing in this publication.

The Joint Committee has attempted, in all manners possible, to avoid an implicit or explicit association of these guidelines with the credentialing or privileging processes. Neither the authors of the guidelines, nor ASRA and ESRA, intend to become involved in these issues. Indeed, speaking as the presidents of the respective societies, we do not have the power to do so; ASRA and ESRA intend these guidelines to provide a suggested infrastructure for residents and practitioners to become educated in ultrasound-guided neural blockade. Any and all issues surrounding educational requirements, credentialing, privileging, and so on, are at the discretion of local departments and hospitals.

It is the common belief of ASRA and ESRA that ultrasound-guided neural blockade is part of the armamentarium of the regional anesthetist. It is our collective vision that the future will bring many refinements in ultrasound-guided neural blockade, continued debate regarding the safety and efficacy of nerve stimulation versus ultrasonography, and, perhaps, fewer complications associated with regional anesthesia. Our hope is to see the Joint Committee’s work serve as a meaningful guide to ensure that all practitioners who adopt the use of ultrasound-guided regional anesthetic techniques will gain the needed knowledge and expertise to ensure the safest and most effective patient care.

REFERENCES