

# Training in ultrasound guided blocks

It is encouraging to see the sudden increase in articles pertaining to ultrasound guided (USG) regional blocks in patients of all age. Evidences for efficacy and safety have made it a choice of regional anesthesia in comparison to the conventional techniques. The new technology carries both advantages and disadvantages, and the main drawbacks of USG regional blocks are the cost of equipment and training of staff to practice these blocks successfully, with safety and satisfaction of the patient being the main goals. The disadvantages are equipment cost, complex and tedious learning curve of acquiring an image, recognizing the various structures (sonoanatomy), guiding the needle to the appropriate target and managing the patient actively during the whole procedure. Complications and mishaps are common with new recruits due to lack of understanding and lack of training or lack of supervision. A recent survey conducted by the American Society of Regional Anesthesia members revealed as many as 67% of the people who replied were using USG in their daily practice. With this number of anesthesiologists practicing regional anesthesia in adults and children, the outcome has to be evaluated for its efficacy and safety and there is no evidence available at least till recently as to the number of blocks a physician has to complete when he can be certified to practice USG safely.<sup>[1]</sup>

The use of ultrasound is set as a gold standard in many institutions practicing regional blocks, and in the near future, practicing regional anesthesia and intravascular access will need an ultrasound as standard equipment. Training of residents, junior and senior anesthesiologists is conventionally by observing an experienced operator performing a block and practicing needle maneuvering on models like chicken breast, turkey breast, live anesthetized animals, phantoms made of gel with simulated structures like artery, vein and nerve implanted inside. The trend of medical education is now to emphasize on outcomes rather than on the process of education and following

the trend educators in anesthesiology training programs who have set certain goals for attaining competency in USG, for example, the Anesthesiology Residency Review Committee of Accreditation Council for Graduate Medical Education has recommended a minimum of 40 USG blocks in the curriculum of a trainee anesthesiologist. In one observational study, trainees made an average of 2.8 errors after 60 USG blocks.<sup>[2]</sup>

Simulation based training is part of a training in all aspects of skill acquisition from pilots to deep sea diving and it is noticed that transfer of skills into the real-life environment has led to a safer and better outcome. Hence, simulation in medicine is a part of training for novices before they venture into clinical daily application of the procedures that they have been trained to perform through simulation. The other aspect of simulation is the amount of transfer of new skills, amount of knowledge gained and also how these are continuously maintained as skill decay is eminent between training and on job performance. Training by simulation allows the trainee to acquire certain skills in the laboratory environment and also helps the trainee to cross the steep initial curve of learning before venturing to the real-time clinical scenario. Virtual reality is an advancement in computer technology which allows a computer-generated environment, eliminating the physical models like chicken, turkey and other animals which may raise ethical issue and liability to animal rights groups. The advantage of this type of simulation is that various environments can be generated and repeated practice with needle insertion, manipulation and injections is made possible without the concern of degrading the quality of the model by repeated use of the same area.<sup>[3]</sup>

USG nerve blocks has a very encouraging future. In this issue of SJA three articles appeared pertaining to the practice in anesthesiology of regional techniques in both adult and pediatric patients.<sup>[4-6]</sup> We believe that workshops and simulations will play a major role in the training of competent practitioners in ultrasound regional blocks.

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Access this article online	
Quick Response Code:	Website: www.saudija.org
	DOI: 10.4103/1658-354X.82775

## REFERENCES

1. Shorten GD, O'Sullivan O. Simulation for training in Ultrasound-guided peripheral nerve blockade. *Int Anesthesiol Clin* 2010;48:21-33.
2. Ramlogan R, Manickam B, Chan VW, Liang L, Adhikary SD, Liguori GA, *et al*. Challenges and training tools associated with the practice of ultrasound-guided regional anesthesia: A survey of the American society of regional anesthesia and pain medicine. *Reg Anesth Pain Med* 2010;35:224-6.
3. Sites BD, Gallagher JD, Cravero J, Lundberg J, Blike G. The learning curve associated with a simulated ultrasound-guided interventional task by inexperienced anesthesia residents. *Reg Anesth Pain Med* 2004;29:544-8.
4. Tariq A, Abdulaziz A. Effect of bupivacaine concentration on the efficacy of ultrasound-guided interscalene brachial plexus block. *Saudi J Anaesth* 2011;5:190-4.
5. Al Harbi M, El Dawlatly A. How to set up a standard regional anesthesia service?. *Saudi J Anaesth* 2011;5:217-8.
6. Mahmoud KM, Ammar AS. Ultrasound-guided continuous infraclavicular brachial plexus block using bupivacaine alone or combined with adenosine for pain control in upper limb surgery. *Saudi J Anaesth* 2011;5:132-7.

**How to cite this article:** Delvi MB. Training in ultrasound guided blocks. *Saudi J Anaesth* 2011;5:119-20.