A Regional Anesthesia Cadaver Dissection Laboratory

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Introduction

Teaching regional anesthesia is challenging. Surveys of U.S. anesthesiology residencies suggest that regional anesthesia education is often inadequate (1). Successful peripheral nerve blockade requires well-developed psychomotor skills, an understanding the surgical procedure, and a thorough knowledge of the anatomy pertinent to the block (2). Failure to comprehend anatomic relationships may lead to inaccurate needle placement, inadequate pain control, nerve injury or systemic toxicity of local anesthetics (3). A cadaver dissection laboratory was developed to teach regional anesthesia anatomy to residents at the University of Pittsburgh School of Medicine, as part of a one-month core rotation in regional and ambulatory anesthesia.

Methods

A daylong dissection laboratory is conducted on a quarterly basis for residents involved in the ambulatory/regional rotation. The laboratory requires that several teams of two residents dissect a preserved cadaver in order to explore anatomic relationships relevant to the following peripheral nerve blocks: interscalene block, infraclavicular block, axillary and midhumeral block of the brachial plexus, femoral nerve block, lateral femoral cutaneous nerve block, sciatic nerve block at the gluteal region and at the popliteal fossa, ankle block and lumbar plexus block. A previously dissected specimen is used for teaching and comparison during the course. A pretest and posttest are administered on the day of the lab to test improvement in knowledge related to regional anesthesia. In addition, residents complete a post-course survey relating their impressions of the quality of the teaching and the value of the experience. Approval for this educational protocol was obtained from the Committee which Overseas Research Involving the Dead (CORID) at our institution.

Results

A total of 16 residents have participated in the laboratory to date. The mean number of correctly answered questions on the pretest, out of a total of 8, was 2.8 +/- 1.3 (SD), while the mean score on the posttest was 7.5 +/- 0.5 ($p < .001$). Results of the feedback survey appear in Table I.

Discussion

A regional anesthesia dissection laboratory appears to enhance anesthesiology residents' knowledge of anatomy pertinent to the conduct of peripheral nerve blockade. Residents displayed an improvement in posttest scores. They manifested a high degree of satisfaction with this educational experience and its impact on their ability to utilize nerve block techniques.

Table I. Feedback Survey Results (mean score out of possible 5)

How would you rate the quality of teaching?	5.0
The lab improved knowledge of anatomy?	4.4
The lab improved skills in peripheral nerve blockade?	4.4
The lab contributed to patient safety?	4.7
Would you recommend this lab to other residents?	5.0

References:

1. Smith MP, Sprung J, Zura A, et al. A survey of exposure to regional anesthesia in American anesthesia residency training programs. Reg Anesth Pain Med 1999;24:11-16.
2. Greher M and Kapral S. Is regional anesthesia simply an exercise in applied sonoanatomy? Anesthesiology 2003;99:250-1.
3. Perlas A, Chan VWS, Simons M. Brachial plexus examination and localization using ultrasound and electrical stimulation. Anesthesiology 2003;99:429-35.