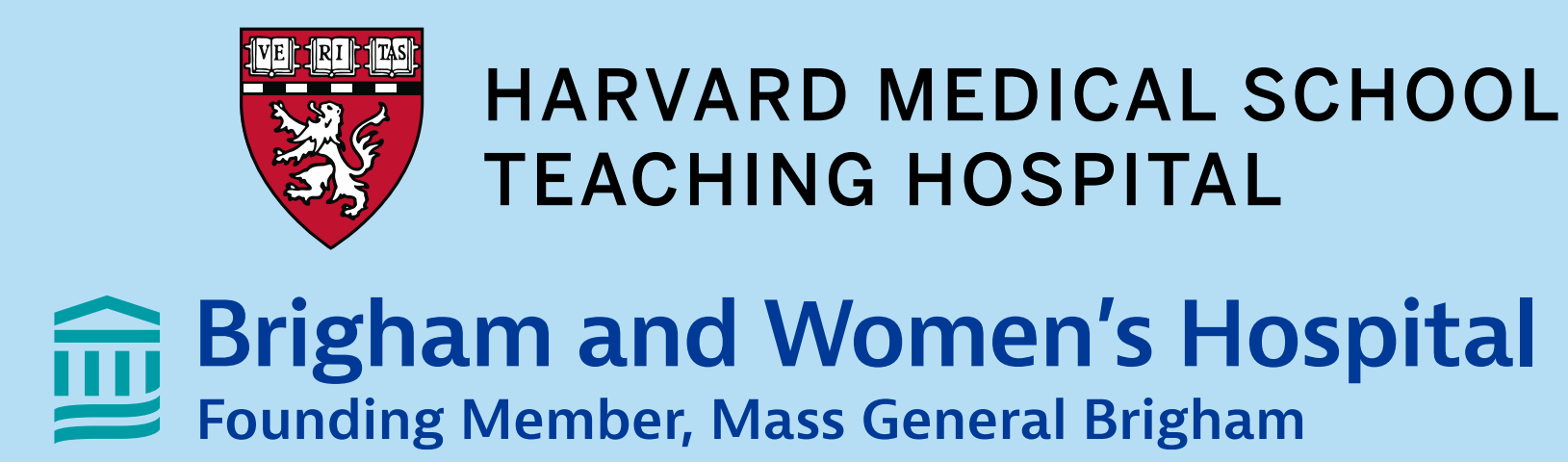




Comparing Educational models: A Survey of Anesthesia Resident Confidence in Performing Peripheral Nerve Blocks

Kimia Ziadkhanpour, MD¹; Alexander Stone, MD¹; Philipp Gerner, MD²; Kamen Vlassakov, MD¹; Devon Flaherty, MD, MPH¹; Archana O'Neill, MD¹; Brinda Kamdar, MD²

¹ Mass General Brigham, Department of Anesthesiology Division of Regional Anesthesia and Acute Pain Medicine at Brigham and Women's Hospital
² Mass General Brigham, Department of Anesthesiology Division of Regional Anesthesia and Acute Pain Medicine at Massachusetts General Hospital



INTRODUCTION

Regional anesthesia has multiple benefits, including improved post-operative pain control, sparing of opioids, and shortened length of stay in the recovery room when compared to general anesthesia alone [1]. Competence in performing ultrasound-guided peripheral nerve blocks (PNBs) has become an integral component of residency education. Residency programs vary in the way they structure regional training; some residency programs have residents perform blocks for their own cases as they arise throughout their training, whereas others have a dedicated block rotation [2]. In this survey study, we compare the level of exposure and confidence in trainees at programs with these two different training philosophies.

METHODS

After obtaining exemption from the Institutional Review Board, we compiled a brief online survey that was disseminated to all current anesthesiology residents across two large academic medical center training programs. Program A residents have a dedicated nerve block rotation where they provide PNBs in the pre-operative area for one month duration and Program B residents perform PNBs as needed for their assigned daily cases. Information was gathered on the number of ultrasound-guided PNBs performed, level of confidence in both single shot and continuous catheter techniques, as well as perceived necessity for further electives and fellowship to perform PNBs confidently in future independent practice.

RESULTS

- We had 19 responses from Program A and 13 from Program B.
- Majority of respondents were in the CA2-3 classes in both groups (78% in Program A and 84% in Program B).
 - Of Program A, 7 had not completed either an acute pain rotation or the dedicated block-rotation. Of Program B, only 2 had not completed either acute pain rotation or had not done blocks for their own cases.
 - A greater proportion of residents in Program B had completed more than 40 total blocks in their residency and the timing of the blocks was more evenly spread out across the last year (i.e. not limited to one month period).
 - Overall, confidence in performing peripheral nerve blocks with catheters was lower than performing single shot blocks. For single shot blocks, residents in Program B overall expressed higher confidence in performing blocks for upper extremity, lower extremity and abdominal surgeries.
 - Almost all residents agree that a fellowship is not required to perform blocks in their future practice.

Table of Key Findings

	Program A	Program B
Total Respondents	19	13
Training Levels		
CA1	4	2
CA2	10	5
CA3	5	6
Type of Rotations Completed	11 completed block-team dedicated core rotation 5 completed APS rotation 7 did not complete either	11 completed blocks for own cases 10 completed APS rotation
Additional Rotations	2 completed additional rotation	8 had completed other rotations
Number of Blocks performed in the last year	15 (78%) within the 0-20 range 1 (5%) within 31-40 range 3 (16%) in the 60+ range	5 (38%) within the 0-20 range 2 (15%) within 31-40 range 1 (7%) in the 60+ range
Total Number of Blocks in residency	46.7% less than 0-20 26.6% more than 40	31% less than 0-20 54% more than 40
Timing of Blocks	Majority done in the last 6 months, very few had done blocks in the last week	Equal numbers done in the last week, as in the last month and last 6 months
Confidence in Performing Single Shot Blocks (Median; Mean values for scale 0-100)		
Shoulder Surgery	6; 21.5	50; 40.1
Hand Surgery	7; 20.5	50; 47.6
Abdominal Incision	4; 16.2	61; 52.3
Knee Surgery	14; 37	75; 69.5
Ankle/Foot	5; 26.5	61.5; 60.25
Other Key Findings	• >70% agree that it is important to have a regional block core rotation • >75% agree that they need more elective time to increase comfort levels • 20% Agree that fellowship is required to perform blocks in future practice	• >90% agree having a dedicated regional block core rotation is important • 85% agree they would still maintain the “block as you go” method • 15% agree that a fellowship is required to perform blocks in future practice

Table outlining the key findings from surveys sent to Program A, where residents have a dedicated block rotation (duration one month), as well as Program B, where residents perform nerve blocks as needed for their daily cases. Both programs have additional elective rotations for senior residents, such as in surgery centers. APS= acute pain service.

DISCUSSION

Residents in Program B reported higher satisfaction with their regional anesthesia education although all respondents agreed that having a dedicated block rotation to supplement their training would be beneficial. Meanwhile, only 43% of Program A residents agreed that doing blocks for their own cases would enhance their regional anesthesia training. All residents were less confident with indwelling catheters compared with single shot peripheral nerve blocks.

Nearly all residents reported that they did not believe fellowship was needed to increase comfort level with PNBs. Our findings suggest that even though all residents surveyed do meet the ACGME requirement for 40 PNBs throughout residency, this number may be inadequate for majority of residents to feel comfortable with a subset of PNBs commonly used in practice, as Kpacz also concluded [3]. Education of ultrasound-guided PNBs needs standardization across programs, and our findings suggest that a dedicated regional rotation is a valuable component for anesthesiology residents.

CONCLUSION

- No perfect method of teaching PNBs exist, although based on our findings residents state they would benefit from dedicated block rotations and results suggest the “block as you go” method also has its benefits (more intermittent, year-long exposure to different blocks).
- Residents who are exposed to PNBs as part of their daily cases may build more confidence over time as they get to build on their previous experiences.
- Our study has limitations; we would like to expand the study to reach more residents within these programs as well as at other programs. This would allow us to draw conclusions about the statistical significance of our findings.

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