

Implementation of a point of care ultrasound course in an Otolaryngology residency program

Patricia Johnson MD,¹ Bahbak Shariat-Madar,¹ Christopher Fundakowski,^{1,2}

Department of Otolaryngology Lewis Katz School of Medicine¹ and Fox Chase Cancer Center², Philadelphia, PA

ABSTRACT

Objective: The American Academy of Otolaryngology – Head and Neck Surgery (AAOHNS), and the American Institute of Ultrasound in Medicine (AIUM) have created formal pathways for physicians to attain accreditation in head and neck ultrasound (US). We have previously identified the need to integrate formal US curricula into otolaryngology residency training. We report our results after implementing a point of care US (POCUS) course into our residency.

Methods: A formal POCUS course was implemented for otolaryngology residents at Temple University. The course included an orientation video, an US lecture, an opportunity to perform a neck US on a live volunteer and US-guided biopsy on a phantom model with the instruction of an accredited physician. Residents were given a pre and post-course survey grading comfort level on a scale of 1 to 3 (1=not comfortable, 3=comfortable)

Results: 100% of respondents reported desire for inclusion of formal POCUS training in the residency curriculum, and if trained, they would utilize US more often. Average scores for comfort with US equipment (1.6 vs 2.7, p=0.001), diagnosing pathology (1.1 vs 1.9, p=0.002), performing needle biopsy (1.4 vs 2.0, p=0.03).

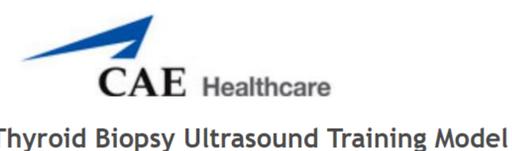
Conclusions: Resident reported comfort with head and neck POCUS significantly increased after a formal training course. The next step is to implement a 5 year curriculum based on the AAOHNS and AIUM pathways, giving residents the opportunity to achieve accreditation in head and neck US.

INTRODUCTION

- Point of care ultrasound (POCUS) is a low risk, cost effective method of diagnosing head and neck pathology that can offer seamless integration to tissue diagnosis and treatment.
- Inadequate training leads to underutilization and outsourcing.
- This outsourcing can lead to delay in imaging, diagnosis, and treatment.
- Meachem and Sebelik 2012 conducted a survey of Otolaryngology residencies showing only 50% of respondents had informal US training and the percentage of PGY5 residents that had performed US was exceedingly low.
- Studies have shown that simulation significantly increases resident proficiency.
- We aim to show our results in implementing a formal POCUS course into our Otolaryngology residency program.

METHODS

- Simulation-based course
 - Provided a brief instructional video to orient resident participants to thyroid ultrasound
 - Provided short lecture on thyroid ultrasound basics
 - Trainees practice using thyroid ultrasound on a live volunteer
 - Trainees practiced biopsy with the thyroid ultrasound Blue Phantom model (Figure 1).
- Surveys were given pre and post course to participants to evaluate comfort on a scale of 1 to 3 (1 = not comfortable, 3 = comfortable)
- Excel was used for statistical analysis.



RESULTS

Survey Results

	Yes	Maybe	No
Do you think formal training in using the ultrasound would be useful for ENT residents?	9 (100%)	0	0
Do you plan on using ultrasound in your practice when you graduate?	6(66%)	1(11%)	1(11%)
Have you ever had formal ultrasound training?	2(22%)	-	7(78%)
Would you use the US more often if you had formal training?	7(100%)	-	-

Table 1. Pre course questions demonstrating lack of previous formal training and desire

Survey Results

Question	Pre Course	Post Course	P value
How comfortable are you with using ultrasound equipment?	1.6	2.7	0.001
How comfortable are you with correctly identifying head and neck anatomy using an ultrasound?	1.7	2.3	0.06
How comfortable are you at diagnosing head and neck pathology using ultrasound?	1.1	1.9	0.002
How comfortable are you with identifying a parathyroid adenoma using the ultrasound?	1.1	1.6	0.2
How comfortable are you with performing a biopsy of a thyroid nodule using ultrasound?	1.4	2.0	0.03
How comfortable are you in your ability to identify findings concerning for malignancy on thyroid ultrasound?	1.3	1.9	0.02

Table 2. Pre and post course averages for the 9 residents who participated. Bolded P values are those that were significantly different on student's T test when P is set at 0.05.

DISCUSSION

- With the growing application of POCUS in the field of otolaryngology, it is becoming glaring that residents are receiving inadequate training.
- We have shown that formal POCUS training in a residency can significantly increase resident proficiency however there is room for further improvement.
- The American Academy of Otolaryngology – Head and Neck surgery and the American Institute for Ultrasound Medicine have created pathways for physicians to achieve accreditation in head and neck ultrasound.
- Implementation of formal head and neck POCUS training into otolaryngology residency programs can give residents the opportunity to gain sufficient proficiency to achieve accreditation in head and neck POCUS.