Results

- 30 subjects (maximal motion trials).
- Significant difference in operating room times.
- For both dominant and non-dominant wrists.
- No significant difference in STAEs.
- Dominant hand showed higher values.

Suprathreshold Acceleration Events

Despite maximal motion, Expert and Expert Novice motion varies by 10%. Validation of patient compliance and evaluations.

Funding from [Student Research Grant].
I switched places for the results box and the methods box. Does this look okay?
Edward J. Callahan, 5/2/2016
Correlation between Expertise and Wrist Motion in Simulated Otolaryngological Surgery

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Objective
To determine whether wrist motion correlates with surgical performance as measured by objective structured assessment of technical skills (OSATS) performance in simulated cricothyroidotomy on a previously validated task trainer.

Methods
- Volunteer subjects (novice and expert) viewed a standardized training video and then performed cricothyroidotomy on a simulator.
- Smartphones with accelerometers were fixed to both wrists.
- Procedures were video recorded
- Procedure time and acceleration data in three planes were recorded for both dominant and non-dominant hands.
- 2 blinded expert surgeons scored all videos using OSATS
- T-tests were used to compare scores between novices and experts
- Volunteer subjects (novice and expert) viewed a standardized training video and then performed cricothyroidotomy on a previously validated task trainer.

Results
- 30 subjects demonstrated OSATS scores ranging from 7 to 29 (maximum possible 30)
- Significant differences between novices and experts in procedure time (p<0.001).
- For both hands, significant differences were seen in TRA and STAEs
- No significant difference was seen in ARA for either hand.

Conclusions
Despite the need for digital dexterity in cricothyroidotomy, wrist motion as measured by a low cost smartphone application varies between novice and expert OSATS performance in a validated simulation task trainer and may thus provide complimentary performance feedback and opportunity for evaluation.

References