AANA Fundamentals of Arthroscopic Surgery Training (FAST) Program

Background:

The Fundamentals of Arthroscopic Surgery Training Program was established in 2011 as a collaborative effort by AANA, ABOS, and AAOS. The goals were to establish a structured basic skills training curriculum for arthroscopic surgery and to create a cost-effective workstation that would facilitate completion of that curriculum. This would provide orthopaedic residency programs at least one option to satisfy ACGME mandates regarding surgical skills simulation.

Curriculum Design:

The "FAST Program" is the curriculum that was designed by the committee and essentially represents the group's efforts to *deconstruct* arthroscopy into very basic motor skills elements, followed by *construction* of training modules that are directed at these specific psychomotor elements. This curriculum consists of 6 basic modules. Each module follows a structured outline and is accompanied by a series of videos to allow for easy duplication. These documents are available on both the AANA[1] and ABOS[2] websites.

FAST Workstation:

The "Fast Workstation" is a low-cost, low fidelity, simulator which facilitates the completion of the FAST Program. The committee selected a vendor with prior experience producing bone and joint models (Sawbones, Pacific Research Labs) to create the FAST workstation. Purchase is available on their website: https://www.sawbones.com

Proof of Concept:

Our hope is that the FAST Workstation will provide an effective way to facilitate the instruction, practice, and evaluation of basic surgical skills. This concept was initially tested utilizing the FAST Workstation Knot Tying module and the FAST Knot Tester at an OLC style skills course. We were able to demonstrate that residents who completed the curriculum using the FAST Workstation Knot Tying module outperformed residents and experienced OLC faculty who completed a traditional knot tying training curriculum[3].

Workstation Completion and Benchmarking:

A total of 6 basic skills modules have been created. These include: Visualization and Probing, Ring Transfer, Maze, Biting, Suture Passing, and Knot Tying. Benchmarks for each module were established by assessing the mean performance of OLC faculty for each of the modules. Data was collected at OLC resident courses in 2017. This work is awaiting publication.

Current Work:

Construct Validation:

A multicenter study was completed in 2018 to evaluate the construct of the FAST Program. Medical Students and Residents from four orthopaedic programs with no previous FAST training were asked to complete each of the 6 modules. Their scores were compared to the previously established benchmarks

with the hypothesis that senior residents would perform better than junior residents and that both would outperform medical students. Data analysis for this project is underway.

Proficiency Based Curriculum and Web-Based Learning Platform:

Concurrent with the construct validation project, a proficiency-based curriculum utilizing the previously established benchmarks and the FAST Workstation was developed. This curriculum was adapted and published to a web-based learning platform (beta 2019)[4]. This website facilitates resident self-directed learning as well as instruction at the OLC.

Transfer Validity:

We were awarded grant funding by ABOS and AANA to evaluate the transfer effectiveness of FAST Training on surgical skill in the operating room. This will be accomplished in three phases, each designed to evaluate a different training methodology. Phase I will evaluate the effect of self-directed training utilizing the web-based learning platform on intra-operative surgical performance. Phase II will evaluate the effect of an AANA sponsored OLC FAST training course on intra-operative surgical performance. This will occur February 16-17, 2020 at the OLC. Phase III will evaluate the effect of a residency program-based training course on intra-operative surgical performance.

References:

1. https://www.aana.org/aanaimis/Members/education/fast/basic-arthroscopy-skills.aspx
2. https://www.abos.org/wp-content/uploads/2019/07/Module-14-Basic-Arthroscopy-Skills-edit.pdf
3. Pedowitz, RA., Nicandri, GT., Angelo, RL., Ryu, RK., Gallagher, AG. Objective Assessment of Knot-Tying Proficiency With the Fundamentals of Arthroscopic Surgery Training Program Workstation and Knot Tester. Arthroscopy. 2015 Oct;31(10):1872-9.
4. https://fast-program.com/

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