Design and Impact of a Musculoskeletal (MSK) Image-Guided Procedure Curriculum for Radiology Residents

Samarth Gola, MD; Peter Haar, MD, PhD; Kevin Hoover, MD, PhD; Josephina Vossen, MD, PhD
Department of Radiology, Virginia Commonwealth University Health System, Richmond, VA

Introduction

• Fluoroscopy-guided joint intervention more accurate and effective than palpation-guided, but risk of radiation
• Previous studies have investigated MSK interventional curricula on resident performance metrics in patient simulators and phantoms
• Our institution piloted its own curriculum and tracked outcomes in real patient cases

Methods

• n = 317 (196 pre- vs. 121 post-education)
• Curriculum: online training module, hands-on equipment orientation, observing procedures
• Metrics: fluoroscopy time, total procedure time, technical competency, patient satisfaction

Results

• Statistically significant decrease in fluoroscopy time only (subgroup analysis: residents on rotation #2, on rotation #3, and in the R3 class)
• No difference in other metrics outlined above

Discussion

• MSK interventional curriculum improved several performance metrics (e.g., technical competence, fluoroscopy usage)
• Generally greater benefit when curriculum applied earlier in training
• Further studies to increase statistical power, decrease selection bias, etc.

References


Figures

Figure 1: Musculoskeletal (MSK) image-guided procedure day one tutorial outline
Figure 2: Example question from the anatomic reference section of the supplemental online training module
Figure 3: Mean fluoroscopy times significantly decreased between pre- and post-training residents
Figure 4: Mean fluoroscopy times decreased significantly between pre- and post-training residents in the R3 class only
Figure 5: Mean fluoroscopy times decreased significantly between pre- and post-training residents on their second and third musculoskeletal rotations