Combined Approach to Building a Successful and Sustainable Breast Procedure Workshop

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No disclosures.
Background

• Increasing emphasis on simulation training in graduate medical education
  • Decreases patient adverse patient outcomes
  • Trainees acquire skills through deliberate practice
  • Trainees develop procedural aptitude without fear of harming patients

• The need for clinical skills in breast imaging allows for use of simulation-based education
  • Diagnostic skills and clinical reasoning
  • Procedural planning skills
  • Procedural and psychomotor skills

• Simulation is an adjunct for learning, not a replacement
Background

• Challenges with breast phantom models
  • Limited by cleanliness (raw meat model)
  • Excessive production time (recipe-based gel phantom model)
  • Limited longevity/ability to use repeatedly

• Challenges of teaching ultrasound-guided breast procedures
  • Often anxious and nervous patient population
  • Non-sedated procedure
  • Little margin for error (accurate diagnosis, radiology-pathology concordance)

• Challenges of annual/biannual procedure workshop
  • Difficult to align with trainee rotations for immediate utilization of skills
Purpose

• To develop a Breast Imaging procedures workshop that addresses:
  • Principles of procedural planning and clinical reasoning skills included in the ACR/SBI Resident and Fellowship Training Curriculum
  • Procedural aptitude with a sustainable simulation model
Methods/Materials

• Two-part educational workshop

• Developed in collaboration with The University of Kansas Medical Center Zamierowski Institute for Experimental Learning (ZIEL)
  • ZIEL provides advanced educational resources in creating simulation and experimental learning
  • ZIEL team members guided development of program without use of the simulation facility or resources
Methods/Materials

• Part 1: 45-minute didactic session
  • Indications/contraindications
  • Patient consent process
  • Equipment
  • Preparation
  • Technique of ultrasound-guided procedures
  • Table-top simulation of selected biopsy cases for imaging review and procedural planning

• Part 2: 45-minute hands-on ultrasound simulation
  • Manufactured breast phantom
  • Psychomotor skills practice
Methods/Materials

• Part 1: 45-minute didactic session (example Powerpoint slide)

**Ultrasound Guided Biopsy**

- Positioning
  - Optimal position to maximize safety and ease of access to target lesion
    - Elevating and flattening the breast
    - Wedges, arm position, rolled towels
    - Operator hand positioning
    - Plan for entering the skin
      - Transducer positioning for needle entry parallel to chest wall and perpendicular to ultrasound beam
      - Assess surrounding structures
Methods/Materials

• Part 2: 45-minute hands-on ultrasound simulation (in a standard patient room)
Results

- Workshop offered during each 4-week breast imaging rotation during the first 1-2 weeks
- Required for trainee’s first rotation on breast imaging (resident or fellow)
- Seven workshops have been conducted, each with 2-3 trainees and 1-2 breast imaging faculty
  - Allows 1:1 or 1:2 learning
  - Skills acquired during breast rotation for greatest applicability
  - Because workshop is offered on all breast rotations and multiple times per year, trainees are able to build and fine-tune skills
Results

• Resident feedback:
  • “I liked the hands-on experience without the pressure of a patient being present.”
  • “I liked the immediate feedback from staff as I was working on practicing with the ultrasound probe and biopsy device.”
  • “I think the workshop gives some confidence before going to work on patients.”
  • “As a senior resident, I think the Powerpoint was the most helpful. It was short and basic, but covered the major points. I hadn’t been on breast imaging for awhile so a lot of that knowledge was dormant.”
Results

• Two-part workshop structure
  • Allows scheduling flexibility for faculty and trainees
  • Addresses different aspects of breast procedures

• Sustainability achieved
  • With use of re-usable manufactured breast phantom
  • Ability to schedule into the workday
  • Re-use of biopsy devices
Results

• Challenges exist in teaching US-guided breast procedures
• A successful training program can be implemented which emphasizes:
  • Procedural planning
  • Procedure preparation
  • Interpersonal anxiety-relieving interactions with patients
  • Hands-on simulation training
Conclusions

• A workshop model that combines a two-part interactive didactic session followed by simulation training with a breast phantom is an attractive method to:
  • Introduce ultrasound guided procedures to trainees
  • Allow trainees to obtain hands-on experience prior to performing breast procedures on patients

• Our hope is that other programs will use and improve on this model!
References


