Simulated training for ultrasound-guided procedures improves safety without risk to patients

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The 12,000-square-foot Center for Simulation, Education and Research at Henry Ford Hospital is the largest surgery simulation center in the Midwest. The facility houses two operating theatres, six clinical rooms, a minimally invasive procedure lab with more than 30 stations, and two classrooms. Fully-equipped, reconfigurable rooms simulate surgery, labor and delivery, intensive care, emergency and routine hospital scenarios. Credit: Henry Ford Health System

Using mannequins to teach doctors-in-training how to do ultrasound-guided procedures is an effective way to improve their skills without compromising patient care and safety, according to a new study from Henry Ford Hospital.

The study shows that this simulation-based training course can be a valuable tool to improve medical residents' knowledge, dexterity and confidence for performing some of the more common ultrasound-guided procedures, including breast biopsies, liver biopsies, thyroid biopsies and the removal of fluid in the body. Plus, a simulated model allows for

standardization of medical education.

"The mannequins allow us to simulate actual ultrasound guided procedures, which offers residents a unique training opportunity prior to working on real patients," says study co-author John W. Bonnett, M.D., a radiologist at Henry Ford Hospital. "Ultimately, the residents in our study became more proficient and efficient in performing these procedures."

Study results will be presented by co-author Mishal Mendirata Lala, M.D., at the Radiological Society of North America Annual Meeting in Chicago.

For the study, researchers enrolled 29 radiology residents from all four levels of training. The residents were given written, video, and live interactive training from staff on the basics of ultrasound guided procedures.

Residents had six months to practice these skills at the 12,000-square-foot Center for Simulation, Education and Research at Henry Ford Hospital, the largest surgery simulation center in the Midwest. The facility houses two operating theatres, six clinical rooms, a minimally invasive procedure lab with more than 30 stations, and two classrooms. Fully-equipped, reconfigurable rooms simulate surgery, labor and delivery, intensive care, emergency and routine hospital scenarios.

As part of the study, residents used phantom mannequins that contained both hypo- and hyperechoic nodules to simulate the ultrasound procedure. Written and practical examinations were given before and after training to assess for changes in competency and proficiency.

Study results show a significant improvement between the residents' pre- and post-test scores on both the written and practical exams. After

training, residents also demonstrated improved dexterity in the technical aspects of ultrasound guided procedures.

On the survey questionnaire, residents said that the course improved their knowledge level and technical ability for ultrasound guided procedures. It also boosted their confidence for performing biopsies.

In all, the researchers say, this additional simulation training translates to improved patient care and safety, as well as patient satisfaction, decreased risk of complications, decreased procedural time, and the ability to improvise in difficult or unexpected situations

As a result of these study findings, Henry Ford Hospital has expanded this course to include simulated training for CT-guided interventional procedures.

Source: Henry Ford Health System (news : web)

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