

Abstract

Screening unfixed cadavers with handheld ultrasound as a new teaching modality

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Abstract

Introduction: With the introduction of portable handheld ultrasounds, higher levels of technology are more easily available for patients in rural and underserved communities. Point-of-care ultrasound (POCUS) increases accessibility for patients with limited resources, thus reducing costs and decreasing the risk of non-compliance or subsequent loss to follow-up. Despite the increasing utility of ultrasonography, literature demonstrates a lack of sufficient training in POCUS and ultrasound-guided techniques for Family Medicine residents. Integrating unfixed cadavers into the preclinical curriculum may be an ideal adjunct to simulating pathologies and screening sensitive regions.

Methods: In total, 27 unfixed, de-identified cadavers were scanned with a handheld portable ultrasound. Sixteen body systems were screened: ocular, thyroid, carotid artery/internal jugular vein, brachial plexus, heart, kidneys, pancreas, gallbladder, liver, aorta and inferior vena cava, femoral artery and vein, knee, popliteal vessels, uterus, scrotum, and shoulder.

Results: Eight of the sixteen body systems, including the ocular, thyroid, carotid artery/internal jugular vein, brachial plexus, liver, knee, scrotum, and shoulder, consistently showed accurate anatomy and pathology. A physician skilled in ultrasound reviewed images obtained from the cadavers and concluded that differences in anatomy and common pathologies of unfixed cadavers were indiscernible compared with live patient ultrasound images.

Discussion: Using unfixed cadavers in POCUS training can be a valuable educational tool in preparing Family Medicine Physicians for rural or remote practices because the cadavers display accurate anatomy and pathology under ultrasound evaluation in multiple body systems. Further studies should explore creating artificial pathologies in cadaveric models to broaden the scope of application.

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