“How Does Musculoskeletal Ultrasound Imaging Help Clinicians?”

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Abstract (400 words maximum)

Musculoskeletal ultrasound (MSK-US) uses sound waves to produce images of the bone cortex, muscles, nerves, tendons, etc. The use of musculoskeletal ultrasound in different specialties’ clinical practice has expanded rapidly over the last two decades, but the diagnostic use in fractures is not routinely practiced. Many experts consider musculoskeletal ultrasound as the new standard of care in many specialties including, but not limited to, orthopedics, pain management, physical therapy, emergency medicine, etc. The vast majority of injuries seen in musculoskeletal practice may not be from broken bones but from tendon sprains or muscle strains aka surrounding tissues. Ultrasound is very good when looking at the soft tissues of the body. Using musculoskeletal ultrasound, the clinician can visualize the current physiologic state of the tissue and assess the entire inflammatory spectrum from the acute stage to resolved fibrosis. Tendon tears may be accompanied by bone cortex changes i.e. avulsion fractures, arthritic changes, etc. Ultrasound is excellent in detecting early arthritic changes identified by cortical irregularities. The bone cortex will appear as a smooth intact continuation of hyperechoic signals on the ultrasound screen. The disruption of the continuity of the cortex suggests a fracture. Cortical irregularities and spikes within a joint can be interpreted as arthritic changes that can be spotted early. Some studies suggest that ultrasound may have an equal or higher sensitivity to bone fractures compared to x-rays. Ultrasound is safe because there is no patient exposure to ionizing radiation. In physical therapy practice, musculoskeletal ultrasound can assist in a proper evaluation which is the cornerstone of successful treatment.

keywords: musculoskeletal ultrasound, bone, mskus.

Figure 1: