Summary

Musculo-skeletal ultrasound is a useful way of examining the muscles, tendons, ligaments,blood vessels,nerves,other soft tissues and joints of the body to detect problems.

It is a real time examination so it can show anatomy, movement and function to enable the ultrasound practitioner to diagnose a variety of conditions and assess damage after an injury or illness. This specialized type of ultrasound is used anywhere in the body but especially in the shoulder, hip region, ankle , heel and wrist.

Musculo-skeletal ultrasound can be used for the investigation of pain in the joints or in the soft tissues, such as ankle joint pain. It is also very useful in the diagnosis and assessment of sports injuries such as tears in the muscles or tendons. It is used for the diagnosis of "lumps and bumps" throughout the body. Ultrasound can assist in guiding needles into various regions to obtain samples for accurate diagnosis of different masses in the body.

In patients with pain and/or swelling of the ankle and foot, US provides information about the presence of joint effusion, synovitis, tenosynovitis,tendinosis, and tendons tears, helping in the differential diagnosis between joint or tendon/enthesis involvement. (34)

Pain and/or swelling of the ankle and foot are very frequent in patients with arthritis. As every clinician knows, the evaluation of these anatomic structures is difficult because clinical assessment often underestimates the manifestations and cannot distinguish between involvement of the joint, tendon and enthesis. Furthermore, plain radiographs provide very little information about the soft tissues while MRI is expensive and not easily accessible. (45)

Moreover, US allows clinicians to monitor and guide needle positioning to inject pharmaceutical substances more safely and effectively even in hard-to-reach sites. (34)

Continual improvement in technology, wide availability, safe and relatively lower cost are factors contributing to the growth of sonography, which is becoming more frequently utilized in the routine evaluation of the musculoskeletal system.

Compared to other cross-sectional modalities, ultrasound has several inherent advantages, which also apply to the musculoskeletal system. Among these are ready accessibility, portability, quick scan time, and better patient tolerability.

The dynamic, real-time nature of sonography requires personal interaction with the patient,oftenresulting in a more directed examination, specific for each individual.

Advances in technology with higher frequency transducers, color/power Doppler capability, and extended field-of-view (FOV) function have facilitated the progressive development of sonography. Newer innovative features such as tissue harmonics and 3-D imaging may prove to be beneficial in the diagnosis of musculoskeletal disorders.

Recently, there has been increased demand for expanding the clinical applications of musculoskeletal sonography. (3)