

Comparison between High Resolution Ultrasonography and Magnetic Resonance Imaging in Assessment of Musculoskeletal Disorders Causing Ankle Pain

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Abstract : There are various causes of ankle pain including traumatic and non-traumatic causes. Various imaging techniques are available for assessment of AP. MRI is considered to be the imaging modality of choice for ankle joint evaluation with an advantage of its high spatial resolution, multiplanar capability, hence its ability to visualize small complex anatomical structures around the ankle. However, the high costs and the relatively limited availability of MRI systems, as well as the relatively long duration of the examination all are considered disadvantages of MRI examination. Therefore there is a need for a more rapid and less expensive examination modality with good diagnostic accuracy to fulfill this gap. HRU has become increasingly important in the assessment of ankle disorders, with advantages of being fast, reliable, of low cost and readily available. US can visualize detailed anatomical structures and assess tendinous and ligamentous integrity. The aim of this study was to compare the diagnostic accuracy of HRU with MRI in the assessment of patients with AP. We included forty patients complaining of AP. All patients were subjected to real-time HRU and MRI of the affected ankle. Results of both techniques were compared to surgical and arthroscopic findings. All patients were examined according to a defined protocol that includes imaging the tendon tears or tendinitis, muscle tears, masses, or fluid collection, ligament sprain or tears, inflammation or fluid effusion within the joint or bursa, bone and cartilage lesions, erosions and osteophytes. Analysis of the results showed that the mean age of patients was 38 years. The study comprised of 24 women (60%) and 16 men (40%). The accuracy of HRU in detecting causes of AP was 85%, while the accuracy of MRI in the detection of causes of AP was 87.5%. In conclusions: HRU and MRI are two complementary tools of investigation with the former will be used as a primary tool of investigation and the latter will be used to confirm the diagnosis and the extent of the lesion especially when surgical interference is planned.

Keywords : ankle pain (AP), high-resolution ultrasound (HRU), magnetic resonance imaging (MRI) ultrasonography (US)

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