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Aetiology and mechanisms of injury in Medial Tibial Stress Syndrome: Current and future developments

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2 Abstract

Medial Tibial Stress Syndrome (MTSS) is a debilitating overuse injury of the tibia sustained by individuals who perform recurrent impact exercise such as athletes and military recruits. Characterised by diffuse tibial anteromedial or posteromedial surface subcutaneous periostitis, in most cases it is also an injury involving underlying cortical bone microtrauma, although it is not clear if the soft tissue or cortical bone reaction occurs first. Nuclear bone scans and magnetic resonance imaging (MRI) can both be used for the diagnosis of MTSS, but the patient's history and clinical symptoms need to be considered in conjunction with the imaging findings for a correct interpretation of the results, as both imaging modalities have been shown to show positive findings in the absence of injury. However, MRI is rapidly becoming the preferred imaging modality for the diagnosis of bone stress injuries. It can also be used for the early diagnosis of MTSS, as the developing periosteal oedema can be identified. Retrospective studies have demonstrated that MTSS patients have lower bone mineral density (BMD) at the injury site than exercising controls, and preliminary data indicates the BMD is

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