

Correlation of clinical examination, magnetic resonance imaging and surgical findings in diagnosing ankle joint ligament injuries

ABSTRACT

Background: Ankle injury is one of the commonest joints injured, especially in sports, which contribute to significant morbidity and time loss from work. Early and accurate diagnosis is vital to prevent long-term uninviting sequelae. The study aimed to determine the accuracy of clinical findings and magnetic resonance imaging (MRI) concerning surgical findings in patients presenting with chronic ankle pain and/or instability. Methods: Retrospective review of MRI images and medical reports was performed for all patients who required surgical treatment for chronic ankle instability at two institutions during a four-year period. Medical reports of 22 female and 20 male patients with a mean age of 35.9 years (17–58 years) were analysed. From 42 patients who met the inclusion criteria, only 20 patients underwent surgery. Surgical findings were considered the gold standard. The time interval between MRI scans and arthroscopy/surgery was 5 months (3–10 months). Results: MRI showed 100% sensitivity for the diagnosis of anterior talofibular ligament (ATFL) and calcaneofibular ligament (CFL), and 66.7% sensitivity for the diagnosis of deltoid ligament tears. However, specificity was moderate to low, particularly for deltoid tears. Our study also demonstrated the high accuracy of MRI in detecting chondral injury with 100% sensitivity and specificity. Clinical tests, particularly tenderness on palpation and anterior drawer test (ADT), provided excellent sensitivity in the diagnosis of ATFL tear but poor specificity. Conclusion: We concluded that MRI is a reliable instrument in the diagnosis of ATFL, CFL, and chondral injury at the ankle, but not specific in ruling out the disease. ADT and tenderness on palpation also accurately denote ATFL injury with high sensitivity and positive predictive value. The assessment of ligaments on MRI should be performed with caution. Clinical correlation based on the tenderness and ADT is critical when reporting MRI to avoid over diagnosis, while arthroscopy remains the gold standard.

Keyword: Ankle arthroscopy; MRI ankle; Chronic ankle instability