Anterior Talofibular Ligament Abnormalities on Routine Magnetic Resonance Imaging of the Ankle

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Introduction/Purpose: The anterior talofibular ligament (ATFL) is one of the most commonly injured structures of the lower extremity after an ankle sprain. Evidence of remote injury to this structure is frequently encountered on magnetic resonance imaging (MRI) of the ankle, with uncertain clinical significance. Previous studies in the orthopaedic literature have discussed the prevalence of abnormal MRI findings in asymptomatic patients, most notably with regards to the spine and shoulder. More recently, a study on the prevalence of peroneal tendon abnormalities on routine MRI of the ankle was published. However, to our knowledge, no such study exists for the ATFL. The purpose of this study is to determine the prevalence of abnormal findings of the ATFL on MRI in asymptomatic individuals.

Methods: All foot and ankle MRIs performed at our institution over a 4-month period were considered for inclusion in our study. Studies were excluded if performed on patients with documented ankle inversion injuries, ankle sprains, lateral ankle trauma, tenderness over the ATFL, or ankle instability. A total of 320 MRIs were eligible for inclusion. The integrity of the ATFL was noted in addition to the primary pathology.

Results: The median age of the patients included in this study was 51 years with 203 females (63%) and 117 males (37%). One hundred eighteen (37%) of the 320 MRIs demonstrated some ATFL pathology. The most commonly encountered ATFL pathologies were thickening (38%), chronic tear (35%), attenuation (25%) and acute tear (2%).

Conclusion: The results of this study demonstrate that a sizeable percentage of asymptomatic individuals (37%) will have ATFL abnormalities on magnetic resonance imaging of the foot and ankle. This study can have important clinical implications for patients who present with concerning MRI findings that do not correlate clinically. Based on our results, orthopaedic surgeons or any other physician providing musculoskeletal care can provide counseling and reassurance to patients who present with ATFL pathology on MRI but an absence of clinical findings. Much like MRI of the shoulder or spine, abnormalities must be correlated with the clinical exam.

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