A Clinical and Radiological Correlative Study of Peroneal Tendon Pathology

Foot & Ankle Category: Ankle

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Introduction
The proportion of patients with clinical findings referable to peroneal pathology and magnetic resonance imaging (MRI)-diagnosed peroneal tendon pathology is unknown. Previous studies have correlated surgical findings with clinical data and preoperative magnetic resonance imaging, but there are no published studies correlating clinical examination findings with imaging findings. The purpose of this study was to determine the degree of correlation between peroneal tendon pathology as diagnosed by MRI and clinical findings of peroneal tendon pathology.

Methods
Fifty-six patients who had both MRI evidence of peroneal tendon pathology and an associated clinical examination of the ankle were evaluated over a three-year period at a tertiary care institution. The principal investigator or Orthopaedic Sports Medicine faculty prospectively recorded the clinical examination of each patient. Patients presenting with at least one of the following signs/symptoms were considered to have a positive clinical exam: peroneal tenderness, dislocation/snapping, or lateral ankle pain. A board certified, fellowship trained musculoskeletal radiologist confirmed the presence of MRI findings consistent with peroneal tendon pathology.

Results
Of the 56 patients with positive findings on MRI, 27 patients had an associated positive clinical exam and 29 patients had a negative clinical exam. The positive predictive value (PPV) of MRI for peroneal tendon tears with positive clinical findings was 48% (95% confidence interval 35-61%). Twelve of the 27 patients with a positive clinical examination and positive MRI underwent surgery. All 12 patients had operable peroneal tendon pathology (100%). While MRI demonstrated peroneal tendon tear(s) (brevis, longus, or both) in 12 patients, the tear was surgically confirmed in nine patients. Thus, MRI was 75% accurate as confirmed by surgery.

Conclusion
Patients with MRI findings of peroneal tendon pathology should undergo careful clinical examination, as the PPV of MRI for peroneal tendon pathology with actual clinical findings is low. This study demonstrates that peroneal tendon tears are often incidental findings on MRI. MRI detected operable peroneal tendon pathology 100% of the time, but was only 75% accurate.