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

Joseph T. O’Neil MD, Elizabeth McDonald BA, Talia Chapman MD, David Casper MD, Rachel Shakked MD, David Pedowitz MD, MS
Disclosures

The authors have no potential conflicts to disclose as it relates to the content of this study.

Our disclosures are in the final AOFAS Mobile App.
Introduction

- Ankle sprains represent up to 40% of athletic injuries
- Most common reason for missed athletic participation
- ~10% Emergency Dept. visits
- Most commonly inversion-type injury
- Many associated injuries
  - OCD lesions
  - Peroneal tendons
  - Fractures
Anterior Talofibular Ligament (ATFL)

- Anteroinferior border of fibula to talar neck
- Primary restraint to inversion when ankle plantarflexed
- Resistance to anterolateral translation of talus
- Most commonly injured ligament in low ankle sprains
  - Weakest of the lateral ligaments
- Mechanism of Injury: Plantarflexion & Inversion
Introduction

- Abnormal MRI in asymptomatic individuals
- Well-documented in literature

**Shoulder**
- 54% prevalence of asymptomatic rotator cuff tears in patients over 60

**Hip**
- 73% prevalence of asymptomatic pathology (labral, chondral, e.g.)

**Spine**
- 67% prevalence of asymptomatic lumbar disc protrusion

**Peroneal tendons**
- 35% prevalence of asymptomatic pathology
Materials & Methods

• **Purpose:** Determine prevalence of abnormal findings of the anterior talofibular ligament on MRI of asymptomatic individuals

• **Included all ankle MRIs performed at single institution over 4-month period**

• **Reviewed all office notes from fellowship-trained foot & ankle surgeons for each patient**

• **Exclusion criteria:**
  - Documented inversion injury, ankle sprain, lateral ankle trauma, tenderness over the ATFL, or ankle instability

• **320 MRIs eligible for inclusion**
Results

- 203 females, 117 males
- Median age: 51 years old
- 118/320 (36.9%) patients demonstrated pathology involving the ATFL
  - Thickening (38%)
  - Chronic tear (35%)
  - Attenuation (25%)
  - Acute tear (2%)
- Primary pathology
  - Posterior Tibial Tendon Dysfunction (21%)
  - Peroneal Tendon Pathology (18%)
  - Plantar fasciitis (13%)
Discussion

Up to 37% of asymptomatic patients will have pathologic findings of their ATFL on MRI of the ankle when performed for reasons other than lateral ankle trauma/symptoms or ankle instability.
Discussion

• Similar results seen in previous study on prevalence of peroneal tendon pathology on MRI in asymptomatic patients

• Similar to what has been shown in the literature regarding MRI in other anatomic locations
  • Abnormalities must be correlated with clinical findings
  • Many MRI findings are clinically silent
Conclusion

Orthopaedic surgeons or any other physicians providing musculoskeletal care can provide counseling and reassurance to patients who present with ATFL pathology on MRI in the absence of clinical findings.
THANK YOU.
References


