Peroneus brevis tendon lesion in athletes: Diagnosis, Treatment and return to activities

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Peroneus brevis tendon lesion in athletes: Diagnosis, Treatment and return to activities

My disclosure is in the Final AOFAS Mobile App. I have no potential conflicts with this presentation.
Introduction

• Unknown incidence.
• Misdiagnosed or belated diagnosis.
• Its injury imply a biomechanical problem.

Objectives:

• Determine the value of MRI as a diagnostic method
• Establish the correlation between images and surgical findings
• Evaluate return to sporting activities
Predisposing factors

A- Mechanicals
   1. Attenuated retinaculum
   2. Peroneal tendon luxation
   3. Ankle instability
   4. cavus/valgus foot

B- Anatomical
   1. Peroneal tendon disposition
   2. Shallow or convex posterior groove
   3. Peroneus quartus muscle
   4. Low-lying peroneus brevis muscle belly

C- Histopathological
   1. Zone of hipovascularity

Materials and Methods

- Between December 2001 - November 2010
- 14 patients treated for peroneal brevis rupture.
- Age range: 16 - 34 years.
- Mean Follow-up: 48 months

Inclusion Criteria:
- Athletes (UCLA activity score 6-10.)
- Peroneal brevis tear treated surgically.
- Nonsurgical treatment failure.

Exclusion Criteria:
- Re ruptures
- Comorbidities
- History of ankle fracture
Materials and Methods

- Clinical examination

- MRI

Sobel et al. four-stage grading scale
1. splayed-out tendon
2. partial-thickness split (<1 cm)
3. full-thickness split 1 to 2 cm in length
4. split extending more than 2 cm

Materials and Methods

- Treatment
  - Posterolateral incision
  - Debridement and tubulization
  - Tear assessment
- Score AOFAS and Visual Analogical Scale (VAS) evaluation.
  
  1° Stage: initiate training activities.
  
  2° Stage: Return to athletic activity.
Results: Diagnosis

- 64.28% reminded having a clear injury event

- **Clinical Findings:**
  - point tenderness over the peroneal tendons
  - swelling
  - reduction of foot eversion power
  - Subjective inestability

- 6 patients (42.85%) referred being diagnosticated in the first visit.
- 3 (21.42%) in the second visit, after changing physician.
- 5 (35.71%) consulted more than three times.

- Peroneal tendon luxation in 5 patients
- 1 case of Peroneus quartus muscle (7%)
- 3 cases of low-lying peroneus brevis muscle belly (21%)
## Results: MRI

### 50% negative findings

### Results: tear classification.

<table>
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<tr>
<th>Ptes</th>
<th>RMI</th>
<th>Intraop.</th>
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</table>
Results

- Patients with Negative findings in MRI had small ($\leq$ 1cm) tears (A-B)

- Positive MRIs correlated with surgical findings (C)
## Results: Functional Evaluation

<table>
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<tr>
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<th>2° Stage</th>
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<tbody>
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<td>AOFAS</td>
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</table>

**Initiate training activities**

- 3,9 months
  - AOFAS 97
  - VAS 1,25

**Return to athletic activity at same level as before injury**

- 10,4 months
  - AOFAS 88,64
  - VAS 2,08

**Reduction of AOFAS Score was due to PAIN item**

Global improvement of 85% and 81,50% of satisfaction.
Conclusions

1. Peroneus brevis tendon tears are usually misdiagnosed.

2. Most reliable clinical findings are point tenderness over the peroneal tendons, swelling and subjective instability.

3. MRI has low sensibility (50 % FN) but high specificity (0% FP).

4. The presence of associated pathologies or anatomical factors may be the cause and predispose to injury, so they must be sought and solved in the same surgical procedure.

5. Return to sports after surgery is prolonged (10.9 months), with good functional results (AOFAS 88.64), considerable improvement in pain (85%) and satisfaction (81.50%).