Thursday: Instability: 3:14 – 3:16 pm

Associations between MR Findings and Symptoms in Patients with Chronic Ankle Sprain

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Summary
Association of MR findings with symptoms in patients with chronic ankle sprain were evaluated. Lateral ankle pain was found to be correlated with symptoms. Signal intensity representing bony bruise was correlated with time lapsed from the injury.

Introduction
There was lack of consensus regarding the correlation between ankle MR finding and symptom, and clinical implication of bone bruise. The purpose of this study was to evaluate the relationship between ankle pain and MRI findings, and to demonstrate the chronicity of injury by quantitatively measuring signal intensity of bone bruises on MR images.

Methods
This prospective study included 40 patients with ankle pain after inversion injury and 10 healthy volunteers. Correlations between ankle symptoms (tenderness on anterior talofibular ligament, pain during varus stress in neutral and plantar flexed ankle) and MR findings were analyzed. Relationships between signal intensities of bone bruise and injury time were assessed.

Results
Discontinuity of the ATFL was found to be correlated with ankle pain during varus stress in the neutral position (r=0.365, p=0.031) and tenderness on ATFL (r=0.362, p=0.032) (Table). The signal intensity of bone bruise at the medial malleolus (r=0.379, p=0.039), and at the medial talar (r=0.374, p=0.042) and lateral talar (r=0.408, p=0.025) domes were correlated with time lapsed from most recent injury.

Conclusion
This study suggests that a complete tear of the ATFL was correlated with lateral ankle pain. And we found that the intensity of bony bruise was correlated with time lapsed from injury, which is believed to be useful information in medicolegal problems.

<table>
<thead>
<tr>
<th>Table. Correlation between MRI findings of ATFL and ankle symptoms</th>
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<tbody>
<tr>
<td><strong>Tenderness on Pain on Pain on varus</strong></td>
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<tr>
<td>ATFL stress in neutral ankle</td>
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<tr>
<td>Discontinuity</td>
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<tr>
<td>Wavy contour</td>
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<td>Increased SI</td>
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<td>Thickened</td>
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ATFL, anterior talofibular ligament; SI, signal intensity.