Comparison of Outcomes of Modified Brostrom Operation for Chronic Lateral Ankle Instability by Preoperative Stress Radiography and MRI

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My disclosure is in the Final AOFAS Program Book.

I have no potential conflicts with this presentation.
Introduction

Both stress radiography and MRI are taken before the operation of chronic ankle instability.

Even though patients are trouble in chronic ankle instability, there are sometimes no abnormality on both stress radiography and MRI.
Purpose

- Modified Brostrom operation was performed on patients with chronic lateral ankle instability

- Differences in clinical outcomes of the patients were analyzed by instability on preoperative stress radiography and injury of the anterior talofibular ligament or the calcaneofibular ligament on MRI
Materials & Methods

- From 2007 Sept. to 2010 June.
- 45 cases in 45 patients
- Mean age: 31 years old (17 - 75 years old)
- Female: 26 cases in 26 patients
- Male: 19 cases in 19 patients
- Mean FU period: 1 year 10m (1 year - 3 years 11 months)

Operation indication

- More than 6 months after an ankle sprain
  and failed rehabilitation for at least 3 months
  and recurrent symptoms of giving way and pain
  and positive physical examination (manual anterior draw test)
Materials & Methods

- **Preoperative stress radiography**
  - Stress positive group: 26 of 45 cases
  - Stress negative group: 19 of 45 cases

- **Preoperative ATFL or CFL tear on MRI**
  - MRI positive group: 41 of 45 cases
  - MRI negative group: 4 of 45 cases

We analyzed:

AOFAS ankle hind foot score
- Preoperative
- Postoperative

Postoperative satisfactory score

- Stress Positive Group
  - Anterior drawer
    - more than 10mm of subluxation
    - 3mm more than contralateral side
  - Talar tilt
    - more than 9° of varus talar tilt
    - 3° more than contralateral side

- MRI Positive Group
  ATFL or CFL tear on MRI
Results

AOFAS score (stress radiography, MRI)

Preoperative

Stress positive

Stress negative

Postoperative

Stress positive

Stress negative

P = 0.330

P = 0.093

MRI positive

MRI negative

P = 0.534

P = 0.094

Postoperative satisfactory score

<table>
<thead>
<tr>
<th></th>
<th>Satisfactory score</th>
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<tbody>
<tr>
<td>Stress positive group</td>
<td>88.7</td>
</tr>
<tr>
<td>Stress negative group</td>
<td>89</td>
</tr>
<tr>
<td>MRI positive group</td>
<td>89.7</td>
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<tr>
<td>MRI negative group</td>
<td>91</td>
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Discussion

- **Stress radiography** is necessary for decision of the operation and MRI is useful to detect further lesions in cases of chronic ankle instability according to most articles.
- However, some patients with chronic ankle instability have no abnormality in stress radiography.
- The findings in stress radiography is questionable about the operative indication of chronic ankle instability.
Conclusion

- There were no differences in clinical results of the patients with chronic lateral ankle instability by instability observed on preoperative stress radiography and ligament injury on MRI.

- Therefore, symptoms of patients and physical examination is more important index to decide to perform Modified Brostrom operation for chronic lateral ankle instability.
References


