Arthroscopic Treatment in Mild to Moderate Osteoarthritis of the Ankle: Updated Clinical Outcomes and Prognostic Factor Analysis

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My Disclosure is in the Final AOFAS Program Book.

I have no potential conflicts with this presentation
Introduction

Arthroscopic Treatment for Ankle Arthritis

- may provide improvements in symptoms and function
- prevent or delay the need for major surgery

Purpose

- To review the outcomes of arthroscopic treatment for ankle osteoarthritis
- To determine the factors causing unsuccessful outcomes
Materials and Methods

- Between 2001 and 2009
- 63 patients
- Mean follow-up: 71 months
- Mean age: 53.7 yrs (24 to 82)
- Male: Female = 42:21 ankles

Inclusion
- Fibrillated articular cartilage with exposed subchondral bone

Exclusion
- Focal osteochondral lesion
- Corticosteroid injection within 3 months
- A history of avascular necrosis
- Rheumatoid or other inflammatory arthritis
- Previous ankle surgery within the last year
Materials and Methods

Clinical Analysis

❖ AOFAS score, VAS, ROM

❖ The criteria of Saxena and Eakin
  • excellent, good, fair, poor

❖ Prognostic factors of clinical outcomes
  • Age
  • Gender
  • duration of symptoms
  • body mass index (BMI)
  • type of osteoarthritis
  • treatment modalities
  • the presence of associated intra-articular pathologies
  • coronal alignment

Radiological Analysis

❖ 3 groups according to the alignment

<table>
<thead>
<tr>
<th>Group</th>
<th>Coronal alignment</th>
<th>Findings</th>
<th>Joint space</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>0° (normal)</td>
<td>sclerosis in subchondral region</td>
<td>maintenance</td>
<td>34</td>
</tr>
<tr>
<td>II</td>
<td>≤ 5° (varus or valgus)</td>
<td>osteophyte formation, subarticular erosion</td>
<td>narrowing</td>
<td>22</td>
</tr>
<tr>
<td>III</td>
<td>&gt; 5° (varus or valgus)</td>
<td>further osteoarthritic change</td>
<td>Severe narrowing</td>
<td>7</td>
</tr>
</tbody>
</table>

❖ all patients underwent MRI before the operation
Results

Demographics

- **age**
  - mean age: 53.7 yrs (24 to 82)
  - ≥55: 34 (54%)
  - <55: 29 (46%)

- **type of osteoarthritis**
  - post-traumatic: 38 (60.3%)
  - degenerative: 25 (39.7%)

- **associated intra-articular lesions**
  - present: 49 (77.8%)
  - absent: 14 (22.2%)

- Soft tissue impingement (38.1%)
- Osteochondral lesion of talus (34.9%)
Results

VAS & AOFAS score

ROM and Clinical Success & Failure Rates

- Mean range of motion
  - preop: $31.57 \pm 6.89^\circ$
  - postop: $34.41 \pm 6.16^\circ$  ($P < .05$)

- The overall clinical success and failure rates
  - success rates: $53.9\%$ (34/63)
  - failure rates: $46.1\%$ (29/63)

significantly improved at 2 yrs in comparison to initial assessment
Results

Prognostic Factors Analysis

- no correlations with the clinical outcome
  - age, gender, symptom duration
  - type of osteoarthritis, treatment modality
  - coronal alignment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Relative risk</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI ≥25 vs &lt;25</td>
<td>7.0652</td>
<td>1.443-34.561</td>
<td>.015</td>
</tr>
<tr>
<td>Number of associated lesion ≥2 vs &lt;2</td>
<td>7.7534</td>
<td>1.631-36.844</td>
<td>.010</td>
</tr>
</tbody>
</table>

BMI & the number of associated intra-articular lesions: “independent predictors of clinical outcome”
Discussion

Result in Our Study

- the largest improvements after 6 months

- while scores steadily declined, they remained significantly improved for up to 2 years

Poor Prognostic Factors

In our study

- BMI $\geq 25$ kg/m$^2$
- more than two associated intra-articular lesions
Conclusion

Arthroscopic treatment of ankle osteoarthritis

Although clinical scores were deteriorated from 6 months

- Significantly improved for up to 2 years
- Clinical success rates: 53.9%

Can delay the need for major surgery

Reference