CLINICAL OUTCOME OF ARTHROSCOPIC ANKLE ARTHRODESIS IN OLDER PATIENTS

DEPARTMENT OF ORTHOPAEDIC SURGERY
FUKUOKA UNIVERSITY
JAPAN

Ichiro Yoshimura MD, PhD. Kazuki Kanazawa, MD,
Takahiro Ida MD, PhD. Tomonobu Hagio MD,
Masatoshi Naito MD, PhD
DISCLOSURES

My disclosure is in the Final AOFAS Mobile App. I have no potential conflicts with this presentation.
Ankle arthrodesis and total ankle arthroplasty are the major treatment options for patients with end-stage ankle arthritis. Selection of the procedure will depend on the surgeon and/or the patients.

Recently, arthroscopic ankle arthrodesis was established for select patient populations. The advantages of this technique include high union rate, low complication rate, and reduced morbidity and requirement for hospitalization. However, studies have yet to investigate the clinical outcome of arthroscopic ankle arthrodesis in older patients.

We hypothesized that an increasing age will affect the clinical outcome for patients treated with this procedure.
METHODS

We retrospectively analyzed 49 ankles from 49 patients treated with isolated arthroscopic ankle arthrodesis at our institution from August 2005 to May 2010.

Patients were categorized into two groups:

- Group I comprised 21 ankles from patients aged 70 years and over (74.0 ± 3.9 years)
- Group II comprised 28 ankles from patients under the age of 70 years (56.2 ± 7.8 years).

We investigated the clinical outcome, union rate and time-to-union using past medical records.
# Surgical Technique

**Step 1**  
Debridement of synovium, residual articular cartilage and subchondral bone

**Step 2**  
Reduction of the tibiotalar joint to neutral flexion, 5° hindfoot valgus and external rotation

**Step 3**  
Internal fixation with transmalleolar compression screws (two or three 6.0-mm CCSs)
SCREW FIXATION

In general, three screws were used for fundamental fixation, although only two screws were used in smaller ankles.

We used two/three 6.0-mm cannulated screws for fixation because Japanese people are tend to have a smaller bone structure and overall size as compared with people of European and American descent.

POSTOPERATIVE PROTOCOL

A non-weight bearing short-leg cast was applied and worn for the first 6 weeks.

A removable U-splint was then applied and the patient allowed to increasingly bear weight on the leg. If the weight bearing was well tolerated over the next 4~6 weeks and there were no untoward symptoms, the U-splint was removed.
# RESULTS

<table>
<thead>
<tr>
<th></th>
<th>GROUP I (N=21)</th>
<th>GROUP II (N=28)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Union rate (%)</strong></td>
<td>90.5 (19/21)</td>
<td>92.9 (26/28)</td>
<td>0.8</td>
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<tr>
<td><strong>Union time (weeks)</strong></td>
<td>11.6 ± 3.6</td>
<td>10.2 ± 2.9</td>
<td>0.16</td>
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<tr>
<td><strong>Preoperative JSSF</strong></td>
<td>51.1</td>
<td>50.7</td>
<td>0.9</td>
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<tr>
<td><strong>Postoperative JSSF</strong></td>
<td>83.6</td>
<td>87.2</td>
<td>0.12</td>
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<tr>
<td><strong>Complication 1 (skin irritation)</strong></td>
<td>none</td>
<td>1 (skin irritation)</td>
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</tbody>
</table>
DISCUSSION

• End-stage ankle osteoarthritis is a debilitating condition that results in functional limitations and a decreasing quality of life.

• In general, younger, active patients are more likely to receive an ankle arthrodesis, whereas for older patients, it is considered better to treat them with total ankle replacement.

• However, ankle arthrodesis can be performed in active, older patients and the choice of treatment (ankle arthrodesis or total ankle replacement) remains controversial.

• There are no clinical studies focusing on the outcome of arthroscopic ankle arthrodesis in older patients. It is possible that this technique may lead to poor outcomes and complications in older patients caused by difficulty during fixation due to osteoporosis and difficulty in maintaining a post-operative protocol.

• Here, we show similar results for union rate, time-to-union and JSSF scores between younger and older patients, with no significant difference.

• Arthroscopic ankle arthrodesis offers an effective surgical treatment for older patients.
REFERENCES


