Primary Subtalar Arthrodesis for Severely Comminuted Intra-articular Calcaneal Fractures

Hyung-Jin Chung, MD
Su-Young Bae, MD
Don-Seok Lee, MD
Byoung-Kwon Min, MD
Jae-Gu Park, MD
Seung-Hun Woo, MD
My disclosure is in the Final AOFAS Mobile App.

I have no potential conflicts with this presentation.
Severely comminuted intra-articular calcaneal fractures
→ Difficult to surgery, very poor prognosis

Primary subtalar arthrodesis
→ Recommended as definite treatment in comminuted intra-articular calcaneal fracture in which could not be restored of subtalar joint congruency
The purpose of this study is to evaluate the radiological and clinical results of primary subtalar arthrodesis for severely comminuted intra-articular calcaneal fractures.
From October 2004 to February 2015

12 feet of 12 patients

All cases: Severely comminuted intra-articular fx.

    Sanders type IV (10 feet), type IIIAB (2 feet)

Male / Female: 9 / 3

Age: average 41.9 Y. (23 ~ 60 Y.)

Follow-up: average 34.1 M. (12 ~ 83 M.)

Injury mechanism: Fall down (10 feet), Traffic accident (2 feet)
Radiologic outcomes were assessed by hindfoot alignment parameters (talo-calcaneal height, talo-calcaneal angle) and time to radiologic union.

Clinical outcomes were assessed by AOFAS functional score, VAS pain score and time to return to previous occupation.
## Radiologic outcomes

<table>
<thead>
<tr>
<th></th>
<th>Preop.</th>
<th>Postop.</th>
<th>Last F/U</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCH (mm)</td>
<td>67.9 (57.6-75.2)</td>
<td>72.3 (62.1-81.2)</td>
<td>70.0 (60.6-79.4)</td>
<td>↑ 2.1</td>
</tr>
<tr>
<td>TCA (°)</td>
<td>17.9 (6.1-29.0)</td>
<td>20.3 (12.0-33.0)</td>
<td>20.8 (10.0-37.6)</td>
<td>↑ 2.9</td>
</tr>
</tbody>
</table>

**RESULTS**

- Radiologic bone union: 12 / 12 cases, Average 5 months

**Legend:**
- TCH: Talo-calcaneal height
- TCA: Talo-calcaneal angle
## Clinical outcomes

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
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<tbody>
<tr>
<td>AOFAS* score</td>
<td>73.0 (65-80)</td>
</tr>
<tr>
<td>VAS† score</td>
<td>3.2 (0-6)</td>
</tr>
<tr>
<td>Return to work#</td>
<td>11 / 12 (91.6 %)</td>
</tr>
</tbody>
</table>

*AOFAS*: American Orthopaedic Foot and Ankle Society Ankle-Hindfoot Functional scale (maximum 94 points because of subtalar arthrodesis)

*VAS*: Visual Analogue Scale Pain score

#: Average of 9 months after operation
60 year-old female fell from 2mm height

A: Initial X-ray: Severely comminuted intra-articular fx.

B: CT semi-coronal view: Sanders type IV
C : Open reduction and internal fixation with immediate subtalar arthrodesis was performed

D : Hardware removal at postoperative 15 months

Patient showed good results of AOFAS score of 80 points at postoperative 17 months
Primary subtalar arthrodesis for severely comminuted intra-articular calcaneal fractures showed favorable results.

Therefore, primary subtalar arthrodesis is a reliable choice for severely comminuted intra-articular calcaneal fractures.
REFERENCES


