Simultaneously performed lateral calcaneal ostectomy and subtalar arthroscopic debridement for residual pain after calcaneal fractures

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Disclosures

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Introduction

Inadequate primary treatment of calcaneal fractures frequently results in persistent, residual pain. This may be caused by subtalar arthritis, increased calcaneal width, and/or calcaneal fibular impingement of the peroneal tendons. Many patients suffer from multiple disorders simultaneously, thus requiring a combination of procedures to treat the injury. The purpose of this study was to evaluate the clinical outcomes of arthroscopic debridement with lateral calcaneal ostectomy for residual pain after calcaneal fracture.
The indications for treatment in these patients were (1) persistent pain in the subtalar joint that partially improved after an injection; (2) an articular gap and step-off of less than 2 mm at the posterior facet of the subtalar joint; (3) an absence of narrowing of the joint space on CT scans; and/or (4) calcaneal-fibular impingement and/or peroneal tendinitis due to increased calcaneal width.
A 2.7 mm, 30° arthroscope was inserted, and the anterolateral portal was established approximately 1.5 cm anterior to the middle portal without distraction. Following this, the posterolateral portal was established approximately 1 cm proximal to the tip of the lateral malleolus and just lateral to the Achilles tendon. After assessment of the subtalar joint, a power shaver was then introduced to debride fibrous tissue, impinging soft tissue, loose bodies and any damaged cartilage of the posterior facet.

A standard lateral extensile approach to the calcaneus was used, and the full thickness of the subperiosteal flap was raised. The exostectomy was performed from posterior of the calcaneus to the level of the calcaneal cuboid joint.
# Patients

<table>
<thead>
<tr>
<th>case</th>
<th>Age</th>
<th>Worker’s Compensation</th>
<th>Sanders Classification</th>
<th>Bohler’s Angle (degree)</th>
<th>Duration from injury (month)</th>
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<td>case</td>
<td>Arthroscopic findings</td>
<td>JSSF scale</td>
<td>Subtalar movement (%)</td>
<td>NPI</td>
<td></td>
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<td>-----------------------</td>
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<tr>
<td></td>
<td>Synovitis</td>
<td>Faibrous tissue</td>
<td>Cartilage damage</td>
<td>Loose body</td>
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</table>

Abbreviation; JSSF: Japanese society of surgery of the foot , NPI: Numeric pain intensity
The residual expansion of the lateral calcaneal wall results in problems wearing shoes and in the development of calcaneofibular impingement and/or peroneal tendinitis.

In 1921, Cotton performed an ostectomy of the lateral wall in old calcaneal fractures and reported good outcomes. Since then, many authors have described using an isolated wall exostectomy to treat this lateral wall expansion.
- Some patients have residual subtalar joint pain, without articular incongruity at the posterior facet of the subtalar joint.

- Lee et al. assessed the use of arthroscopic debridement of the subtalar joint, the sinus tarsi and the lateral gutter after subtalar stiffness developed following calcaneal fracture in patients that presented without articular incongruity of more than 2 mm. Their findings demonstrated good clinical outcomes for these patients.

- While we can access the subtalar joint using an extensile lateral approach, we cannot directly inspect the subtalar joint completely. Thus, arthroscopic subtalar debridement is an effective procedure for treating residual subtalar joint pain in patients after calcaneal fracture.

- In conclusion, we report that arthroscopic subtalar debridement and concomitant lateral calcaneal osteotomy may be an effective strategy to alleviate residual pain in calcaneal fracture patients presenting with a lateral wall bulge and mild or no degenerative changes in the subtalar joint.
REFERENCES


