Comparative Study of Open Reduction and Internal Fixation and Primary Subtalar Arthrodesis for Sanders Type IV Intra-articular Calcaneal Fractures
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Introduction/Purpose: To compare clinical outcome of Sanders type IV intra-articular calcaneal fracture treated with open reduction and internal fixation (ORIF) versus ORIF and primary subtalar arthrodesis (PSTA).

Methods: Between March 2003 and November 2013, 22 patients with 22 Sanders type IV intra-articular calcaneal fractures were included in this study. Of these, 11 feet were treated with ORIF (ORIF group), 11 feet were treated with ORIF and PSTA (PSTA group). The mean follow-up period was 34.6 months (range, 18-72 months). Clinical outcomes were assessed along with the American Orthopaedic Foot and Ankle Society's Ankle-Hindfoot Scale (AOFAS score), the Visual Analog Scale Pain score (VAS score) at 6-, 12 month, and last follow-up. The patient satisfaction, returning to previous occupation and postoperative complications were also investigated.

Results: Complete bone union were achieved in all patients. No statistical difference was found between the results for ORIF compared with PSTA: the mean preoperative Bohler angle were, respectively, -3.2±9.2 and -6.6±12.7 degrees (p=0.475); the mean last follow-up AOFAS scores were 73.8±14.9 and 80.5±4.6 (p=0.795); the mean VAS last follow-up VAS scores were 29.7±20.6 and 23.4±10.0 (p=0.986). Secondary subtalar arthrodesis were conducted in 5 patients (45.5%) of ORIF group due to subtalar osteoarthritis symptom within 2 years, postoperatively.

Conclusion: We were unable to demonstrate a significant difference of clinical outcomes between ORIF and PSTA however, the patient satisfaction was higher in the PSTA group. PSTA may be considerable choice for patients who need fast recovery to daily activity and to prevent the need for secondary subtalar arthrodesis.

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