

Veltman ES, Doornberg JN, et al. Long-term outcomes of 1,730 calcaneal fractures: systematic review of the literature. J Foot Ankle Surg. 2013;52(4):486-90.

Design: systematic review of clinical trials and observational studies

Purpose of study: to review the current literature on long-term outcomes of calcaneal fractures with respect to the type of treatment and the methods of surgical reduction

Reasons not to cite as evidence:

- There are only two randomized trials (designated as Level I studies) available for the analysis, and these do not point clearly to operative or nonoperative treatment
- One of these, Ibrahim 2007, does not find differences in clinical outcomes 15 years after randomization to either operative or conservative treatment of Sanders types II and III fractures
- The other cited Level I study, Buckley 2002, was cited for evidence of the potentially relevant finding that when Workers' Compensation status is adjusted for, the outcomes are significantly better in some groups of surgically treated than nonsurgically treated patients
 - o Buckley's analysis of results presents several problems related to having attempted to dichotomize the data from visual analog scales and the SF-36 at the mean of the distribution and estimating treatment effects as odds ratios rather than using more standard approaches such as analysis of covariance with baseline values as covariates; this leaves the analysis of the results vulnerable to peculiarities of the shape of the distribution of the two main continuous outcomes
 - o Buckley's analysis also does not lead to an understanding of the effects of treatment decisions on Workers' Compensation patients
- Although not rising to the level of evidence, there is some pertinent information about the principle that the outcomes of calcaneal fractures depend greatly on the occurrence of complications, which do not commonly determine the outcome of most other fractures; this is the reason for ongoing controversy about the management of these fractures

References:

Buckley R, Tough S, et al. Operative compared with nonoperative treatment of displaced intra-articular calcaneal fractures: a prospective, randomized, controlled multicenter trial. *JBJS Am* 84-A:1733–1744, 2002.

Ibrahim T, Rowsell M, et al. Displaced intra-articular calcaneal fractures: 15-Year follow-up of a randomised controlled trial of conservative versus operative treatment. *Injury, Int. J. Care Injured* 2007;38: 848—855