Calcaneal Osteotomies in the treatment of Hindfoot Deformities: Comparison between One Screw vs Two Screws fixation technique.
Bahman Sahranavard, MD, Ashish Shah, MD, Cesar de Cesar Netto, MD, PhD, Ibukunoluwa Araoye, MS, Parke Hudson, BS, Brent Cone, BS, Michael Johnson, MD, Caleb Jones, BS, Zachariah Pinter, BS, Sung Lee, BS

Category: Hindfoot

Keywords: Calcaneal Osteotomy, Sliding Calcaneal Osteotomy, Hindfoot Deformities, Hindfoot Varus, Hindfoot Valgus, Screw Fixation

Introduction/Purpose: Calcaneal osteotomy is a common procedure for hindfoot deformities correction. Screw fixation is the most common technique used to stabilize these osteotomies. The clinical decision regarding the number of screws used is frequently based on the surgeon’s experience without sufficient data regarding outcomes and complications. The aim of this study was to compare the outcomes and complications of one versus two screws fixation technique of sliding calcaneal osteotomies.

Methods: We reviewed 190 patients (112 female, 78 male) who underwent corrective calcaneal osteotomy for hind-foot angular deformity between 2010-2016. The average age was 48.4 years (18-83), and mean follow-up was 28 weeks (4-150). We divided patients into two groups, according to the number of screws used in the osteotomy fixation (one or two). 85 osteotomies were fixed by one screw and 105 by two screws. We compared both groups regarding incision type, positioning and type of the screws (headed or headless) and complications (non-union, infection, hardware related heel pain).

Results: The average time for radiographic union was similar between the groups, around 5.6 weeks (4-10 weeks). Non-unions were not found. The overall Incidence of complications was not significant different in the one screw group compare two screw group (12.7% x 8%, p-value 0.465). Infection rate was similar in both groups (4.7% vs 3.5%, p-value 0.674). There was not significant difference of hardware related heel pain between two groups (15.2% vs 8.5%, p-value 0.149). Similarly, no difference in incidence of hardware related symptoms between patients who used headed screw when comparing with headless screws.

Conclusion: Our study compared results in the use of one screw versus two screws fixation technique for sliding calcaneal osteotomies. We found similar time for union. Base of date there was no significant difference of complications, infection, and hardware related heel pain between patients who used one screw when comparing two screws fixation technique for corrective calcaneal osteotomy.

Foot & Ankle Orthopaedics, 2(3)
DOI: 10.1177/2473011417S000346
©The Author(s) 2017

This open-access article is published and distributed under the Creative Commons Attribution-NonCommercial 3.0 License (http://www.creativecommons.org/licenses/by-nc/3.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (https://us.sagepub.com/en-us/nam/open-access-at-sage).