

Subtotal Calcaneotomy for the Treatment of Large Heel Ulceration and Calcaneal Osteomyelitis in the Diabetic Patient, Baravarian B. et. al. *The Journal of Foot and Ankle Surgery*, Volume 38, Issue 3, 194-202, May 1999.

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Level of Evidence: 2

Reviewer: Carolina Vigo, PMS-II
Barry University School of Podiatric Medicine

Within the realm of diabetic patient care, particularly concerning those afflicted with heel ulceration complicated by calcaneal osteomyelitis, the trajectory often culminates in below-the-knee amputation (BKA). However, vast research shows correlations between BKA's and higher incidences of morbidity and mortality. Efficacious management of ulcerations without resorting to BKA holds promise for improved patient outcomes, potentially mitigating the prevalence of such ulcers and associated adverse health outcomes in this vulnerable population. Subtotal calcaneotomy, the surgical removal of the entire or a portion of the calcaneus bone, has been a subject of medical interest and study since as early as 1931. Over the decades, numerous case studies have been conducted to evaluate the efficacy and outcomes of this procedure. Despite variations in results observed over the years, the continuous study of calcaneotomy in patients is justified by the fact that the level of amputation does not change due to the failure of this procedure.

In this article, 12 patients (6 males / 6 females ages ranging from 39-89) with calcaneal osteomyelitis and overlying ulcers underwent subtotal calcaneotomy. Vascular status and protective threshold sensation in the foot were evaluated previous to the surgery for all patients (protective threshold sensation was absent in all 12 cases). Incision placement (8 posterior / 2 medial / 2 lateral) and fraction of the calcaneus removed (9 over 50% / 3 less 50%) were individualized according to location and size of the ulcer and region of osteomyelitis.

The postoperative regimen implemented in this study included immediate application of a posterior splint dressing with subsequent adherence to a nonweightbearing protocol, coupled with the continuous utilization of a pressure-relief ankle-foot orthotic (PRAFO) device during bed rest. Multifaceted strategy of antibiotic therapy, characterized by an initial 3-4 weeks of postoperative intravenous administration followed by a transition to a 2-week oral regimen, meant to combat potential infectious complications across varying stages of the postoperative period. Permission to return to patient's typical ambulatory status was given once complete healing of incision site and establishment of fibrosis between fat pad and calcaneus was achieved. Complications included one case of reulceration after complete healing, one case of delayed healing, and two postoperative deaths to cardiovascular incidents.

Utilization of subtotal calcaneotomy remains an excellent alternative in the management of calcaneal osteomyelitis accompanied by ulceration, owing to its favorable risk profile characterized by minimal collateral damage and its potential to mitigate the morbidity and mortality typically associated with more extensive procedures such as below-knee amputations (BKAs). Given a small sample size, further investigation is certainly warranted.



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