

**Correction of deformity in the neuropathic foot including Charcot deformity leads to rapid healing of chronic ulcers in the diabetic foot**

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Although total contact casting, bracing and ankle foot orthoses are considered as a mainstay in the treatment of neuropathic diabetic foot ulceration, the role of surgery to correct deformity is controversial. The aim of this study was to assess the outcome of 16 patients in whom conservative treatment had failed to heal foot ulceration and who underwent surgery to correct the associated deformity.

There were 14 males and 2 females with a mean age of 55.8 years (range 30-70 years). Twelve had type 2 diabetes and 4 had type 1 diabetes; mean duration of diabetes of 18.4 years (range 7-43). All patients had indolent diabetic foot ulcers with a mean duration of ulceration before surgery of 219 weeks (range 16-796). In 10 patients, ulcers were associated with Charcot foot deformity. Site of ulceration included lateral malleolus (1), hind foot (1), base of 5<sup>th</sup> metatarsal (4), midfoot (2), medial arch (2), head of 1<sup>st</sup> metatarsal (4) and head of 2<sup>nd</sup> (1) and 3<sup>rd</sup> metatarsal (1). Foot deformities included chronically dislocated lesser metatarso-phalangeal joints and clawing (6), varus and adducted forefoot (1), rocker bottom deformity (5), adducted hind foot (3) and calcaneovalgus (1). Procedures performed were forefoot reconstruction with Weils osteotomy (6) and corrections of Charcot deformity including exostectomy (3), retrograde nailing of the tibia (3) and Taylor-Spatial Frame (TSF)-(4). Overall 11 ulcers healed and mean time to healing was 12.7 weeks (range 4-21) weeks. Mean follow up was 69 weeks (range 29 - 128 weeks). Only two patients reulcerated - one at the initial site and one at a different site. Postoperative complications included failed fusion (3), pinsite infection (2), broken TSF wire (1), periprosthetic fracture (2), and wound dehiscence superficial infection (1). This report has shown that although surgery in diabetic foot patients is not without risks, surgical correction of underlying deformity leads to rapid ulcer healing in 68.7% of patients with previous chronic foot ulceration.