

The surgical treatment of rocker-bottom deformity due to sequelae of midfoot Charcot neuroarthropathy based on a three-dimensional computed tomographic study.

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Abstract

We assessed 14 diabetic patients with classic rocker-bottom feet due to sequelae of midfoot Charcot neuroarthropathy (Eichenholtz stage III) with non-healing full thickness plantar ulcers and determined the common patterns of this deformity by using three-dimensional computed tomography. Based on these findings, nine patients were treated with a procedure that included an open reduction of the Lisfranc joint, external fixation, an autogenous iliac bone graft, and a total contact casting. The mean duration of the plantar ulcer was 14.1 months (range 6 to 48). The average time in the external fixator was 69.2 days (range 62 to 74) and was followed by an average of 13.6 weeks (range 11 to 16) in the total contact cast. All of the plantar wounds healed with primary suturing within 6 weeks after the surgery. All patients recovered with an unassisted bipedal gait. There were no recurrences of the plantar ulcer in any of the patients. A bony union was obtained in all of the cases within 31 weeks after the surgery, as shown by a follow-up radiograph. All patients were satisfied with both the functional and anesthetic aspects of their recovery. Rocker-bottom deformity due to sequelae of Charcot neuroarthropathy accompanying non-healing lateral to central plantar ulcer is believed to be similar to the chronic dislocation of the tarso-metatarsal joint. As a treatment option, the open reduction of the Lisfranc joint, external fixation, and an autogenous bone graft can obtain excellent or good results and may be used instead of foot amputation.

Index words: Charcot neuroarthropathy, Midfoot, Deformity, Surgical treatment, Diabetes