Utilizing Calcaneal Plate For Lateral Column Fusion In Extensive Midfoot Charcot Neurthropathic Osteoarthropathy

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INTRODUCTION:

The main aim in treating Charcot neuropathic osteoarthropathy (CN) is to achieve a plantigrade, stable foot that is able to fit into a shoe and to prevent recurrent ulceration[1].

Extensive (more than four joints) midfoot fusions can be difficult because of bone loss, deformity, and soft tissue condition. However, there is limited dedicated lateral column plating system on the market as compared to medial column fusion plating. We describe a case of extensive midfoot deformity arthrodesis using bi-column fixation and applied calcaneal plate for the reconstruction of the lateral column.

REPORT:

A 37-year-old lady with Type 2 Diabetes mellitus for 6 years presented with left foot swelling and deformity for 5 months. Clinical examination revealed left foot swelling with rocker bottom deformity and superficial plantar ulcer. Plain radiograph showed sclerotic appearance with fracture of medial and middle cuneiforms with dorsal joint subluxation deformity of second to fifth tarsometatarsal joints. She was subsequently diagnosed with diabetic left Charcot foot Brodsky Type 1. When the general condition improved, and inflammation subsided, we performed the superconstruct surgery on the left foot.

We fused bone using medial column fusion plate with 3.5 mm locking compression plate for the first ray. The lateral column was fused using calcaneal plate that spans from anterior process of calcaneous to the shaft of the fifth metatarsal, allowing the fixation to extend beyond the zone of injury. Patient was maintained non-weightbearing until radiographs showed union.

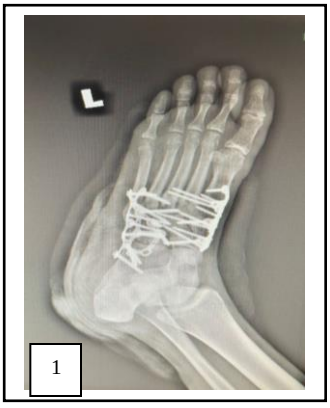

Figure 1 : Bi-column fixation (Superconstruct)
Figure 2: Utilizing calcaneal plate for lateral column reconstruction.

CONCLUSION:

Bi-column plating is advocated for achieving fusion in extensive midfoot arthropathy[2]. The use of calcaneal plate is a feasible method of lateral column fixation for achieving fusion. The plate is low-profile and easily moldable to conform to midfoot anatomy[3]. It can also be positioned without massive dissection and maintains midfoot alignment until bony fusion occurs. Calcaneal plate is a viable option for multiple-joint fusions in patients with complex midfoot pathology.

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