Surgical treatment of neuroarthropathic foot deformity


Abstract: Twenty-seven feet with neuroarthropathic fracture resulting in significant deformity were treated with surgical reconstruction. The average age of the patients was 57 years with 21 patients having diabetes mellitus an average of 24 years. Five patterns of midfoot collapse were identified. The most common patterns involved abduction and dorsal displacement of the forefoot with equinus of the hindfoot. Preoperative evaluation included a medical assessment, adequate control of blood sugar, and a comprehensive vascular evaluation. Five patients presented for surgical consultation with open plantar ulcers. Four were healed with total contact casting alone whereas one patient required an exostectomy to heal the ulcer before surgery. After reconstruction, all feet had improvement in their weightbearing posture. For feet with midfoot involvement, the average anteroposterior talo-first metatarsal angle increased 5 degrees, and the average lateral talo-first metatarsal angle decreased 6.5 degrees. There was no significant loss of correction at long term follow-up. The average time in a cast postoperatively was 5.7 months, and the time to unrestricted weightbearing was 7 months. All patients were able to wear over-the-counter footwear postoperatively. Significant complications included six nonunions and two feet with extension of the neuroarthropathic process. One nonunion required revision surgery, and the feet with extension of their neuroarthropathic fractures required conversion of a triple arthrodesis to a pantalar fusion and the addition of a triple arthrodesis after a successful midfoot fusion. No infections or amputations occurred as a result of the surgery. Function increased and pain decreased as a result of successful arthrodesis. Surgical reconstruction of midfoot, hindfoot, and ankle neuroarthropathic deformity is a viable alternative to amputation for patients who fail nonoperative care. Proper preoperative evaluation and assessment will result in a rate of complications comparable to foot surgery in nondiabetic patients.