

The Limb Lengthening and Reconstruction Society: ASAMI–North America

Sixteenth Annual Scientific Meeting

Abstract Form

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Title: Limb Salvage Reconstruction of the Ankle with Simultaneous Arthrodesis and Tibial Lengthening

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Select all that apply:

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- Limb Lengthening
- Trauma, Acute
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Despite improving methods for the early treatment of complex fractures involving the ankle joint, many patients develop debilitating ankle arthritis often associated with deformity and bone loss. Osteonecrosis of the talus, collapse of the plafond, and resection of non-viable bone cause bone loss with significant leg length discrepancy. The technique of ankle arthrodesis combined with simultaneous proximal tibial lengthening using circular external fixation has been very effective in providing patients with an infection-free and functional limb.

11 patients underwent staged ankle arthrodesis and proximal tibial lengthening for limb salvage using the Ilizarov Taylor Spatial Frame. Preoperative diagnosis included ankle arthritis and bone loss from failed previous arthrodesis for chronic pilon fracture (2), infected pilon nonunion (3), traumatic talar osteonecrosis (4), failed total ankle replacement after pilon fracture (1), repetitive microfracture in a diabetic Charcot ankle (1). Average age was 40years old (10-59). Average number of previous surgeries was 4 (2-10). 6/11 had osteomyelitis. 2 patients were smoking during treatment. In 5 patients tibio-calcaneal fusion was performed. Proximal tibial osteoplasty was performed 4weeks (3-6) after the index arthrodesis surgery.

Average time in the frame was 8months (5-23). Average amount of lengthening was 6.6cm (2-15cm). Average AOFAS score was 72 (55-100). Average ASAMI bone score was excellent and functional score was good. SF-36 score increased in all 8 categories. AAOS LLM score increased an average of 7 points from preoperative scores. All osteotomy sites healed. Both smoking patients had nonunions of the fusion site (p=0.03). One elected amputation the other obtained union after revision surgery. No other patients had nonunion or amputation. One patient developed significant valgus deformity through the regenerate that required a corrective osteotomy. One patient needed IV antibiotics for cellulites.

Despite modest increases in functional scores 10/11 patients were very satisfied with their final result and would do it again. Ankle arthrodesis with proximal tibial lengthening using the Ilizarov method and the Taylor Spatial Frame is well tolerated and offers a reliable solution to very complex lower limb pathology. This technique is effective for limb salvage in many patients whose only other recourse is below knee amputation.

