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Follow up of Intramedullary Nail Fixation for the Treatment of Charcot Neurotropy of the Ankle with Severe Joint Instability: A Confirmation of Limb Salvage Surgical Procedure

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Introduction: recently our group have published a paper that demonstrated on 14 patients submitted to transcalcaneal intramedullary nail fixation of the ankle joint for severe joint instability that this surgical procedure has to be considered the limb salvage procedure of choice due to the high rate of success (91%). In order to confirm this statement on longer follow up we submitted others patients, that reached our Diabetic Foot Center for the same pathology with the suggestion of below knee amputation, to these surgical procedure and we followed all the treated patients closely.

Material and Methods: from January 2001 to December 2005 we enrolled 28 patients affected by Charcot of the ankle with severe joint instability that didn't allow to walk properly even with a tutor. All patients were affected by severe ankle instability due to fractures of the astragalus. In all the patients a below knee amputation was suggested. We applied an intramedullary nailing device that is characterized by the possibility to obtain a stable compression across the ankle and subtalar arthrodesis sites. In our post operative protocol a rigid fibreglass cast was applied for 3 months avoiding ambulation. This period was followed by three months of walking with crutches using a protective aircast. After this period the patients were allow to walk bearing a protective shoes with rigid sole and protective insole. **Result:** in a follow up of 28 ± 19 months we observed a stable fixation of the ankle in 21 patients out of 28 patients treated (75%). 2 patients are still using a brace due to the presence of superficial plantar ulceration while 5 patients are still using a brace due to malunion of the ankle with correct alignment of foot with leg. Only one patient was submitted to below knee amputation due to osteomyelitis of the ankle secondary to deep lateral malleolus ulceration with exposition of sintesis device. In six patients was necessary to remove the nail while in two patients the calcaneus and distal screw was removed due deep ulcer with exposition of sintesis device. After the removal of the devices we observed the healing of the ulcers in all patients. During the follow up period two patients died for cardiovascular disease.

Conclusion: data from our observational study demonstrate in a long follow up a high rate (96%) of limb salvage in Charcot of the ankle with severe joint instability. Transcalcaneal intramedullary nail fixation with compressive device should be considered a safe and effectiveness surgical device for treatment of Charcot of the ankle when below knee amputation is suggested.