

Long Segment Distraction Osteogenesis of Tibia with Tibio-Talar Fusion; An Enduring Undertaking

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INTRODUCTION:

A large segmental bone defect can be managed via multiple techniques such as distraction osteogenesis, masquelet technique or vascularized graft. It still remains a challenge to manage immense bone defects despite numerous techniques available to achieve the desired results.

REPORT:

We report a case of a healthy 37 year old male who presented post motor vehicle accident and sustained open segmental fracture of distal 1/3rd of tibia and fibula with segmental bone loss of left tibia (Gustillo Anderson classification IIIb). Wound debridement of the left lower limb was done and he was initially put on left ankle spanning external fixator. On post trauma day 39, we proceeded with a 3-level Ilizarov external fixation with foot frame applied. Intra operatively, distal aspect of devitalized bone of proximal tibia was excised. Percutaneous tibia osteotomy was done over proximal tibia for bone transport. There was about 20cm of bone loss noted. Post operatively, patient was discharged home well. He proceeded to continue distraction for 200 days. Post bone transport, tibio talar fusion was done.

DISCUSSION

Massive bone defects managed via numerous techniques have given different levels of success. In regards to this case and various other studies, it has been proven that distraction osteogenesis using the Ilizarov technique produces a more fruitful outcome. This technique manages to address the excision of the devitalised portions, correction of alignment, length, rotation, plantar flexion and also the complications related to infections as well as wound management. In regards to patients young age, amputation was not an option for him. Moreover, the neurovascular status of his leg pursued us to salvage his limb and manage the complications that came along the process.



Figure 1: Pre operative

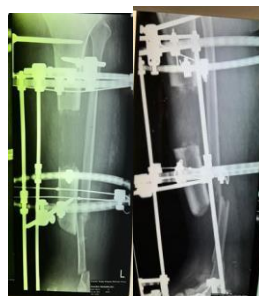


Figure 2 : Distraction Phase

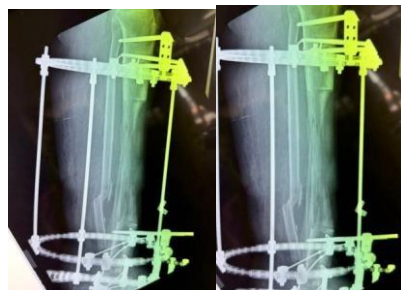


Figure 3: Consolidation Phase

CONCLUSION:

Distraction osteogenesis with Ilizarov external fixator is commonly encountered however a case with bone loss of 20cm is rarely seen thus requires high technical demands.

REFERENCES:

Dendrinos G, Kontos S, Lyritis E. Use of the Ilizarov technique for treatment of nonunion of the tibia associated with infection. J Bone Joint Surg Am 77(6)(1995)