Double Transport Distraction Histiogenesis To Reconstruct Massive Posttraumatic Floating Knee

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INTRODUCTION:

The management of massive posttraumatic floating knee is challenging. It is usually associated with large segmental bone defects and massive soft tissue injuries that carry higher risk of infection. For segmental bone defects, larger than 4-5 cm, with or without a soft-tissue defect, the need for more specialized management becomes essential. The two well-known methods are vascularized fibular grafting (VFG), and distraction osteogenesis or internal bone transport (IBT) with external fixator technique. Here, we described a case of 49-year-old woman involved in MVA with severe degloving injury with extensive soft tissue and segmental bone injury measuring about 16 cm in lengths which achieve bony union after performing double transport distraction histiogenesis. As Illizarov mentioned, "Infection burn on the fire of the bone regenerate", this technique is a good option for this condition.

METHODS:

No	Operation	Post Trauma
1	Emergency wound debridement, cross knee external fixator right lower limb	Within 6 hour
2	Multiple wound debridement	Day 4-day 28
3	Corticotomy of right femur, tibia with orthofix application for bone transport, split thickness skin graft right leg	7 weeks
4	Distraction histiogenesis (Double transport over femur and tibia)	10 weeks
5	Minimally invasive percutaneous osteosynthesis of right tibia, acute docking of right femur and tibia (7 month)	7 month
6	Plate after lengthening of right femur	10 month

RESULTS:

Figure 1: Initial injury

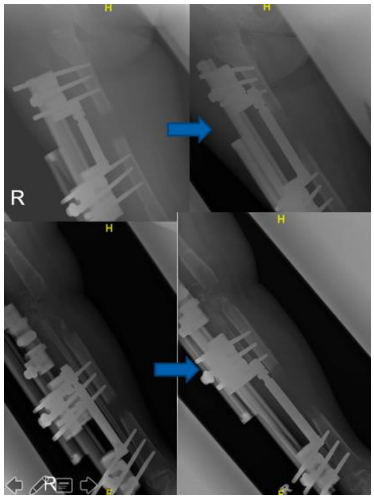

Figure 2: Double transport Distraction Histiogenesis

Figure 3: Bone union at 10-month post trauma

DISCUSSIONS:

Distraction Histiogenesis	Vascularized Fibular Bone Graft
• Less invasive method • Additional stability during the regeneration and consolidation phases • Alignment secured • Capacity to stop or even reverse the lengthening process	• Need microsurgery expertise and equipment • Prolonged operative times • Risk of failure of the vascular anastomosis • A well-vascularized bed is needed • Need to protect weight bearing up to 12-month • Mismatch in size when used in the lower limb (the graft may fracture) • Risk of inadequate hypertrophy of the vascularized graft to support weight bearing

Table 1: The comparison of treatment techniques

CONCLUSION:

Double transport distraction histiogenesis is a favourable and good surgical option for the reconstruction of massive bony defects in lower limb injury to achieve early functional outcome.

REFERENCES:

1. Lasanianos NG et al. Orthop Trauma 2009;24:149–63.