

Osteogenesis In Periosteum Preservation With Circular Frame Bone Stabilisation: A Case Report

Norhaslinda B¹; Ahmad Faris MK²; Ashraf A²; Kamarul AH²

¹ Orthopaedic Department, Hospital Tuanku Jaafar, Negeri Sembilan

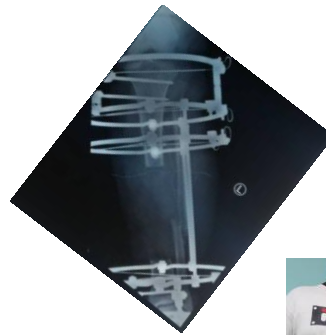
² Orthopaedic Department, Hospital Tengku Ampuan Rahimah, Selangor

INTRODUCTION:

Management segmental bone loss after resection of unhealthy bone with soft tissue defect, have always been extremely difficult and challenging. The treatment options to salvage the limb include soft tissue coverage, vascularised or non-vascularized fibula bone grafts, Masquelet developed the induced membrane technique, and distraction osteogenesis techniques for bone transport.

REPORT:

A 31-year-old man, who had motor-vehicle accident in November 2016, which sustained closed fracture of left tibia associated with internal degloving soft tissue injury. He was treated with multiple surgical debridement for the infected internal degloving soft tissue and cause the bone exposed. He was referred to expertise for limb salvaging in January 2017. He underwent for bone resection up to 10cm length with posterior periosteum preservation². Circular external fixator¹ for bone transport construct using ilizarov principles was applied for bone stabilization (Figure 1). Split skin graft was done for the soft tissue defect. He opted for fibula transfer rather than bone transport for his bone loss management. Serial plain radiograph was taken, prior to definitive operation, and noted present of bridging callus. After 1 year, the bone was consolidate without any surgeries or bone stimulant and even after removal of circular external fixator (Figure 2). Currently patient ambulating without any aids and able to do activity daily living normally (Figure 3).



(Figure 1)



(Figure 2)



(Figure 3)

CONCLUSION:

Eradicate infection either soft tissue or bone was the mainstay of treatment to salvage the limb. Preservation of healthy periosteum² during wound debridement should be take account to help in bone formation process. Ilizarov principles circular frame¹ was a good option to maintain the bone stability and its allow weight bearing, which lead to bone formation till bone consolidation was achieved.

REFERENCES:

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2. Ulf R. Knothe et al Effects of Mechanical loading patterns, bone graft, proximity to periosteum on bone defect healing. Journal of Biomechanics 2010; 43 : 2728-2737