

Bone Defect Management With Free Vascularized Fibula Graft And Pedicled Gastrocnemius Flap: Our Experience

¹Jagjoth S; ¹Terence MD; ¹Hadizie D; ¹Ghani SA; ¹Mohamed-Saat MA

¹Department of Orthopaedics, Hospital University Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

INTRODUCTION:

Bone defects post tumour resection or severe trauma are a constant headache for surgeons. Small defects may be resolved with bone grafting, however defects larger than 4cm usually require extensive work to overcome limb length discrepancy(LLD). Common options are bone transport or allografts. We present a case of using contralateral free vascularized fibular graft and ipsilateral pedicled gastrocnemius flap to tackle a bone defect of 8cm in a patient with non-union of tibia post motor vehicle accident(MVA).

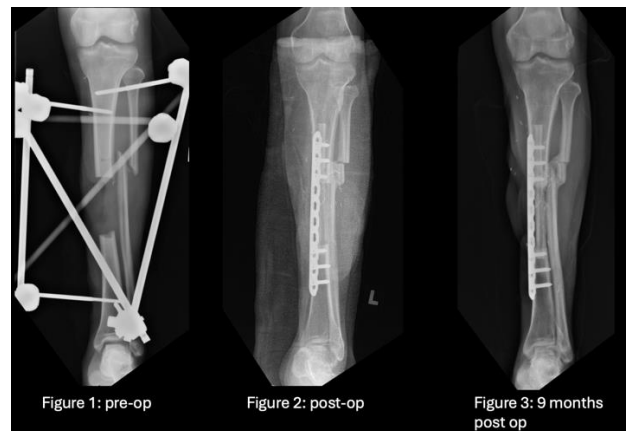
REPORT:

32-year-old gentleman was involved in MVA and sustained polyfractures, right humerus and femur and left tibia midshaft. He was initially put on an external fixator over his left tibia due to inadequate soft tissue coverage. After wound bed preparation, decision was made for contralateral vascularized osteocutaneous free fibula graft and plating of left tibia(Figure 1). Fibula graft measuring 16cm was harvested and inserted into the defect with 7cm inserted proximally and 1cm distally into remaining tibia. Locking plate was fixed with screws passing through the bone and graft. Remaining soft tissue defect measuring 14x6cm required a second operation and pedicled medial gastrocnemius flap was utilized for wound coverage.



Figure 1: intra-op image

Post operatively, there were no signs of infection and patient was allowed weight bearing after 6 months. At 9 months follow up, graft was united and no loosening of screws (Figure 3).



CONCLUSION:

Free vascularized fibula graft is an option of treatment for critical sized defects^[1]. If expertise are available, a vascularized graft should be utilized as it has a higher union rate compared to non-vascularised grafts^[2]. The combined efforts of trauma surgeons and the plastic reconstruction team will go a long way in saving a patient's limb.

REFERENCES:

1. Malizos, K et al, Free Vascularized Fibular Grafts for Reconstruction of Skeletal Defects. Journal of American Academy of Orthopaedic Surgeons 12(5): 360-369, September 2004.
2. Wang, E., A Comparison of Vascularized Free Fibular Flaps and Nonvascularized Fibular Grafts for Reconstruction of Long Bone Defects after Tumor Resection. Journal of Reconstructive Microsurgery, 33(03), 194–205. (2016).