

TIBIALIZATION OF FIBULA, CONQUERING TIBIA NONUNION WITH LARGE BONY DEFECT

Noorhuda AM^{1*}, Mohd Hazrul Hazwan BH¹, Shanmugapragash G1, Muhammad Luqman N¹, Nazri Mohd Yusof¹, Ahmad Fadzli S¹, Akmal Azim AA²

¹ Orthopaedic, Traumatology & Rehabilitation Department, Sultan Ahmad Shah Medical Center, Malaysia.

² Plastic and Reconstructive Surgery Unit, Sultan Ahmad Shah Medical Center, Malaysia.

*Corresponding author's email: mshuda88@gmail.com

ABSTRACT

We present a case of childhood non-union of tibia with fibula hypertrophy and equinus deformity of the right ankle. This is a case of a 47-year-old lady presenting with history of right tibia fracture that was complicated with osteomyelitis at the age of 3 years old. She had multiple debridement done resulting with bone loss during childhood. She had recent acute trauma to the right knee, and worsening bowing of the right leg which brought her to the attention of reconstructive orthopaedic surgery team. On examination, she is walking with a short limp gait. There are longitudinal scars over anteromedial and lateral aspect of the leg. The right knee is hyperextended at about 10 degrees with valgus deformity and multi ligamentous laxity. The right tibia is 10cm short. The right ankle is in fixed equinus. Radiographic examination revealed atrophic non-union of midshaft right tibia, hypertrophic right fibula, and anterolateral bowing of the fibula. An ipsilateral 7cm vascularised fibula graft was transposed onto the right tibia and stabilized using 2mm intramedullary Kirschner wire and Ilizarov external fixator, considering poor soft tissue condition. Bony union was expedite using iliac bone graft on another surgery. Union accomplished well within a year from first surgery. Achilles tendon release was also done to achieve plantigrade ankle. A better functional outcome could have been achieved following a limb lengthening procedure once union achieved, which patient refused. Ipsilateral fibula graft avoided morbidity to the contralateral limb. The utilization of hypertrophied vascularized fibular graft in conjunction with Kirschner wire and Ilizarov external fixator provides excellent mechanical and biological advantage. A good opportunity seized in managing a longstanding tibia non-union with large bony defect in adult patient.

Keyword: tibialization, nonunion, vascularised fibula graft

Acknowledgement: We would like to express special thanks to Plastic and Reconstructive Surgery team SASMEC for their contribution while managing this patient.