

## Graft Hypertrophy Following Vascularized Fibula Grafting in Severe Tibial Fracture with Bone Loss

<sup>1</sup>Ahmad Mustaqim MZ; <sup>1</sup>M Hadizie D; <sup>1</sup>N Sabrina AG; <sup>1</sup>M Aizat MS

<sup>1</sup>Orthopaedic Department, Hospital Universiti Sains Malaysia, Kelantan

### INTRODUCTION:

Open fractures are encountered daily by orthopedics throughout the world. Although it is common, yet, it is a challenging task to manage one. ‘Critical’ bone loss contributes to 3% of tibial fractures, but carries significant risk of union problem up 53% which need additional surgery<sup>[1]</sup>.

### REPORT:

33 years old male, involved in road traffic accident in 2019, sustained polyfracture which one of it is an open fracture midshaft left tibia and fibula (Gustilo 3a). Post initial debridement inadequate coverage of the tibial fracture, leaving an exposed tibia fracture ends, subsequently leading to bone necrosis.

He then underwent debridement and shortening of tibia leaving a 7cm bone gap [Figure 1]. Once wound management settles, proceeded with osteocutaneous flap fibula osteotomy and locking plate tibia with aim to achieve union and construct stability.



Figure 1. Post op plain radiograph

On subsequent follow up and period of rehabilitation, he was able to start full weight



Figure 2. Plain radiograph at 10 months

bearing at 6 months post-surgery with crutches, and without crutches by 8 months.

Serial plain radiograph monitored, noticed hypertrophy of the vascularized fibular graft compared to 1<sup>st</sup> surgery. With average diameter increment post operative and at 10 months post graft about 1.26cm to 1.38cm respectively, 12mm (9.5%).

### CONCLUSION:

Vascularized fibula graft is an established surgical techniques used in large bone defects or for those who unsuccessful with traditional grafting technique. A study shows an average of 9mm hypertrophy can be seen by 10 months and 38% cases can be recognizable on radiographs at an average 18 months<sup>[2]</sup>.

### REFERENCES:

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