

TRICORTICAL BONE GRAFT OUTCOME IN MANAGEMENT OF OSTEOMYELITIS METATARSAL BONE RECONSTRUCTION: A CASE REPORT

Mohd Aliff A, Indrarajah A, Asrul FA
Department Of Orthopaedics, Hospital Tuanku Fauziah, Kangar, Perlis

INTRODUCTION:

Tricortical bone graft mainly used in long bone reconstruction cases such as tibia and fibula. Thus, we take this opportunity to report on our experience in treating a patient with osteomyelitis of 1st MTB using this technique.

REPORT:

Eighteen years old gentleman presented with the complaint of pain and pus discharge from his right foot. Clinically, noted seropurulent discharge from previous injury site (post motor vehicle accident 6 months). The radiograph reveals osteomyelitis changes over right 1st MTB.

Bone resection performed with 1cm of infected and dead bone resected and the space filled with antibiotic cement. Mini external fixator applied to stabilize.

Post operation, the bone Culture came out as MRSA. However, he responded well to intravenous Vancomycin. A Second stage procedure planned for him in 6 weeks; however, it was done after 3 months due to the patient's compliance. Intraoperative, noted the surrounding soft tissue healthy with proper membrane formation. The antibiotics cement spacer removed and a tricortical iliac bone graft placed into the membrane formed. The external fixator revised to a Penning type.

The patient showed excellent progress. At 3 months follow up, he able to ambulate without pain. The wound healed and fractured united.



Figure 1 - x-ray pre and post insertion antibiotic cements and post insertion of tricortical iliac bone graft



Figure 2 – Tricortical iliac graft insertion and 3 months post insertion of bone graft

DISCUSSIONS:

A case like this was reported in Germany (2017). The case was diagnosed with osteomyelitis of 1st MTB head in which bone resection was done, then immediately filled with synthetic bone graft substitute. Successful outcome reported¹

Tricortical bone graft advantages include the availability of a fair bone quantity of bone graft (cancellous, cortico-cancellous or vascularised) with progenitor cells and growth factors, and structural support.²

CONCLUSION:

Tricortical bone graft to address reconstruction of metatarsal bone shows encouraging outcome. Further large-scale study to determining its use and successful out for similar reconstruction may be beneficial.

REFERENCES:

1. Anagnostakos, K et al (2018). Osteomyelitis of the First Metatarsal Head. *The Journal of Foot and Ankle Surgery*, 57(5), 1010-1013.
2. Schmidmaier. et al (2006). Quantitative assessment of growth factors in reaming aspirate, iliac crest, and platelet preparation. *Bone*, 39(5), 1156-1163.