

Use Of Demineralized Bone Matrix (Grafton) As An Adjunct To Promote Union In Ilizarov And Limb Reconstruction System

A Case Series Study

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INTRODUCTION:

Incidence of open fracture of long bones are increasing lately. Poor soft tissue condition and severe bone loss do not permit internal fixation and hence patients are offered Ilizarov and limb reconstruction system. Among the challenges faced during the treatment phase are delayed and non-union. In this study, we have adopted use of demineralized bone matrix (Grafton) as an adjunct to promote union in Ilizarov and limb reconstruction system.

MATERIALS AND METHOD:

This is a case series of 10 patients with mean age of 33 who developed delayed and non-union over fracture site following limb reconstruction. All patients have been ruled out of infection prior to operative intervention. All patients underwent bone chipping osteotomy and Grafton insertion at site of interest. Radiological outcomes were evaluated post surgery using Radiographic Union Score for individual long bones.

RESULTS:

Based on study, 8 out of 10 patients achieved union at mean of 4 months following bone chipping osteotomy and Grafton insertion.

DISCUSSION:

Reconstruction of massive bone defects are done via Ilizarov and limb reconstruction system. One of the commonest difficulties encountered are delayed and non-union. Demineralized bone matrix (DBM) is a form of

allograft using acidic solution to remove mineral components, while leaving much of the proteinaceous components native to bone, with small amounts of calcium-based solids, inorganic phosphates, and some trace cell debris¹. They are osteoconductive and osteoinductive biomaterial which help fill in bone defects and promote union.

Figure 1



Figure 2



Figure 1 and 2 shows radiological outcome 3 months post operatively

CONCLUSION:

We believe usage of demineralized bone matrix (Grafton) can be used as an adjunct to promote union in Ilizarov and limb reconstruction system.

REFERENCE:

Zhang, Hao et al. "Demineralized Bone Matrix Carriers and their Clinical Applications: An Overview." *Orthopaedic surgery* vol. 11,5 (2019): 725-737. doi:10.1111/os.12509