Reconstruction of Forearm Large Skeletal Defects by Free Vascularized Fibular Graft

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INTRODUCTION: Reconstruction of large skeletal defects of the forearm is challenging. Among several different treatments, the use of free vascularized fibular graft is a widely accepted option.
METHODS: The aim of this study is to evaluate the outcomes of this method that we used for the treatment of large skeletal defects due to traumatic causes and tumors as well. Between January 2008 and March 2019, 8 patients (5 male, 3 female), 14-38 years old with a skeletal defect of the forearm were treated surgically by the same surgeon. The cause of the defect was traumatic in 5 patients and giant
cell tumor in 3 patients, while the length of the defect was 8-12cm. The radius was reconstructed in 6 cases and the ulna in 2. All patients were operated with the use of a free vascularized fibular graft.
RESULTS: The clinical evaluation of the patients consisted of the functional status of the upper limb and the DASH score. The time of bone union was estimated through the regular radiological evaluation. Mean follow-up period was 26 months. All patients achieved radiological union after a mean of 16 weeks (range, 12-20). The mean active range of movement in the operated forearms was 50o supination and 60o pronation. No patient had any major complication or recurrence.
DISCUSSION AND CONCLUSION: The clinical and radiological outcomes of the study suggest that the use of a free vascularized fibular graft for the treatment of large bony defects of the forearm is a safe and viable option.