Primary vs Secondary Osteochondral Autograft Transplantation in Patients with Large Sized OLT
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Category: Ankle, Arthroscopy, Sports

Keywords: ankle; osteochondral lesion; marrow stimulation; osteochondral autograft transplantation

Introduction/Purpose: Osteochondral autograft transplantation (OAT) for large sized osteochondral lesions of the talus (OLT) has presented promising clinical results in recent studies. However, there was no study which has compared clinical outcomes between primary OAT and secondary OAT in the large sized OLT. The purpose of this study is to compare clinical outcomes between patients receiving primary transplantation and patients receiving secondary transplantation after failure of previous marrow stimulation for large sized OLT and investigate prognostic factor affecting clinical failures.

Methods: Between 2005 and 2014, 18 patients with large sized OLT (≥150 mm²) underwent primary OAT as a primary surgery (primary group) and 28 patients with large sized OLT underwent secondary OAT after a failure of arthroscopic marrow stimulation (secondary group). After arthroscopic inspection and debridement for concomitant soft tissue pathologies, conventional OAT procedures were performed. Clinical outcomes were assessed using visual analog scale (VAS), American Orthopaedic Foot & Ankle Society (AOFAS) scores, Foot and Ankle Outcome Score (FAOS) and re-operation rate. Factors associated with clinical failure were evaluated using bivariate analysis and logistic regression analysis. Survival outcomes were compared using Kaplan-Meier analysis.

Results: The mean follow-up time was 6.0 years (range 2.0-10.8) and the mean size of the lesion was 194.9 mm² (range 151.7-296.3). There was no significant difference in patients’ demographics, and preoperative findings between primary and secondary groups. Postoperative VAS, AOFAS score, FAOS, and re-operation rate had no significant difference between primary and secondary groups at the last follow-up. According to bivariate analysis, significant factor associated with clinical failure was not prior marrow stimulation but more than 225 mm² of lesion size in preoperative MRI. Logistic regression analysis revealed that preoperative AOFAS score was significant predictor of clinical failure after the OAT in this study. The survival probabilities were not significantly different between primary and secondary groups in Kaplan-Meier plots (P = .947).

Conclusion: Outcomes of secondary OAT were comparable to those of primary OAT in the large sized OLT. Therefore, we suggested that symptomatic patients with large sized OLT could be initially treated by either arthroscopic marrow stimulation or OAT and if failed with marrow stimulation, secondary OAT could be considered.