

Efficacy Of Marrow-Stimulating Technique In Arthroscopic Rotator Cuff Repair: A Prospective Randomized Study

Giuseppe Milano, MD, ITALY

Maristella Francesca Saccomanno, MD, ITALY

Silvia Careri, MD, ITALY

Carlo Fabbriani, MD, ITALY

Catholic University - Department of Orthopaedics
Rome, ITALY

Summary:

Microfractures did not significantly influence clinical outcome of rotator cuff repair but improved healing rate of large tears

Abstract:

Purpose: To evaluate the efficacy of marrow-stimulating technique by microfractures of the greater tuberosity during arthroscopic rotator cuff repair.

Methods: Eighty patients with a full-thickness rotator cuff tear underwent an arthroscopic single-row repair. Patients were divided in two groups of 40 cases each. In group 1, standard repair was performed; in group 2, microfractures of the greater tuberosity were performed to enhance tendon repair. Clinical outcome was assessed using the DASH score and normalized Constant score. Tendon integrity was assessed with MRI. Multivariate analysis was performed to determine which predictors were independently associated with the outcome. Significance was set at $p < .05$.

Results: Mean follow-up was 28.1 ± 3 months. Seven patients were lost at follow-up (2 in group 1 and 5 in group 2). Comparison between groups did not show significant differences for baseline characteristics. Mean DASH score was 28.6 ± 21.3 points in group 1 and 23.3 ± 20.1 points in group 2. Although difference was not statistically significant, confidence interval included 10-point value (minimal clinically important difference) in favor of the microfracture group. Difference in Constant score between groups was not significant. Tendon healing rate was 52.6% in group 1 and 65.7% in group 2, without significant difference between groups. Subgroup analysis for tear size showed that group 2 had significantly greater healing rate than group 1 for large tears ($p = 0.040$). Multivariate analysis showed that age, timing of symptoms, tear location, tendon retraction and fatty infiltration significantly affected the outcomes.

Conclusions: Microfractures did not significantly influence clinical outcome of rotator cuff repair, although they provided clinically relevant improvement. With numbers available, we observed that microfractures significantly improved healing rate of large rotator cuff tears.