

Mid-term Outcomes of Concomitant Arthroscopic Rotator Cuff Repair and Microfracture of Humeral Head Focal, Full-thickness Cartilage Lesions

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INTRODUCTION:

The treatment of full-thickness cartilage lesions of the humeral head in patients undergoing concomitant full-thickness rotator cuff tears and focal cartilage lesions of the humeral head are uncommon and present clinical challenges. The purpose of this study is to assess mid-term clinical and functional outcomes of patients undergoing combined arthroscopic rotator cuff repair (ARCR) and humeral head microfracture (HHMfx) for focal, full-thickness cartilage lesions of the humeral head.

METHODS:

This was a retrospective analysis of patients who underwent concomitant ARCR with HHMfx between January 2014 and June 2019. The minimum follow-up period was five years. Outcomes measures included the Visual Analogue Scale (VAS), Single Assessment Numeric Evaluation (SANE), American Shoulder and Elbow Surgeons (ASES) scores, and range of motion. Statistical analysis was performed using paired t-tests to compare preoperative and postoperative outcomes. Kaplan-Meier analysis was conducted to evaluate survival rates, defined as avoidance of total shoulder arthroplasty (TSA). Minimal Clinically Important Difference (MCID), Substantial Clinical Benefit (SCB), and Patient Acceptable Symptomatic State (PASS) were also evaluated.

RESULTS:

A total of 22 patients met inclusion criteria. The mean follow-up duration was 87.50 ± 19.60 months. Significant postoperative improvements were observed in all patient-reported outcome measures ($P < 0.0001$). VAS scores decreased postoperatively (6.36 ± 2.19 vs 0.86 ± 1.55 ; $P = 0.0001$), SANE improved (55.32 ± 18.93 vs 90.23 ± 10.66 ; $P = 0.0001$), and ASES increased (55.45 ± 13.80 vs 91.73 ± 10.90 ; $P = 0.0001$). Range of motion improved, although changes in forward flexion, external rotation, and internal rotation were not statistically significant ($P > 0.05$). At final follow-up, 90.91% of patients returned to pre-injury work and activity levels, and 86.36% resumed pre-injury sports participation. One patient (4.55%) progressed to TSA.

DISCUSSION AND CONCLUSION:

ARCR with HHMfx resulted in significant improvements in pain, function, and patient-reported outcomes at mid-term follow-up. With a 95% TSA-free survival rate, this approach appears to be a viable joint-preserving option for select patients with concomitant rotator cuff tears and focal humeral head cartilage lesions.