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- Category : Shoulder
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Patch Augmentation Using Acellular Dermal Matrix During Arthroscopic Rotator Cuff Repair Reduces Retear Rates in High-Risk Patients with Rotator Cuff Healing Index (RoHI) 7 or higher

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Introduction and Background

To compare retear rates and short-term clinical outcomes between arthroscopic rotator cuff repair (ARCR) and ARCR with patch augmentation using acellular dermal matrix (ADM) allograft according to the Rotator cuff Healing Index (RoHI), in order to identify appropriate indications for patch augmentation.

Material and Method

This retrospective study included patients aged 50 years or older who underwent primary arthroscopic rotator cuff repair (ARCR) between 2017 and 2023, with a minimum follow-up of 12 months. Patients were stratified according to the RoHI score and categorized into ARCR-alone (ARCR) and ARCR with patch augmentation (PA) groups. The receiver operating characteristic (ROC) curve analysis was performed to assess the predictive performance of the RoHI for retears in the ARCR group. Cumulative retear rates and clinical outcomes, including active range of motion (ROM), American Shoulder and Elbow Surgeons (ASES) and Constant score were compared between groups across RoHI score thresholds.

Results

A total of 738 patients were included (ARCR group, n = 659; PA group, n = 79). In the ARCR group, the RoHI demonstrated fair predictive performance (AUC, 0.774; 95% CI, 0.719–0.828), with an optimal cutoff score of 7. Among patients with RoHI score ≥ 7 , cumulative retear rate was significantly lower in the PA group than in the ARCR group (21.6% vs. 36.6%, $P = .048$). However, there were no significant differences in ROM and clinical outcomes (PA vs. ARCR; 72.7 ± 10.7 vs. 70.4 ± 13.3 for ASES score; 59.6 ± 10.9 vs. 61.7 ± 10.8 for Constant score) between groups at a mean follow-up of 18.9 ± 5.6 (range, 12 – 24) months.

Conclusions

A marked increase in the retear rate was observed from a RoHI score of 7 or higher, and in these high-risk patients, patch augmentation using ADM allograft effectively reduced the retear rate, although short-term clinical outcomes were comparable to those of ARCR-alone.



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Figure & Table 1.

