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Patch augmentation for large-to-massive rotator cuff tears : Heal well in anterior cable disruption ?

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Introduction and Background

Although previous studies have reported that human dermal allograft (HDA) patch augmentation improves clinical outcomes and reduces retear rates in large-to-massive rotator cuff tears (LMRCTs), its effectiveness in cases with respect to anterior cable integrity remains unclear. We compared clinical and structural outcomes of arthroscopic HDA patch augmentation for LMRCTs according to the status of the anterior rotator cable.

Material and Method

We retrospectively reviewed patients who underwent arthroscopic rotator cuff repair (ARCR) with HDA patch augmentation with a minimum 24 months follow-up between March 2020 and May 2023. Patients were classified into two groups according to the integrity of anterior cable disruption (Group A: anterior cable disruption group, Group B: intact cable group). Total 78 patients were analyzed, including 29 in Group A and 49 in Group B.

Results

Both groups showed significant improvement postoperatively in VAS, ASES, UCLA, as well as ROM including forward flexion, external rotation at side, and abduction (all $P < .001$). The minimal clinically important difference (MCID) achievement rates were 93.7% for VAS, 88.6% for ASES, and 73.4% for UCLA. The AHI significantly increased in both groups at the final follow-up compared with the preoperative measurements (both $P < .001$). MRI demonstrated a significant decrease in graft-cuff thickness from immediate postoperative to 12 month follow-up ($P < .001$). The overall retear rate was 7.7% (6/78), with no significant difference between groups (Group A: 10.3% [3/29] vs Group B: 6.1% [3/49], $P = .665$).

Conclusions

HDA patch augmentation for LMRCTs demonstrated excellent clinical outcomes, and low retear rates, regardless of anterior rotator cable integrity. The increased postoperative AHI indicated restoration of rotator cuff function, and the gradual thinning of the graft-cuff complex suggested biological remodeling and integration.

