

Editorial Commentary: Shoulder Superior Capsule Reconstruction Leads to Good Outcomes Despite Ambiguous Graft Healing Suggesting a Spacer Effect



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Abstract: Massive, retracted rotator cuff tears with poor tissue quality continue to pose a problem for the shoulder surgeon. Augmentation of such repairs with grafts, patches, spacers, or biologics is being closely investigated to help improve clinical outcomes and healing rates. Specifically, superior capsule reconstruction augmentation of such rotator cuff tears may lead to good outcomes. However, we do not truly understand how much native cuff tissue or graft healing is actually taking place. Clinically, superior capsule reconstruction augmentation of rotator cuff repair may simply be serving as a spacer.

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Mihata et al.¹ first described superior capsule reconstruction (SCR) with autograft to address massive irreparable rotator cuff tears (RCTs) by restoring superior shoulder stability. Since then, the technique has been adapted by using human acellular dermal allograft. Results overall having been promising.^{2,3} More recently, surgeons have used SCR for augmentation of rotator cuff repairs (RCRs). Mihata et al.⁴ published a study on the use of autograft SCR in the setting of RCR and found that although the quality of the repaired tendon improved on magnetic resonance imaging (MRI), the outcomes were no different than those of patients who underwent traditional RCR. In fact, fatty infiltration worsened when SCR augmentation was used.

Degan, Hartzler, Rahal, DeBerardino, and Burkhart,⁵ through their study “Prospective 1-Year Outcomes Are Maintained at Short-Term Final Follow-Up After Superior Capsular Reconstruction Augmentation of Complete Rotator Cuff Repair,” teach us that SCR augmentation of massive RCTs with poor tissue quality leads to good results. They use a technique in which the dermal graft is placed underneath the rotator cuff

tendon repair. Unfortunately, the study did not have a control group without SCR augmentation. Moreover, we do not really know if the graft or tendon healed well based on MRI. The inter-rater agreement in the study was poor. I cannot blame the authors, however. In my practice, when I look at MRI scans after SCR, I have difficulty interpreting how much of the graft has healed. Signal on the glenoid side is not uncommon. This begs the question, Do these grafts really need to heal or are they simply serving as a spacer? In fact, in another study, only 9 of 20 grafts showed complete healing on postoperative MRI scans.²

Many other techniques have recently been espoused either to help treat massive irreparable RCTs or to augment difficult RCRs. For example, the subacromial balloon spacer has shown some promising early results and recently gained Food and Drug Administration approval in the United States.^{6,7} Bio-inductive patches have also been promoted to help induce healing in large and massive RCTs.⁸ Moreover, the biceps tendon has gained traction in the augmentation of RCRs.^{9,10}

Is SCR grounded in solid biomechanical studies? Yes. Does SCR have a role in treating rotator cuff pathology? Sure. However, we need higher-level studies to gain an improved understanding of the clinical utility of augmenting RCRs with SCR. The American cartoonist Hank Ketcham was quoted as saying, “Flattery is like chewing gum. Enjoy it but don’t swallow it.” Let us enjoy the purported benefits of SCR augmentation, but

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let us also make sure it is not simply expensive chewing gum serving as a spacer.

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