

Arthroscopic Superior Capsular Reconstruction with Knotless Double-Row Dermal Allograft and Margin Convergence Augmentation

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Background: Superior capsular reconstruction (SCR) is an effective treatment option for rotator cuff injury. A variety of techniques and grafts can be used, and no clear method of graft fixation has been established.

Indications: SCR is indicated for the treatment of irreparable rotator cuff tears refractory to conservative measures, as was observed in this 58-year-old male patient. This procedure reduces superior translation of the humeral head and strengthens the superior capsule of the shoulder.

Technique Description: The patient was positioned in the beach-chair position. Three knotless anchors were placed onto the superior glenoid neck. Anchors were placed into the greater tuberosity adjacent to the articular margin to serve as medial row anchors for final double-row fixation. A dermal allograft was then shuttled into the subacromial space and secured to the glenoid neck. After completion of the SCR, margin convergence-style repair was performed to pull the biceps tendon and infraspinatus tendon over the top of the allograft for additional support.

Results: Complication rates following SCR vary. The most common complication is graft re-tear, which typically occurs at the medial anchor. Thus, many surgeons prefer a double-row technique for fixation. Graft augmentation to strengthen the overall construct reduces this risk. Dermal allografts less than 3 mm thick are associated with greater failure rates. At 6 months postoperatively, this patient reported 0 out of 10 pain, possessed full range of motion, and continued to gain strength through an at-home physical therapy program.

Discussion/Conclusion: Knotless double-row dermal allograft SCR with additional incorporation of the infraspinatus and biceps tendons is a viable option for patients experiencing rotator cuff injuries unresponsive to conservative management. Literature indicates that patient outcomes following this procedure are positive, with high patient satisfaction rates and improved anatomic and functional scores.

Patient Consent Disclosure Statement: The author(s) attests that consent has been obtained from any patient(s) appearing in this publication. If the individual may be identifiable, the author(s) has included a statement of release or other written form of approval from the patient(s) with this submission for publication.