

## Arthroscopic Superior Capsular Reconstruction Using the Long Head of the Biceps Tendon (LHBT)

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**Abstract :** Background: Rotator cuff tears are a common problem in the aging population. The prevalence of massive rotator cuff tears varies in some studies from 10% to 40%. Of irreparable rotator cuff tears (IRCTs), which are mostly associated with massive tear size, 79% are estimated to have recurrent tears after surgical repair. Recent studies have shown that superior capsule reconstruction (SCR) in massive rotator cuff tears can be an efficient technique with optimistic clinical scores and preservation of stable glenohumeral stability. Superior capsule reconstruction techniques most commonly use either fascia lata autograft or dermal allograft, both of which have their own benefits and drawbacks (such as the potential for donor site issues, allergic reactions, and high cost). We propose a simple technique for superior capsule reconstruction that involves using the long head of the biceps tendon as a local autograft; therefore, the comorbidities related to graft harvesting are eliminated. The long head of the biceps tendon proximal portion is relocated to the footprint and secured as the SCR, serving to both stabilize the glenohumeral joint and maintain vascular supply to aid healing. Objective: The purpose of this study is to assess the clinical outcomes of patients with large to massive RCTs treated by SCR using LHBT. Materials and methods: A study was performed of consecutive patients with large to massive RCTs who were treated by SCR using LHBT between January 2022 and December 2022. We use one double-loaded suture anchor to secure the long head of the biceps to the middle of the footprint. Two more anchors are used to repair the rotator cuff using a single-row technique, which is placed anteriorly and posteriorly on the lateral side of the previously transposed LHBT. Results: The 3 men and 5 women had an average age of 61.25 years (range 48 to 76 years) at the time of surgery. The average follow-up was 8.2 months (6 to 10 months) after surgery. The average preoperative ASES was 45.8, and the average postoperative ASES was 85.83. The average postoperative UCLA score was 29.12. VAS score was improved from 5.9 to 1.12. The mean preoperative ROM of forward flexion and external rotation of the shoulder was  $720 \pm 160$  and  $280 \pm 80$ , respectively. The mean postoperative ROM of forward flexion and external rotation were  $1310 \pm 220$  and  $630 \pm 60$ , respectively. There were no cases of progression of osteoarthritis or rotator cuff muscle atrophy. Conclusion: SCR using LHBT is considered a treatment option for patients with large or massive RC tears. It can restore superior glenohumeral stability and function of the shoulder joint and can be an effective procedure for selected patients, helping to avoid progression to cuff tear arthropathy.

**Keywords :** superior capsule reconstruction, large or massive rotator cuff tears, the long head of the biceps, stabilize the glenohumeral joint

**Conference Title :** ICOSMAS 2023 : International Conference on Orthopedics, Sports Medicine and Arthroscopic Surgery

**Conference Location :** San Francisco, United States

**Conference Dates :** June 05-06, 2023