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Mid-term Clinical Outcomes of Arthroscopic Long Head of Biceps Tendon Transposition for the Treatment of Massive Irreparable Rotator Cuff Tears in Elderly Patient

Shuanghong Guo¹

Orthopedics, Yichang Yiling Hospital, China¹

Introduction and Background

The treatment of massive irreparable rotator cuff tears is a worldwide challenge. Current treatment options, such as superior capsular reconstruction (SCR), reverse shoulder arthroplasty, and balloon implantation, have drawbacks including technical complexity, high costs, and uncertain efficacy. We have achieved satisfactory outcomes using the long head of the biceps tendon transposition technique to repair massive irreparable rotator cuff tears.

Material and Method

A retrospective analysis was conducted on 10 elderly patients with massive irreparable rotator cuff tears treated with arthroscopic LHB tendon transposition in our department from May 2022 to May 2023. There were 3 males and 7 females, involving 6 right shoulders and 4 left shoulders, with an average age of 70 ± 2 years. Preoperative MRI showed that all tears involved at least two tendons, with supraspinatus tendon retraction medial to the glenoid plane. Intraoperatively, the bicipital groove was released until the LHB tendon could be advanced anteriorly with low tension. The LHB tendon was fixed with one suture anchor at the greater tuberosity, followed by single-row repair of the released supraspinatus tendon. An additional anchor was placed posteriorly to repair the infraspinatus tendon (double-row repair was performed if infraspinatus tension was low). The subscapularis tendon was repaired if reparable. Patients were followed up at 3, 6, 12, and 24 months postoperatively to assess pain and functional improvement. MRI was performed at 1 year to evaluate healing of the rotator cuff and transposed LHB tendon. Clinical outcomes were assessed using the Visual Analogue Scale (VAS) for pain, American Shoulder and Elbow Surgeons (ASES) score, Constant-Murley score, and University of California Los Angeles (UCLA) shoulder score.

Results

All 10 patients were followed up for an average of 26.5 months (range 24–36 months). At the final follow-up, the average active forward elevation was $168.5^\circ \pm 5.6^\circ$, average abduction was $96.7^\circ \pm 7.6^\circ$, VAS pain score was 0.5 ± 1.2 , ASES score was 93.6 ± 3.6 , Constant-Murley score was 94.5 ± 2.0 , and UCLA score was 33.5 ± 1.7 . No infections, vascular, or nerve injuries occurred.

Conclusions

Arthroscopic long head of biceps tendon transposition demonstrates good mid-term clinical outcomes and is a safe and effective treatment option for massive irreparable rotator cuff tears in elderly patients.

