Clinical Evaluation of an Arthroscopic, Knotless, Suprapectoral Biceps Tenodesis Technique

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Objectives: Pathology of the long of head of the biceps tendon (LHB) is a well-known cause of shoulder pain that is commonly managed with arthroscopic suprapectoral biceps tenodesis when conservative treatment fails. The purpose of this study is to present an arthroscopic, knotless, suprapectoral biceps tenodesis technique known as the Loop ‘N’ Tack and report the clinical outcomes in patients with a minimum of 2 years follow-up.

Methods: The technique grasps the LHB proximally at the superior labrum and fixes it to the most distally visualized portion of the intra-articular bicipital groove. A retrospective review of all patients who had undergone the Loop ‘N’ Tack biceps tenodesis by the senior author between January 2009 and May 2014 was completed. Patients were excluded if any portion of the surgery was performed open, or if they had less than 2 years of follow-up. Charts were reviewed and patients were contacted for demographic data, time from surgery, concomitant procedures, worker’s compensation (WC) status, visual analog scale (VAS), American Shoulder and Elbow Surgeons (ASES), Single Assessment Numeric Evaluation (SANE), and University of California, Los Angeles (UCLA) scores. Statistical analysis was performed using Mann-Whitney U test for comparing non-parametric data sets.

Results: Follow-up evaluations were performed in 59 of 68 patients (87%). Average follow-up was 43 months. 88% of patients had at least 1 additional procedure performed at the time of biceps tenodesis. The mean ASES scores improved from 42.5 preoperatively to 90.1 postoperatively (p < 0.001). Fifty-four of fifty-nine patients (91.5%) had a good/excellent outcome with UCLA score > 27 and ASES > 70. Three patients (5%) reported biceps cramping pain with overuse. Two patients (3.3%) reported intermittent anterior shoulder pain similar to preoperative symptoms. No patients had developed a “Popeye” deformity at final clinical examination. 97% of patients reported that they were satisfied overall with the procedure. Comparing patients who had a rotator cuff repair or labrum repair at the time of biceps tenodesis with patients who did not have either, there were no significant differences in preoperative VAS or ASES, or postoperative outcomes scores. There were 10 WC patients who had worse postoperative VAS (p = 0.02), ASES (p = 0.03), SANE (p = 0.03), and UCLA scores (p = 0.02) compared to non-WC patients.

Conclusion: The Loop ‘N’ Tack biceps tenodesis technique provides a high rate of patient satisfaction and high outcomes scores with a low rate of postoperative pain and no reported incidence of ‘Popeye’ deformity. We believe these good clinical results are due to the secure fixation of the LHB while relieving tension and minimizing motion of the tendon within the bicipital groove.
Figure 1: Right shoulder, beach chair position, posterior viewing portal. (A) Suture loop around BT and tissue penetrator through BT to secure loop. (B) BT cut at insertion. BT = Biceps Tendon, G = Glenoid, HH = Humeral Head