

Paper #126

Postoperative Recovery Comparisons of Latissimus Dorsi Transfer to Lower Trapezius Transfer for the Treatment of Massive Rotator Cuff Tears

Jarret M. Woodmass, MD, FRCSC, CANADA

Eric R. Wagner, MD, MS, UNITED STATES

Michelle Chang, BS, UNITED STATES

Kathryn Welp, MS, UNITED STATES

Laurence Higgins, MD, UNITED STATES

Jon J. P. Warner, MD, UNITED STATES

Boston Shoulder Institute, Harvard University
Boston, MA, UNITED STATES

Summary:

Arthroscopic-assisted latissimus dorsi transfer and lower trapezius transfer demonstrate similar early recovery curves with significant improvements in pain and function.

Abstract:

Background

Massive irreparable posterosuperior rotator cuff tears pose a challenging problem and the optimal treatment remains controversial. In younger patients with external rotation lag signs, dynamic reconstruction using a tendon transfer is preferred. Open Latissimus dorsi (LD) tendon transfer has demonstrated excellent long-term outcomes while arthroscopic techniques have demonstrated reliable short-term outcomes. In recent years, arthroscopic lower trapezius (LT) tendon transfer has been described but no clinical outcomes have been reported to date. The purpose of this study is to compare the early post-operative recovery following open and arthroscopic LD transfer to arthroscopic LT tendon transfer for patients with massive irreparable posterosuperior rotator cuff pathology.

Methods

A multicenter retrospective analysis comparing the post-operative recovery outcomes after either an open or arthroscopic LD transfer and arthroscopic LT transfers by one of two high volume, fellowship trained surgeons was performed. Patients were included who had a minimum of 6 months follow-up. Preoperative and postoperative (2 weeks, 6 weeks, 3 months, 6 months, 1 year and 2 year) time points were evaluated. Outcomes measures included Visual Analog Pain Scale (VAS), American Shoulder and Elbow Surgeons (ASES) Shoulder Function Score, ASES Shoulder Index Score and SANE Score. Overall, 12 patients underwent open LD transfer (9 male, 3 female), 16 underwent arthroscopic LD transfer (13 male, 3 female) and 8 underwent an arthroscopic LT transfer (5 male, 3 female). The mean age for open LD, arthroscopic LD, and arthroscopic LT was 56.5, 56.9, and 53.3, respectively. The mean duration of follow-up for open LD, arthroscopic LD, and arthroscopic LT was 17.7, 7.9, and 11.3 months, respectively. The overall duration of follow-up was 12 months.

Results

Arthroscopic LD and LT transfers had significantly improved post-operative forward flexion ($p < 0.04$) and external rotation ($p < 0.0001$) while open LD transfer had significantly improved external rotation ($p = 0.0034$). Arthroscopic LD

Paper #126

and LT transfers had significantly reduced pain scores starting at 6 months ($p=0.03$ $p=0.05$) with open LD starting at one year ($p=0.008$) when compared to pre-operative measurements. Arthroscopic LD and LT transfers improved ASES Shoulder Function scores starting at one year ($p<0.03$). Arthroscopic LD, open LD, and arthroscopic LT had significantly improved SANE scores at 1 year ($p<0.01$). In comparing the post-operative outcomes, arthroscopic LT demonstrated significantly improved ASES shoulder index and VAS while arthroscopic LD transfer had improved ASES shoulder index compared to Open LD at 1 year ($p<0.03$). There was a total of 4 (11.4%) complications. These included an infection for *P. acnes* and an axillary nerve injury for arthroscopic LD transfers as well as a complex regional pain syndrome and a post-surgical adhesive capsulitis for open LD transfers.

Conclusions

Open latissimus dorsi, arthroscopic latissimus dorsi and arthroscopic lower trapezius transfer all provided significant improvement in pain and function at short-term follow-up. Arthroscopic LT tendon transfer provided earlier improvements in pain and sustained improvements in function when compared to open LD transfer and equivalence when compared to arthroscopic LD transfer. While this study is limited in its sample size it demonstrates promising early outcomes and safety for lower trapezius transfer. Further comparative studies are needed to evaluate the optimal conditions for using each of these treatments in the management of massive rotator cuff pathology.