Mid- to long-term outcomes of latissimus dorsi tendon transfer for massive irreparable posterosuperior rotator cuff tears: A systematic review and meta-analysis


Abstract

Background: This study aims to analyze the mid- to long-term results of the latissimus dorsi tendon for the treatment of massive posterosuperior irreparable rotator cuff tears as reported in high-quality publications and to determine its efficacy and safety.

Methods: A systematic review was performed according to the PRISMA guidelines. PubMed, Scopus, and EMBASE databases were searched until December 2022 to identify studies with a minimum 4-year follow-up. Clinical and radiographic outcomes, complications, and revision surgery data were collected. The publications included were analyzed quantitatively using the DerSimonian Laird random-effects model to estimate the change in outcomes from the preoperative to the postoperative condition. The proportion of complications and revisions were pooled using the Freeman-Tukey double arcsine transformation.

Results: Of the 618 publications identified through database search, 11 articles were considered eligible. A total of 421 patients (432 shoulders) were included in this analysis. Their mean age was 59.5 ± 4 years. Of these, 277 patients had mid-term follow-up (4 to 9 years), and 144 had long-term follow-up (more than 9 years). Postoperative improvements were considered significant for the following outcome parameters: Constant-Murley Score (0-100 scale), with a mean difference (MD) = 28 points (95% CI 21, 36; I² = 89%; P < .001); visual analog scale, with a standardized MD = 2.5 (95% CI 1.7, 3.3; P < .001; I² = 89%; P < .001); forward flexion, with a MD = 43° (95% CI 21°, 65°; I² = 95% P < .001); abduction, with a MD = 38° (95% CI 20°, 56°; I² = 85%; P < .01), and external rotation, with a MD = 8° (95% CI 1°, 16°; I² = 87%; P = .005). The overall reported mean complication rate was 13% (95% CI 9%, 19%; I² = 0%), while the reported mean revision rate was 6% (95% CI: 3%, 9%; I² = 0%).

Conclusions: Our pooled estimated results seem to indicate that latissimus dorsi tendon transfer significantly improves patient-reported outcomes, pain relief, range of motion, and strength, with modest rates of complications and revision surgery at mid- to long-term follow-up. In well-selected patients, latissimus dorsi tendon transfer may provide favorable outcomes for irreparable posterosuperior cuff tears.

Keywords

Latissimus dorsi tendon transfer, irreparable posterosuperior rotator cuff tear, LDTT, IRCT, patient-reported outcomes, range of motion, tendon transfer