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Paper #15

Structural Outcome of Fascia Lata Autograft after Arthroscopic Superior Capsule Reconstruction

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Summary:
After arthroscopic superior capsule reconstruction for irreparable rotator cuff tears, the fascia lata autografts healed well. The integrity and thickness of grafts at 12 months was maintained until at least 24 months after surgery.

Abstract:

Introduction

Chronic large and massive rotator cuff tears are challenging to repair completely because of tendon retraction with inelasticity, severe muscle atrophy, and fatty infiltration. Superior capsule reconstruction (SCR) was recently developed for the treatment of irreparable rotator cuff tears. It has been reported that the graft healing is the key to improve shoulder function after SCR. To our knowledge, however, there have been no study assessed the serial change of structural integrity of fascia lata graft after SCR. The aim of this study was to assess the structural outcome of fascia lata grafts after arthroscopic SCR.

Methods

We retrospectively reviewed 30 patients with irreparable rotator cuff tears who, between 2014 and 2016, had undergone arthroscopic SCR with fascia lata autograft and completed MRI examination at both 12 and 24 months after surgery. The fascia lata graft was prepared from single shoulder surgeon. The autologous fascia lata was harvested from the lateral thigh with care to include intermuscular septum that consists of thick fiber tissues. The fascia lata was folded 2 or 3 times and the intermuscular septum was included in it to achieve 6 to 8 mm thickness. The size and thickness of the graft was measured intra-operatively. Postoperative graft integrity was classified into 5 categories using oblique coronal and oblique sagittal views of T2-weighted images: type I, sufficient thickness with homogenously low intensity; type II, sufficient thickness with partial high intensity area; type III, insufficient thickness without discontinuity; type IV, presence of a minor discontinuity with 1 or 2 slices on both oblique coronal and sagittal images, suggesting a small graft tear; type V: presence of a major discontinuity observed in more than 2 slices, suggesting a medium or large graft tear. Postoperative graft thickness was measured at just above the medial margin of greater tuberosity using oblique coronal views of T2-weighted images on which 1cm posterior to bicipital groove of the humerus. McNemar test and paired t-test were performed for the statistical analysis.

Results

At surgery, the graft was 5.2 ± 0.4 cm (mean ± SD) long and 2.9 ± 0.5 cm wide; the graft thickness was 7.5 ± 1.7 mm medially and 8.6 ± 1.4 mm laterally. With regard to the postoperative graft integrity, 20 cases were type I, 7 were type II, 2 were type III, and 1 was type V at 12 months after surgery, whereas 24 cases were type I, 3 were type II, 2 were type III, and 1 was type V at 24 months after arthroscopic SCR. The rate of graft tear was 3.3% (1 of 30) at both

Paper #15

time points. Graft thickness was 7.0 ± 1.6 mm at 12 months after arthroscopic SCR and 6.8 ± 1.6 mm at 24 months; graft thickness did not differ significantly between time points (P = 0.46).

Conclusion

After arthroscopic SCR, the fascia lata autografts healed well. The integrity and thickness of grafts at 12 months were maintained until at least 24 months after surgery.