

Paper #143

Revision Rotator Cuff Reconstruction Results in Good Clinical Outcome Despite High Failure Rate in MRI in Mid-Term Follow-Up

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Summary:

The present study reports on RC rotator cuff (RC) tendon integrity examined via MRI after RC revision surgery. Revision ARCR improves clinical outcome and shoulder function in mid-term follow up. The clinical outcome scores were good and independent in patients with intact repair and failed rotator cuff healing.

Abstract:

Introduction

Re-tear rate after primary rotator cuff reconstruction is high and commonly leads to poorer clinical outcome and shoulder function. In the case of primary failure, revision rotator cuff revision repair (RCR) has become increasingly important to recreate rotator cuff integrity and improve outcome. To date, clinical and structural outcomes after ARCR have not been sufficiently investigated and described at mid-term follow-up.

The purpose of this study was to evaluate the clinical and radiological outcome after revision ARCR. It was hypothesized that revision ARCR surgery significantly improves clinical outcome measures and that the outcome positively correlates with tendon integrity on magnetic resonance imaging (MRI).

Methods

Patients who underwent arthroscopic rotator cuff revision surgery between 2008 and 2014 were retrospectively evaluated with a minimum follow up of two years. Outcome measurements were obtained by clinical examination, visual analog scale (VAS), Constant Score (CS), The American Shoulder and Elbow Surgeons Score (ASES) and the Disabilities of the Arm, Shoulder and Hand Score (DASH). Tendon integrity was determined using a 3-Tesla MRI and graded according to the Sugaya classification.

Results

Thirty-one of forty patients (77.5%) were available for final assessment at a mean follow-up of 50.3 ± 20.4 months. Clinical outcome scores significantly improved regarding CS (pre: 39.7 ± 16.7 vs. post: 65.1 ± 19.7 ; $p < 0.001$), ASES (pre: 44.2 ± 17.7 vs. post: 75.2 ± 24.8 ; $p < 0.001$) and DASH (pre: 68.6 ± 15.1 vs. post: 21.5 ± 19.1 ; $p < 0.001$). VAS decreased from 6.1 ± 1.8 preoperatively to 1.3 ± 1.8 at final follow up ($p < 0.001$). MRI demonstrated a re-tear rate of 55.5%. No differences for CS, ASES, and DASH were detected between intact repair and failures. Abduction strength was not significantly different in patients with intact repair and re-tears (55.5N vs. 44.0N; $p = 0.52$).

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Conclusion

Revision RCR improves clinical outcome and shoulder function at mid-term follow up. The clinical outcome scores were comparable in patients with an intact repair and failed rotator cuff healing. Therefore, tendon integrity was not correlated with better clinical outcome after revision ARCR at final follow up.