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Advantages of Arthroscopic Rotator Cuff Repair With a Transosseous Suture Technique: A Prospective Randomized Controlled Trial

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Abstract

Background: Rotator cuff tear is a common finding in patients with painful, poorly functioning shoulders. The surgical management of this disorder has improved greatly and can now be fully arthroscopic.

Purpose: To evaluate clinical and radiological results of arthroscopic rotator cuff repair using 2 different techniques: single-row anchor fixation versus transosseous hardware-free suture repair.

Study design: Randomized controlled trial; Level of evidence, 1.

Methods: Sixty-nine patients with rotator cuff tears were enrolled: 35 patients were operated with metal anchors and 34 with standardized transosseous repair. The patients were clinically evaluated before surgery, during the 28 days after surgery, and at least 1 year after the operation by the use of validated rating scores (Constant score, QuickDASH, and numerical rating scale [NRS]). Final follow-up was obtained at more than 3 years by a QuickDASH evaluation to detect any difference from the previous follow-up. During the follow-up, rotator cuff integrity was determined through magnetic resonance imaging and was classified according to the 5 Sugaya categories.

Results: Patients operated with the transosseous technique had significantly less pain, especially from the 15th postoperative day: In the third week, the mean NRS value for the anchor group was 3.00 while that for transosseous group was 2.46 ($P = .02$); in the fourth week, the values were 2.44 and 1.76, respectively ($P < .01$). No differences in functional outcome were noted between the 2 groups at the final evaluation. In the evaluation of rotator cuff repair integrity, based on Sugaya magnetic resonance imaging classification, no significant difference was found between the 2 techniques in terms of retear rate ($P = .81$).

Conclusion: No significant differences were found between the 2 arthroscopic repair techniques in terms of functional and radiological results. However, postoperative pain decreased more quickly after the transosseous procedure, which therefore emerges as a possible improvement in the surgical repair of the rotator cuff. Registration: NCT01815177 (ClinicalTrials.gov identifier).

Keywords: MRI evaluation; anchor repair; retear rate; rotator cuff; transosseous arthroscopic repair.