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Original Article

Arthroscopic rotator cuff repair: single-row *vs.* double-row – clinical results after one to four years

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ABSTRACT

Objective: Evaluate and compare the results of single-row (SR) *vs.* double-row (DR) arthroscopic rotator cuff repair.

Methods: From December 2009 to May 2013, 115 arthroscopic rotator cuff repairs were performed using suture anchors. After applying the exclusion criteria, there were 75 patients (79 shoulders) to be evaluated, retrospectively, of whom 53 (56 shoulders) attended re-evaluation. The patients were divided into two groups: SR with 29 shoulders, and DR) with 27 shoulders. The scoring systems for clinical evaluation were those of the University of California at Los Angeles (UCLA) and the American Shoulder and Elbow Surgeons (ASES).

Results: The mean follow-up period in the SR group was 37.8 months *vs.* 41.0 months in the DR group. The average UCLA score was 30.8 in the SR group *vs.* 32.6 in the DR group. This difference was not statistically significant ($p > 0.05$). The averages measured by the ASES score also showed no significant difference – 82.3 and 88.8 in the SR and DR groups, respectively.

Conclusion: No statistically significant difference was found between SR and DR arthroscopic rotator cuff repair performed by a single surgeon in the comparative analysis of UCLA and ASES scores.

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Reparo artroscópico do manguito rotador: fileira simples *versus* fileira dupla – Resultados clínicos após um a quatro anos

Palavras-chave:
Manguito rotador
Ombro
Bursite
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RESUMO

Objetivo: Avaliar e comparar os resultados do reparo artroscópico de lesões do manguito rotador feito pelas técnicas da fileira única (FU) e da fileira dupla (FD).
Métodos: De dezembro de 2009 até maio de 2013 foram feitos 115 reparos artroscópicos do manguito rotador com o uso de âncoras de sutura. Após a aplicação dos critérios de exclusão, restaram 75 pacientes (79 ombros) para serem avaliados retrospectivamente, dos quais 53 (56 ombros) compareceram para reavaliação. Os pacientes foram divididos em dois grupos: FU, com 29 ombros, e FD, com 27 ombros. A avaliação dos pacientes foi feita pelas escalas de pontos da *University of California at Los Angeles* (UCLA) e da *American Shoulder and Elbow Surgeons* (ASES).
Resultados: O tempo médio de seguimento no grupo FU foi de 37,8 meses e no grupo FD, de 41,0 meses. A média dos pontos obtidos pela escala de UCLA foi de 30,8 no grupo FU e de 32,6 no grupo FD. Essa diferença não foi estatisticamente significativa ($p > 0,05$). As médias obtidas pela escala da ASES também não apresentaram diferença estatística, ficaram em 82,3 no grupo FU e 88,8 no grupo FD.
Conclusões: Não foi encontrada diferença estatisticamente significativa entre os métodos FU e FD pela análise comparativa das médias dos escores UCLA e ASES em pacientes submetidos ao reparo artroscópico do manguito rotador por um único cirurgião.

Introduction

Rotator cuff injuries are common. A Japanese study observed full-thickness lesions in 20.7% of patients undergoing routine exams.[1] In cases in which the symptoms warrant surgical intervention, an arthroscopic approach is preferred by most American surgeons.[2] Many authors believe that the development of suture anchors has allowed the evolution and popularization of the arthroscopic technique; nonetheless, there is still controversy as to how the anchors should be placed. The two most commonly used are single-row (SR) and double-row (DR) techniques.[3] More modern techniques, which have modified the concept of DR, such as the transosseous equivalent, are already being used.[4] The original DR fixation method has been extensively studied in the laboratory. Several studies[5–7] have demonstrated its biomechanical superiority when compared with the SR method. In addition to its superiority in the laboratory, the literature has already demonstrated lower rates of *in vivo* re-rupture with the use of the new technique.[8] Nonetheless, there is no consensus regarding its superiority in functional results. In a magnetic resonance study, Tudisco et al.[5] observed lower rates of re-rupture with the use of DR, but those authors did not observe clinical differences between the patients operated by that technique and those who underwent SR fixation. The integrity of the rotator cuff after its repair is related to postoperative functional results.[9] As lower re-rupture rates have been observed, better clinical outcomes would be expected. However, in addition to Tudisco et al.,[5] other authors did not observe differences in clinical scores when comparing these two fixation techniques, as shown in a recently published meta-analysis.[3] Therefore, there is still controversy regarding the best arthroscopic fixation methods for the rotator cuff. In Brazil, no clinical studies comparing these methods have been retrieved.

The present study is aimed at comparing the clinical results obtained by two groups of patients who underwent arthroscopic repair of the rotator cuff. In one group, only one row of anchors was used; in the other, two rows were used.

Methods

This is a retrospective comparative study of two arthroscopic repair techniques for the rotator cuff (SR and DR repair), through summons for clinical evaluation of patients previously operated by a single surgeon. This study was approved by the Ethics Research Committee of this institution before the clinical records were reviewed and the patients contacted.

From December 2009 to May 2013, the author RFB performed 115 arthroscopic repairs of the rotator cuff using suture anchors. During that period, this surgeon routinely requested the necessary quantities of anchors to allow DR repair. However, the requested number of anchors was not always available. The cost of implant material, such as suture anchors, has been a limiting factor in Brazil. In these cases, when the number of anchors allowed only SR repair, this technique was used.

Only patients with lesions that could be repaired by either SR or DR were included in this study. Therefore, patients with extensive, over retracted lesions in whom it would not be possible to perform DR repair were excluded. Those with an associated diagnosis of any local comorbidity that required surgical intervention were also excluded. Thus, cases

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