

Effect of the rehabilitation received under private and state insurance after arthroscopic rotator cuff repair on the results

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Abstract

Aim: This study investigated the effect of the rehabilitation received in individual (private) and state institutions on the results with regard to the patients undergoing arthroscopic repair due to isolated supraspinatus tear.

Material and Methods: Fifty-eight patients, who underwent arthroscopic repair in the Orthopaedics and Traumatology clinic of the University betw Selçuk University between 2013 and 2015 were examined retrospectively and the preoperative and postoperative constant scores were calculated.

Results: 15 of the 37 patients included in the study were rehabilitated in individual institutions, while 20 patients in state institutions and two patients were monitored by a home exercise program. The mean postoperative constant score was found 73 in the group who received individual rehabilitation, and 65.6 in the patients who were rehabilitated in state institutions ($p < 0.05$); in the former, a significantly higher score was obtained.

Conclusion: We consider that receiving individual rehabilitation after arthroscopic repair will be more advantageous in terms of pain and functional recovery.

Keywords: Supraspinatus; arthroscopy; rehabilitation.

INTRODUCTION

Rotator cuff pathologies are one of the most common causes of shoulder pains and function losses at later ages (1). Supraspinatus tears are the most common pathology among these pathologies (1,2). Non-steroidal anti-inflammatory drugs constitute the open or arthroscopic repair treatment options with conservative options such as steroid injections and physiotherapy-rehabilitation practices (1). All physiotherapy and rehabilitation practices applied before or after surgery are intended to protect and increase the range of motion of the shoulder joint and the strength of the rotator cuff(1,3).

All these surgical and conservative practices constitute a significant cost for insurance companies, which may affect the rehabilitation received by the patient and consequently the outcome of the treatment (4). A comprehensive study on the cost and benefit of the rehabilitation after rotator

cuff repair reported that the group of patients with private health insurance benefited more from the treatment compared to the patient group treated under the general health insurance (5).

The aim of this study was to compare the benefit obtained from treatment between the two groups by examining the shoulder scores of the patients who received rehabilitation in private and in state institutions after arthroscopic rotator cuff repair. Our hypothesis was that shoulder scores and treatment were found superior in the patients who received individual rehabilitation.

MATERIAL and METHODS

Fifty-eight patients with the diagnosis of rotator cuff tear, who were surgically treated in the Selcuk University, Faculty of Medicine, Clinic of Orthopaedics and Traumatology, between 2013 and 2015, were retrospectively examined.

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The patients with isolated supraspinatus tear, who underwent a repair with arthroscopic technique and were directed to physical therapy after 3 weeks of immobilization, were identified as a criterion for inclusion in the study. The patients with pathology other than tear such as tendon pathology, SLAP lesion, Bankart lesion, and the patients, who underwent mini-open or open repair, were excluded from the study. As a result, 37 patients were included in the study.

Due to clinical experience, all patients who underwent rotator cuff repair are immobilized with a 30-degree shoulder abduction kit for 3 weeks. All patients were directed to physical therapy after a three-week immobilization. The general demographic data of the patients and their preoperative and postoperative Constant scores obtained after the completion of the physical therapy process were examined.

IBM SPSS Statistics Version 21 was used for statistical analysis. After the Shapiro-Wilk test for normality examination, Student's t-test (independent-samples t-test) was used to compare the parametric values (Shapiro-Wilk sig > 0.05), and the Mann-Whitney U test was used to compare the non-parametric (Shapiro-Wilk sig < 0.05) values.

RESULTS

The total number of cases included in the study was 37, of which 26 were females, and 11 were males. The average age was determined as 55 (41-71). It was seen that 15 patients received individual physiotherapy in private rehabilitation institutions, 20 patients were rehabilitated in state institution, and 2 patients completed the rehabilitation process with a home-exercise program. There was no significant difference in age between the two groups.

The average Preop Constant score of the patients who received individual rehabilitation was 37.1 (18-57), while the average Preop Constant score was 36.5 (14-63) of the patients who were rehabilitated in state institutions. No difference was identified between preoperative scores ($p > 0.05$). The postoperative scores were 73 (55-92) and 65.6 (50-83), respectively. A significant difference was found between the two groups ($p < 0.05$) with regard to the postoperative scores and the percentage change of the scores. In general, while the preoperative constant score was 36.9 (14-63), this score changed postoperatively to 68 (50-92) (Table-1).

Table 1. Constant scores and statistical significance between the both group

	Individual	State Ins.	p	General
Preop Constant	37.1(18-57)	36.5(14-63)	>0.05	36.9(14-63)
Postop Constant	73(55-92)	65.6(50-83)	<0.05	68(50-92)
%	96.7	79.7	<0.05	84.2

DISCUSSION

Although there are a large number of studies on rotator cuff rehabilitation in the literature, a limited number of studies have been reported about the effect of the rehabilitation received individually (with private health insurance) or in state institutions (with general health insurance) on the results. The study published by Arshi et al. in 2015 evaluated the patients, who underwent rotator cuff repair by open, mini-open or closed techniques, in terms of cost and benefit within the scope of private and public health insurances, and regardless of the surgical procedure, the benefit was about 80% in the patients treated under the private insurance, while this rate remained at 40% in the patients treated under the general insurance coverage. In terms of cost, although the cost of treatment under the private insurance is high, this is determined as an acceptable difference (5). In our study, significantly higher shoulder scores and better results were obtained in all patients who underwent individual rehabilitation after the arthroscopic rotator cuff repair with the same technique. The patients receiving individual rehabilitation stated that more time was spent with them and they experienced an effective recovery and improvement after one-to-one assisted exercises.

The standard rehabilitation process after a rotator cuff repair begins after 6 to 8 weeks of immobilization(6). Rehabilitation program applied after a rotator cuff repair vary. It was reported that the patients who started early passive movement developed less stiffness, but more frequent re-ruptures, compared to the patients who received delayed rehabilitation (6,7). All our patients underwent early physiotherapy after 3 weeks of postoperative immobilization. None of our patients had early re-rupture and stiffness.

In the United States, about 60% of the patients undergoing repair as a result of rotator cuff rupture are men (5,8). In our series, the female / male ratio is 26/11 and females constitute around 70% of the cases. It is considered that this is related with the sociocultural characteristics of our region.

Limitations

The very limited number of cases is the first of the limitations that affects the reliability of our study. We believe that more accurate results will be obtained in larger case series. Secondly, the size and the fatty degeneration of supraspinatus tendon tear were not examined in our study. And thirdly, only one scoring was used to evaluate the cases as the study was retrospective and larger and detailed information could not be obtained.

CONCLUSION

According to our results; the private (individual) rehabilitation in the patients who underwent arthroscopic rotator cuff repair was associated with better results compared to the rehabilitation received in state institutions. We observed that: the rehabilitation to be received after

surgical repair of rotator cuff pathologies which have high treatment costs and are associated with severe shoulder pain and long time for return to work was important as it affects the results; the patients could get better feedback from the physiotherapist in one-to-one rehabilitation; more time was spent with the patients who received one-to-one rehabilitation; and one-to-one assisted exercises provided more effective improvement and recovery. And we do believe that the standardization of individual rehabilitation in the patients undergoing arthroscopic shoulder surgery and immobilization process will provide benefit in terms of pain and functional recovery.

Competing interests: The authors declare that they have no competing interest.

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Ethical approval: This is a retrospective study and we didn't take a consent of ethics.

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