

ORIGINAL RESEARCH

Evaluation of Shoulder Function After Arthroscopic Rotator Cuff Repair Using University of California and Los Angeles Score: An Institutional Based Study

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ABSTRACT

Background: Rotator cuff tears are often the cause of incapacitating shoulder pain, reduced shoulder function, and compromised joint mechanics with clinical manifestations of shoulder stiffness, weakness, instability and roughness. The present study was conducted to determine shoulder function after Arthroscopic Rotator Cuff Repair Using University Of California And Los Angeles Score.

Materials& Methods: In the present study medical records of all cases of rotator cuff tears who underwent shoulder arthroscopy over a period of 2 years were assessed. 56 patients with full thickness rotator cuff tear confirmed by MRI were included in the study. Patients were assessed as per the UCLA Shoulder scoring system which involves post operative pain, function of shoulder, active forward flexion, strength of flexion and satisfaction of patient.

Results: The mean preoperative pain score was 2.56. After 1 month it was 5.98 and after 6 months it was 8.34. The mean preoperative function score was 2.97. After 1 month it was 5.56 and after 6 months it was 8.18. The mean preoperative active forward flexion score was 1.91. After 1 month it was 3.06 and after 6 months it was 4.54. The mean score of forward flexion score was 3.09. After 1 month it was 3.54 and after 6 months it was 4.58. The mean satisfaction score preoperatively it was 0. But after 1 month it was 3.67 and after 6 months it was 5.02.

Conclusion: The present study concluded that Arthroscopic repair of rotator cuff tear offers excellent functional outcome; with Improvement in pain, range of motion and strength of cuff tendons.

Keywords: Shoulder Function, Arthroscopic Rotator Cuff Repair, University Of California And Los Angeles Score.

INTRODUCTION

Rotator cuff disease is a painful condition with a multifactorial aetiology in which severe or chronic impingement of the rotator cuff tendons on the under-surface of the coracoacromial arch is often a significant factor.¹ Rotator cuff disease encompasses a wide range of pathology from minimal bursal or articular side irritation and tendonitis to severe

degenerative rotator cuff arthropathy. Rotator cuff pathology affects adults of all ages and other shoulder afflictions must be ruled out by careful history and physical examination.²The degree of recovery after arthroscopic rotator cuff repair varies distinctly between patients and failure to achieve patient satisfaction or improvement in patient reported outcome measures (PROMs) after arthroscopic rotator cuff repair has been estimated to vary from 7% to >90% in the literature.³⁻⁵ RC tears may cause significant pain, weakness, and limitation of motion. It can increase functional dependency in the elderly due to difficulties in completing activities of daily living and in young it causes absenteeism from work, decreased productivity and consequential socioeconomic loss.⁶ Only 4 percent of patients under 40 years show partial or complete tear as compared to 54 percent in patients over 60 years of age, in MRI studies.⁷Different PROMs have been developed to measure functional outcomes after shoulder surgery. The University of California at Los Angeles Shoulder Score (UCLASS), Constant Shoulder Score (CSS) and Oxford Shoulder Score (OSS) are widely used for the evaluation of functional and quality-of-life outcomes after shoulder surgery, with good reliability and validity.⁸⁻¹² The UCLA scale presents reliability ranging from moderate to very high¹³ and is not considered proper for clinical research.¹⁴The ASES score, meanwhile, has high reliability, validity, and capacity to detect significant differences.¹⁵ The present study was conducted to determine shoulder function after arthroscopic rotator cuff repair using University of California and Los Angeles Score.

MATERIALS & METHODS

In the present study medical records of all cases of rotator cuff tears who underwent shoulder arthroscopy over a period of 2 years were assessed. 56 patients with full thickness rotator cuff tear confirmed by MRI were included in the study. Patients with rotator cuff tear repaired with open surgery, massive irreparable rotator cuff tear, severe glenohumeral arthritis and biceps injury requiring tenotomy or tenodesis were excluded from this study. Patients were followed up for a minimum duration of six months and maximum duration of six months. Patients were assessed as per the UCLA Shoulder scoring system which involves post operative pain, function of shoulder, active forward flexion, strength of flexion and satisfaction of patient. The final functional outcome was graded as per documented in the UCLA shoulder rating sheet. Following arthroscopic rotator cuff repair 0-4 weeks – Initial period of rest to the shoulder joint was given. Hand, wrist and elbow range of motion exercises were performed. Only passive abduction was advised for the first month to avoid stressing the repair. 4-12 weeks- Active abduction exercises were employed after 1st month followed by forward flexion, internal and external rotation. After 3 months, Strengthening exercises of deltoid, biceps, triceps, rotator cuff, scapular stabilizers This is how range of motion of forward flexion and abduction upto 90 to 120 degrees was achieved.

RESULTS

The functional outcomes were evaluated using UCLA score postoperatively at 1 and 6 months and compared with preoperative scores.

The mean preoperative pain score was 2.56. After 1 month it was 5.98 and after 6 months it was 8.34. The mean preoperative function score was 2.97. After 1 month it was 5.56 and after 6 months it was 8.18. The mean preoperative active forward flexion score was 1.91. After 1 month it was 3.06 and after 6 months it was 4.54. The mean score of forward flexion score was 3.09. After 1 month it was 3.54 and after 6 months it was 4.58. The mean satisfaction score preoperatively it was 0. But after 1 month it was 3.67 and after 6 months it was 5.02.

Table 1: Distribution of pain score

Pain	Mean \pm SD	p-value
0 Month	2.56 \pm 1.34	0.000
1 Month	5.98 \pm 0.36	
6 Months	8.34 \pm 0.67	

Table 2: Distribution of function score

Function score	Mean \pm SD	p-value
0 Month	2.97 \pm 1.38	0.000
1 Month	5.56 \pm 1.56	
6 Month	8.18 \pm 0.76	

Table 3: Distribution of active forward flexion score

Active forward flexion	Mean \pm SD	p-value
0 Month	1.91 \pm 0.92	0.000
1 Month	3.06 \pm 0.00	
6 Month	4.54 \pm 0.62	

Table 4: Distribution of strength of forward flexion score

Strength of forward flexion score	Mean \pm SD	p-value
0 Month	3.09 \pm 0.57	0.000
1 Month	3.54 \pm 0.52	
6 Month	4.58 \pm 0.59	

Table 5: Distribution of satisfaction score

Satisfaction score	Mean \pm SD	p-value
0 Month	0.00 \pm 0.00	0.000
1 Month	3.67 \pm 2.18	
6 Month	5.02 \pm 0.00	

DISCUSSION

Rotator cuff disease includes a wide spectrum of pathology from minimal bursal or articular side irritation and tendonitis to severe degenerative rotator cuff arthropathy.¹⁶

Studies have shown that arthroscopic rotator cuff repair can improve function and quality of life through a combination of PROMs and different clinical parameters, which can in turn be used as indicators of treatment success which constitutes a clinically significant improvement in pain, patient satisfactions and expectations met after surgery.¹⁷

The mean preoperative pain score was 2.56. After 1 month it was 5.98 and after 6 months it was 8.34. The mean preoperative function score was 2.97. After 1 month it was 5.56 and after 6 months it was 8.18. The mean preoperative active forward flexion score was 1.91. After 1 month it was 3.06 and after 6 months it was 4.54. The mean score of forward flexion score was 3.09. After 1 month it was 3.54 and after 6 months it was 4.58. The mean satisfaction score preoperatively it was 0. But after 1 month it was 3.67 and after 6 months it was 5.02.

Arthroscopic repair of rotator cuff led to decreased immediate post operative pain, decreased surgical insult to the deltoid and decreased post operative stiffness. These effects translate to quicker return to functionality and work with increased patient satisfaction.¹⁸

Garg R et al showed improved functional outcome from UCLA score at presentation- 10.27 to UCLA at 6 months 30.41 with a p value < 0.001 which is graded as a good result. There was no significant gender difference in terms of incidence and postoperative functional outcome.

Maximum incidence was seen in age group- 51- 60 years with etiological inclination towards precedent trauma. No statistical difference between functional outcome of single and double row technique was noted.¹⁹

Vora P et al measured UCLA and ASES scores over 12 months period. The study shows improved functional outcome from UCLA presentation-12.2 and ASES presentation-30.8 to UCLA 12 months-30.64 and ASES 12 months-77.43. Evident from the study, there was no significant gender difference in terms of incidence and postoperative functional outcome. Maximum incidence is seen in age group-41-50 years with etiological inclination towards precedent trauma.¹⁶

CONCLUSION

The present study concluded that Arthroscopic repair of rotator cuff tear offers excellent functional outcome; with Improvement in pain, range of motion and strength of cuff tendons.

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