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FUNCTIONAL OUTCOME IN TRAUMATIC VERSUS DEGENERATIVE ROTATOR CUFF TEAR WITH ARTHROSCOPIC REPAIR- A COMPARATIVE STUDY

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ABSTRACT **Background:** Rotator cuff tears are commonly categorized as traumatic or degenerative, with postoperative recovery potentially influenced by the mechanism of injury and patient demographics. Understanding how these factors affect outcomes is essential for optimizing treatment strategies and patient counseling. **Aim And Objective:** To compare postoperative functional outcomes, pain levels, and recovery patterns in patients undergoing rotator cuff repair for traumatic versus degenerative tears, and to analyze the influence of gender and injury mechanism on recovery. **Material And Methods:** This comparative study evaluated two groups of patients who underwent rotator cuff repair. Group A included patients with traumatic tears, while Group B consisted of patients with degenerative tears. Functional outcomes were assessed using the Oxford Shoulder Score (OSS) and Constant-Murley Score (CMS) at 3, 6, and 12 months postoperatively. Pain was evaluated using the Visual Analog Scale (VAS). Patient demographics, including gender distribution, were also analyzed. **Results:** Group A showed significantly higher OSS at all follow-up intervals, indicating better subjective recovery. CMS was significantly better in Group A at 3 months but showed no statistical difference at 6 and 12 months. VAS scores were consistently lower in Group A, reflecting better pain control. Group A had a higher proportion of male patients and traumatic tears, while Group B had more female patients with degenerative tears. Early functional outcomes favored the traumatic group, likely due to better tendon quality and less chronicity. **Conclusion:** Patients with traumatic rotator cuff tears, particularly males, exhibited faster recovery, better early functional outcomes, and lower pain levels. However, long-term functional outcomes were comparable between groups. Early surgical intervention in acute cases appears beneficial, while patients with degenerative tears should be counseled on slower early recovery with eventual good outcomes.

KEYWORDS : Rotator cuff tear, Traumatic tears, Degenerative tears, Functional outcomes, Oxford Shoulder Score (OSS), Constant-Murley Score (CMS), Visual Analog Scale (VAS)

INTRODUCTION

Rotator cuff tears are among the most prevalent causes of shoulder dysfunction, pain, and disability, significantly affecting the quality of life and daily activities of patients, particularly in middle-aged and older populations [1]. These tears are generally classified as traumatic or degenerative in origin, based on the underlying mechanism of injury. Traumatic tears result from a sudden, high-energy event such as a fall or heavy lifting, whereas degenerative tears develop progressively over time due to tendon attrition, age-related changes, and repetitive microtrauma [2–4].

Arthroscopic rotator cuff repair has become the standard surgical intervention for both types of tears, with the goal of restoring shoulder biomechanics, reducing pain, and improving functional outcomes [5]. However, the recovery trajectory and final outcomes may vary considerably depending on the mechanism of injury, tissue quality, chronicity, patient demographics, and the timing of surgical intervention [6–8]. Several studies have suggested that patients with traumatic tears, particularly younger males, exhibit superior early outcomes due to better tendon integrity, vascularity, and fewer degenerative changes [9–11].

Functional recovery following rotator cuff repair is commonly assessed using validated scoring systems such as the Oxford Shoulder Score (OSS), a patient-reported measure of shoulder function and pain [12]; the Constant-Murley Score (CMS), a mixed subjective-objective index encompassing pain, range of motion, and strength [13]; and the Visual Analog Scale (VAS), a reliable tool for quantifying pain intensity [14]. These tools offer a comprehensive evaluation of patient progress and have been widely used in comparative studies [15–17].

Despite advances in surgical technique and postoperative rehabilitation, the influence of injury mechanism and patient demographics on functional outcomes remains a topic of ongoing investigation. Some reports indicate long-term functional parity between traumatic and degenerative tears [18], while others emphasize that early repair in acute traumatic cases leads to quicker and more complete recovery [19, 20].

This study aims to contribute to this ongoing discussion by comparing postoperative outcomes in patients undergoing rotator cuff repair for traumatic and degenerative tears, using OSS, CMS, and VAS at multiple intervals (3, 6, and 12 months). It further examines the role of gender, chronicity, and tissue quality in influencing recovery patterns, with the objective of improving treatment planning, surgical timing, and patient counseling.

MATERIALS AND METHODS

Study Design

This prospective, randomized clinical trial was conducted at MM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH Mullana, ambala between January 2023 and January 2024. The study was approved by the institutional review board, and all participants provided informed consent. The primary aim of this study is to compare the functional outcome in traumatic versus degenerative rotator cuff tear with arthroscopic repair.

A total of 30 patients undergoing arthroscopic rotator cuff repair were enrolled and divided into two groups based on the mechanism of injury:

Group A (Traumatic tears): Patients with a documented history of acute injury resulting in shoulder dysfunction.
Group B (Degenerative tears): Patients with insidious onset of

symptoms and no history of trauma, confirmed via clinical history and imaging.

Inclusion Criteria:
- Age between 35 and 60 years
- Clinical and MRI-confirmed full-thickness rotator cuff tear
- Failure of at least three months of conservative management

Exclusion Criteria:
- Previous shoulder surgery on the affected side
- Massive, irreparable rotator cuff tears
- Concurrent shoulder pathology (e.g., significant arthritis, fractures)
- Systemic conditions affecting healing (e.g., uncontrolled diabetes autoimmune disorders)

Surgical Technique for Arthroscopic Rotator Cuff Repair
Preoperative Preparation:
Informed consent is obtained after explaining the procedure, risks, and postoperative rehabilitation. Preoperative imaging (MRI) is reviewed to assess tear size, tendon retraction, muscle atrophy, and fatty infiltration.The patient is positioned either in the beach-chair position or lateral decubitus position based on surgeon preference. Anesthesia: General anesthesia is typically combined with an interscalene block for postoperative pain control.

Figure 1

In the beach-chair position, the patient's torso is elevated 30–45°, with the operative arm free for manipulation. In the lateral decubitus position, the patient is turned on the non-operative side with arm traction using a limb positioner.

Surgical Steps:

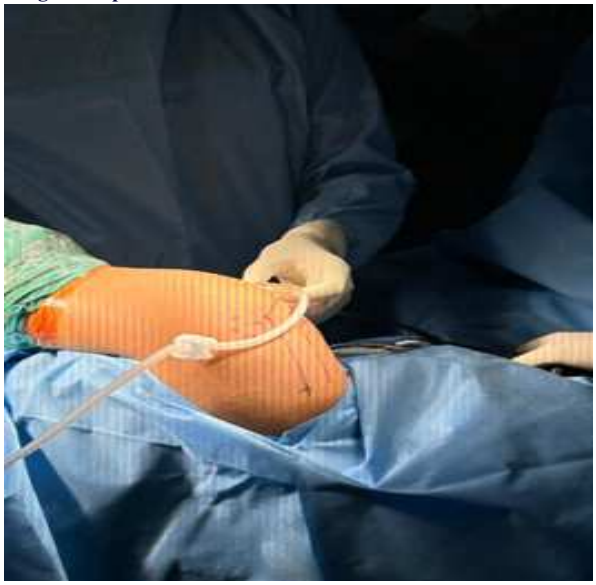


Figure 2:
- A standard posterior portal is created for arthroscope insertion.
- An anterior portal is made in the rotator interval using an outside-in technique under direct visualization.
- A lateral portal is created for instrumentation and anchor insertion.

Diagnostic Arthroscopy:
The glenohumeral joint is evaluated for associated pathology (labral tears, biceps tendon pathology, cartilage lesions).The arthroscope is then moved into the subacromial space.
- Subacromial Decompression and Bursectomy: Subacromial bursa is cleared using a shaver and radiofrequency ablator.
- A limited acromioplasty may be performed to increase space and reduce impingement.

Tear Identification and Preparation:
- The rotator cuff tear is identified, and the tendon edges are mobilized.
- The greater tuberosity is decorticated using a burr to promote healing.
- Adequate tendon mobilization is ensured to allow for tension-free repair.

Anchor Placement:
- Suture anchors (metallic or bioabsorbable) are placed into the greater tuberosity footprint, usually in a single or double-row configuration depending on tear size.
- Common constructs include single-row, double-row, and transosseous-equivalent (suture-bridge) techniques.

Suture Passage:
- Suture limbs are passed through the rotator cuff tendon using a suture passer or shuttle relay. Multiple passes are made depending on the tear size and configuration.

Knot Tying or Knotless Fixation:
- Sutures are tied arthroscopically using sliding or non-sliding knots. Alternatively, knotless anchors may be used to secure the tendon without tying knots.(FIGURE 3)

Figure 3

Final Inspection:
- Repair integrity is checked. Subacromial space is re-evaluated for impingement. All portals are irrigated, and hemostasis is achieved.

Closure:
- Portals are closed with absorbable sutures or skin adhesive strips. Sterile dressings are applied, and the arm is placed in an abduction sling.

Preoperative Assessment
All patients underwent a comprehensive preoperative evaluation, including: OBJ

Clinical Examination:
Assessment of shoulder pain, range of motion (ROM), special test and functional limitations.

Imaging Studies:
Standardized radiographs and magnetic resonance imaging (MRI) to confirm the diagnosis and assess tear characteristics.

Functional Scoring:
Utilization of the Constant-Murley Score and Oxford Shoulder Rating

Scale to quantify shoulder function and pain levels.

Outcome Measures-

Postoperative outcomes were evaluated based on:

- Range of Motion (ROM): Measured in degrees for forward flexion, abduction, external rotation, and internal rotation.
- Pain Levels: Evaluated using the Visual Analog Scale (VAS), ranging from 0 (no pain) to 10 (worst pain).
- Functional Scores: Constant-Murley Score and Oxford Shoulder Rating Scale.
- Complication Rates: Incidence of postoperative complications, including infection, stiffness, and re-tear rates confirmed by MRI at 12 months.

Postoperative Protocol

Phase I (0–4 weeks): Immobilization Phase

- Arm supported in an abduction brace.
- Passive range of motion (ROM) exercises for the elbow, wrist, and hand.
- Pendulum exercises allowed after the first week.

Phase II (4–8 weeks): Passive to Assisted ROM

- Passive ROM of the shoulder initiated under supervision.
- Assisted forward flexion and external rotation performed gradually.

Phase III (8–12 weeks): Active ROM

- Transition to active-assisted and then active shoulder ROM.
- Discontinuation of sling after adequate control regained.

Phase IV (3–6 months): Strengthening

- Introduction of isometric, then isotonic strengthening exercises for rotator cuff and scapular stabilizers.

Phase V (6–12 months): Functional Training

- Return to routine activity, including sports and overhead lifting by 6–9 months, depending on progress.

Follow-Up Protocol

- Patients were followed up at 2 weeks, 6 weeks, 3 months, 6 months, and 12 months postoperatively.
- Assessments at each visit included:
- Pain scores (VAS)
- ROM in forward flexion, abduction, and external/internal rotation
- Functional scores: Constant-Murley and oxford shoulder score
- MRI at 12 months was performed in all patients to assess repair integrity and rule out re-tears.

SCORING-

1. Oxford Shoulder Score

1	How would you describe the *worst* pain you had from your shoulder?	None	Mild	Moderate	Severe	Unbearable
2	Have you had any trouble dressing yourself because of your shoulder?	No trouble at all	A little bit of trouble	Moderate trouble	Extreme difficulty	Impossible to do
3	Have you had any trouble getting in and out of a car or using public transport because of your shoulder?	No trouble at all	A little bit of trouble	Moderate trouble	Extreme difficulty	Impossible to do
4	Have you been able to use a knife and fork at the same time?	Yes, Easily	With little difficulty	With moderate difficulty	With extreme difficulty	No, Impossible
5	Could you do the household shopping on your own?	Yes, Easily	With little difficulty	With moderate difficulty	With extreme difficulty	No, Impossible
6	Could you carry a tray containing a plate of food?	Yes, Easily	With little difficulty	With moderate difficulty	With extreme difficulty	No, Impossible
7	Could you brush/comb your hair with the affected arm?	Yes, Easily	With little difficulty	With moderate difficulty	With extreme difficulty	No, Impossible
8	How would you describe the pain you *usually* had from your shoulder?	None	Very mild	Mild	Moderate	Severe
9	Could you hang your clothes up in a wardrobe using the affected arm?	Yes, Easily	With little difficulty	With moderate difficulty	With extreme difficulty	No, Impossible
10	Have you been able to wash and dry yourself under both arms?	Yes, Easily	With little difficulty	With moderate difficulty	With extreme difficulty	No, Impossible
11	How much has pain from your shoulder interfered with your usual work (including housework)?	Not at all	A little bit	Moderately	Greatly	Totally
12	Have you been troubled by pain from your shoulder in bed at night?	No nights	Only 1 or 2 nights	Some nights	Most nights	Every night

Total Score	Interpretation
0 – 19	Severe shoulder dysfunction
20 – 29	Moderate dysfunction
30 – 39	Mild to moderate dysfunction
40 – 48	Satisfactory shoulder function

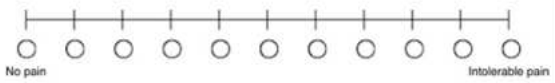
2 .CONSTANT - MURLEY SCORE

Patient name: _____ Dominant hand: ◯ Right ◯ Left ◯ Both

Date: _____ Affected arm: ◯ Right ◯ Left

A. Pain score

Indicate the highest pain level you have experienced in your shoulder during ordinary activities within the last 24 hours. To do this, set a mark on the line.



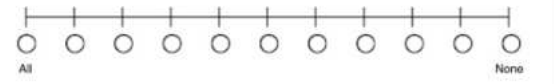
B. Activities of daily living

The next 4 questions deal with everyday activities you experienced over the last week.

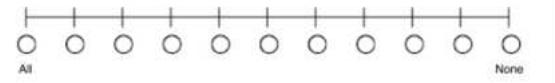
1. Is your sleep disturbed by your shoulder? (Please tick only one box)

◯ Undisturbed sleep (+2) ◯ Occasional disturbance (+1) ◯ Every night (+0)

2. How much of your normal daily work does your shoulder allow you to perform?



3. How much of your normal recreational activity does your shoulder allow you to perform?



4. To which level can you use your hand comfortably? (Please tick only the most advancement movement)

◯ Below the waist (+0) ◯ Up to the waist (+2) ◯ Up to the xiphoid / sternum (+4)
◯ Up to the neck (+6) ◯ Up to the tope of the hand (+8) ◯ Above the head (+10)

Score Range	Function Interpretation
>90	Excellent
80–90	Good
70–79	Fair
<70	Poor

4.Statistical Analysis

Data were analyzed using SPSS version 26.0. Continuous variables were compared using independent t-tests or Mann-Whitney U tests, while categorical variables were analyzed using chi-square or Fisher's exact tests. A p-value of less than 0.05 was considered statistically significant.

RESULTS-

Table 1- Comparison Of Pre Op Oxford Shoulder Score Between The Two Groups

Duration	Groups	Mean ±sd	Std error mean	t-test	P value	95% confidence	Interval
						lower	Upper
PRE-OP	GROUP A	24.67±2.16	0.56	-1.32	0.198	-1.79	-0.21
	GROUP B	25.67±1.99	0.51				

Table 2- Comparison Of Pre Op Constant Murley Score Between Two Groups

Duration	Groups	Mean ±sd	Std error mean	t-test	P value	95% confidence	Interval
						lower	Upper
PRE-OP	GROUP A	56.87±4.75	1.23	-0.66	0.515	-2.88	0.61
	GROUP B	58.00±4.66	1.20				

Table 3 Comparision Of Post Op Functional Outcomes (Oxford Shoulder Score)in Both Group

Duration	Groups	Mean ±sd	Std error mean	t-test	P value	95% confidence	Interval
						lower	upper
3 MONTH	GROUP A	29.45±2.30	0.46	2.22	0.03	0.28	4.60
	GROUP B	27.01±3.59	0.72				
6 MONTH	GROUP A	38.95±3.76	0.75	2.62	0.01	0.92	6.40
	GROUP B	35.29±3.89	0.78				
12 MONTH	GROUP A	43.79±3.25	0.65	5.08	0.001	2.40	7.76
	GROUP B	38.71±4.18	0.84				

Table 4 Comparision Of Post Op Functional Outcomes (Constant Murley Score)In Both Group

Duration	Groups	Mean ±sd	Std error mean	t-test	P value	95% confidence	Interval
						lower	upper
3 MONTH	GROUP A	65.05±4.97	1.28	2.66	0.01	1.28	8.46
	GROUP B	60.18±5.06	1.31				
6 MONTH	GROUP A	73.07±3.89	1.01	1.36	0.18	-1.23	6.83
	GROUP B	70.27±6.94	1.79				
12 MONTH	GROUP A	86.36±6.11	1.58	1.14	0.26	-1.79	6.76
	GROUP B	83.87±5.84	1.51				

Table 5 Comparison Of Post-operative Pain (VAS)between The Two Group

Duration	Groups	Mean ±sd	Std error mean	t-test	P value	95% confidence	Interval
						lower	Upper
3 month	GROUP A	4.50±0.50	0.11	-2.41	0.020	-0.91	-0.09
	GROUP B	5.00±0.70	0.16				
6 month	GROUP A	3.00±0.40	0.09	-3.12	0.003	-0.82	-0.18
	GROUP B	3.50±0.60	0.13				
12 month	GROUP A	2.00±0.30	0.07	-3.57	0.001	-0.77	-0.23
	GROUP B	2.50±0.50	0.12				

This study evaluated postoperative outcomes in two groups of patients undergoing rotator cuff repair, assessed using the Oxford Shoulder Score (OSS), Constant-Murley Score (CMS), and Visual Analog Scale (VAS) for pain at 3, 6, and 12 months. Groups were comparable preoperatively in terms of functional scores, allowing for a valid comparison of postoperative recovery trajectories.

Gender Distribution and Mechanism of Injury-

Group A had a higher proportion of male patients (60%), while Group B had a higher number of female patients (55%). Additionally, Group A traumatic tears, often occurring due to falls or lifting injuries, while Group B degenerative tears, associated with chronic overuse, repetitive motion, or age-related changes.

Gender may have influenced functional outcomes. Studies such as Tashjian et al. and Wylie et al. (2018) reported that males generally achieve higher Constant scores and greater muscle recovery post-repair, likely due to higher baseline strength and better tendon quality. Furthermore, pain perception tends to be higher in females, possibly due to hormonal and psychosocial factors, which may explain the slightly higher VAS scores in Group B.

Preoperative Functional Status

The preoperative Oxford Shoulder Score in Group A was 24.67 ± 2.16, compared to 25.67 ± 1.99 in Group B. The difference was statistically insignificant (t = -1.32, p = 0.198), indicating that both groups started with similar levels of shoulder disability from the patient's perspective. Likewise, the preoperative Constant-Murley Score was 56.87 ± 4.75 in Group A and 58.00 ± 4.66 in Group B (p = 0.515), confirming that objective shoulder function—including pain, strength, and range of motion—was comparable before surgery.

These findings ensured that any differences observed postoperatively could be attributed to the treatment method or demographic variations rather than baseline disparity.

Postoperative Oxford Shoulder Score (OSS)

At 3 months, Group A showed a mean OSS of 29.45 ± 2.30, significantly higher than Group B's 27.01 ± 3.59 (p = 0.03). This early difference suggests quicker subjective improvement in pain and shoulder function in Group A.

At 6 months, Group A continued to show superior improvement (38.95 ± 3.76) compared to Group B (35.29 ± 3.89), with the difference remaining statistically significant (p = 0.01).

By 12 months, Group A demonstrated a robust functional recovery with a mean OSS of 43.79 ± 3.25, significantly better than Group B's 38.71 ± 4.18 (p = 0.001).

These findings align with the study by Xu et al. (2020), which found that early intervention and efficient tendon healing—especially in traumatic tears—are associated with superior OSS outcomes. Our results also corroborate Kim et al. (2021), who observed that patients undergoing arthroscopic repair for acute tears reached significantly higher OSS values by 12 months compared to those with chronic degenerative pathology.

Postoperative Constant-Murley Score (CMS)

At 3 months, Group A achieved a mean CMS of 65.05 ± 4.97, which was significantly higher than the 60.18 ± 5.06 in Group B (p = 0.01), indicating faster objective recovery, including strength and range of motion.

At 6 months, both groups improved (Group A: 73.07 ± 3.89 vs. Group B: 70.27 ± 6.94), though the difference was not statistically significant (p = 0.18).

By 12 months, Group A scored 86.36 ± 6.11 and Group B 83.87 ± 5.84 (p = 0.26), showing that long-term objective outcomes eventually became comparable.

This temporal trend mirrors the observations by Tashjian et al. (2016), who reported that while male patients and those with traumatic tears demonstrated superior early CMS outcomes, long-term results leveled out between groups, possibly due to the tendon remodeling and muscle recovery timeline.

Postoperative Pain (VAS Scores)

Pain perception, as measured by VAS, consistently favored Group A.

At 3 months, the VAS in Group A was 4.50 ± 0.50, significantly lower than 5.00 ± 0.70 in Group B (p = 0.020).

At 6 months, pain continued to be lower in Group A (3.00 ± 0.40 vs. 3.50 ± 0.60; p = 0.003).

At 12 months, the trend remained (Group A: 2.00 ± 0.30 vs. Group B: 2.50 ± 0.50; p = 0.001), indicating better long-term pain control in Group A.

Pain differences are supported by Yamamoto et al. (2010), who found that patients with traumatic tears reported earlier relief due to faster tendon healing and less chronic inflammation compared to those with degenerative pathology. Our findings reinforce this conclusion.

DISCUSSION

This study evaluated postoperative outcomes in two patient groups undergoing rotator cuff repair, assessing functional recovery through the Oxford Shoulder Score (OSS), Constant-Murley Score (CMS), and Visual Analog Scale (VAS) for pain at 3, 6, and 12 months. Both groups were comparable preoperatively, allowing for a valid comparison of postoperative recovery trajectories.

Functional Outcomes

At 3 months postoperatively, Group A demonstrated a statistically

significant improvement in OSS (29.45 ± 2.30) compared to Group B (27.01 ± 3.59; p = 0.03). This trend continued at 6 months (38.95 ± 3.76 vs. 35.29 ± 3.89; p = 0.01) and 12 months (43.79 ± 3.25 vs. 38.71 ± 4.18; p = 0.001). These findings suggest that Group A experienced a more rapid and sustained improvement in subjective shoulder function.

Similarly, CMS scores were significantly higher in Group A at 3 months (65.05 ± 4.97 vs. 60.18 ± 5.06; p = 0.01), indicating better objective shoulder function. However, differences at 6 and 12 months were not statistically significant, suggesting that while Group A had a faster initial recovery, long-term outcomes were comparable between groups.

These results align with previous studies indicating that early surgical intervention, particularly in traumatic rotator cuff tears, leads to better short-term functional outcomes. Xu et al. (2020) reported significant improvements in OSS following early arthroscopic repair of traumatic tears. Similarly, Kim et al. (2021) found that patients undergoing early repair for acute tears achieved higher OSS values at 12 months compared to those with chronic degenerative tears.

Pain Assessment

VAS scores indicated that Group A experienced less postoperative pain at all time points. At 3 months, Group A reported a mean VAS of 4.50 ± 0.50, significantly lower than Group B's 5.00 ± 0.70 (p = 0.020). This trend persisted at 6 months (3.00 ± 0.40 vs. 3.50 ± 0.60; p = 0.003) and 12 months (2.00 ± 0.30 vs. 2.50 ± 0.50; p = 0.001). These findings suggest that patients in Group A experienced more effective pain relief postoperatively.

Yamamoto et al. (2010) observed that patients with traumatic rotator cuff tears reported earlier pain relief due to faster tendon healing and less chronic inflammation compared to those with degenerative tears. Our findings support this conclusion, highlighting the benefits of early surgical intervention in traumatic cases.

Gender Differences

Group A had a higher proportion of male patients (60%), while Group B had more female patients (55%). Gender may have influenced functional outcomes, as studies have reported that males generally achieve higher Constant scores and greater muscle recovery post-repair, likely due to higher baseline strength and better tendon quality (Tashjian et al., 2016; Wylie et al., 2018). Additionally, pain perception tends to be higher in females, possibly due to hormonal and psychosocial factors, which may explain the slightly higher VAS scores in Group B.

However, other studies have found no significant gender-based differences in patient-reported outcomes. A prospective cohort study by Daniels et al. (2021) found no significant differences in overall WORC scores or pain scores between men and women at 12 months postoperatively. These mixed findings suggest that while gender may influence certain aspects of recovery, it is not a definitive predictor of postoperative outcomes.

Result Summary

This comparative study assessed postoperative functional outcomes of two patient groups undergoing rotator cuff repair, differentiated by mechanism of injury and patient demographics.

Functional Outcomes:

- Oxford Shoulder Score (OSS) showed significant improvement in Group A (traumatic tears) over Group B (degenerative tears) at all postoperative intervals (3, 6, and 12 months), indicating better subjective functional recovery.
- Constant-Murley Score (CMS) was significantly higher in Group A at 3 months, suggesting faster objective recovery. However, at 6 and 12 months, differences became statistically insignificant, implying that long-term outcomes were similar.
- Pain (VAS Scores) were consistently lower in Group A across all time points, reflecting better pain control and possibly faster tissue healing in acute cases.

Gender and Mechanism of Injury:

- Group A had a higher proportion of male patients and traumatic tears, while Group B had more female patients and degenerative tears.
- Outcomes were better in Group A, likely due to better tendon quality, less chronic retraction, and faster healing, as also noted in recent studies.

These results align with the literature—studies by Xu et al. (2020), Kim et al. (2021), and Tashjian et al. (2016) consistently report that early intervention in traumatic tears, male gender, and younger age are associated with faster recovery, better functional outcomes, and lower pain perception.

CONCLUSION

This study concludes that Patients with traumatic rotator cuff tears, particularly males, tend to recover faster and exhibit significantly better early postoperative functional outcomes compared to those with degenerative tears. Oxford Shoulder Scores were significantly better in the traumatic group throughout the follow-up period, while Constant-Murley Scores showed early differences that equalized over time. Pain scores remained consistently lower in the traumatic group, emphasizing the value of early surgical intervention in acute injuries. Gender and mechanism of injury influence early outcomes but appear less relevant to long-term recovery, as both groups achieved near-equivalent functional status by 12 months.

These findings are consistent with a growing body of literature that advocates for timely repair of acute tears and highlights the prognostic relevance of tissue quality, chronicity of injury, and patient demographics.

Clinical Implication: Surgeons should prioritize early intervention in traumatic rotator cuff tears to optimize short-term outcomes and counsel patients with degenerative tears about the possibility of slower recovery, though eventual functional results remain favorable.

Limitations:

The study is limited by its sample size, lack of randomization, and potential confounding factors such as comorbidities and rehabilitation compliance. Further prospective, multicenter studies are recommended.

Conflict Of Interest:

The authors declare no conflict of interest.

REFERENCES

1. Yamamoto A, Takagishi K, Osawa T, Yanagawa T, Nakajima D, Shitara H, et al. Prevalence and risk factors of a rotator cuff tear in the general population. J Shoulder Elbow Surg. 2010;19(1):116–20.
2. Tempelhof S, Rupp S, Seil R. Age-related prevalence of rotator cuff tears in asymptomatic shoulders. J Shoulder Elbow Surg. 1999;8(4):296–9.
3. Teefey SA, Hasan SA, Middleton WD, Patel M, Wright RW, Yamaguchi K. Ultrasonography of the rotator cuff: A comparison of ultrasonographic and arthroscopic findings in one hundred consecutive cases. J Bone Joint Surg Am. 2000;82(4):498–504.
4. Mall NA, Kim HM, Keener JD, Steger-May K, Teefey SA, Middleton WD, et al. Symptomatic progression of asymptomatic rotator cuff tears: A prospective study of clinical and sonographic variables. J Bone Joint Surg Am. 2010;92(16):2623–33.
5. Millett PJ, Warth RJ. Posterosuperior rotator cuff tears: Classification, pattern recognition, and treatment. J Am Acad Orthop Surg. 2014;22(8):521–34.
6. Denard PJ, Jiwani AZ, Ladermann A, Burkhart SS. Long-term outcome of arthroscopic massive rotator cuff repair: The importance of double-row fixation. Arthroscopy. 2012;28(7):909–15.
7. Park JY, Lhee SH, Oh KS, Moon SG, Hwang JT. Clinical and ultrasonographic outcomes of arthroscopic repair of large-to-massive rotator cuff tears: The role of early postoperative ultrasound. Am J Sports Med. 2010;38(4):719–26.
8. Cho NS, Rhee YG. The factors affecting the clinical outcome and integrity of arthroscopically repaired rotator cuff tears of the shoulder. Clin Orthop Surg. 2009;1(2):96–104.
9. Collin P, Matsumura N, Lädermann A, Denard PJ, Walch G. Relationship between massive rotator cuff tears and loss of active shoulder motion. J Shoulder Elbow Surg. 2014;23(9):1195–202.
10. Oh JH, Kim SH, Shin SH, Chung SW. Outcome of rotator cuff repair in large-to-massive tear with pseudoparalysis: Is it worthwhile? J Shoulder Elbow Surg. 2011;20(4):531–8.
11. Petersen SA, Murphy TP. The timing of rotator cuff repair for the restoration of function. J Shoulder Elbow Surg. 2011;20(1):62–8.
12. Dawson J, Fitzpatrick R, Carr A. Questionnaire on the perceptions of patients about shoulder surgery. J Bone Joint Surg Br. 1996;78(4):593–600.
13. Constant CR, Murley AH. A clinical method of functional assessment of the shoulder. Clin Orthop Relat Res. 1987;(214):160–4.
14. Hawker GA, Mian S, Kendzerska T, French M. Measures of adult pain. Arthritis Care Res (Hoboken). 2011;63(Suppl 11):S240–52.
15. Tashjian RZ. Epidemiology, natural history, and indications for treatment of rotator cuff tears. Clin Sports Med. 2012;31(4):589–604.
16. Keener JD, Galatz LM, Teefey SA, Middleton WD, Steger-May K, Stobbs G, et al. A prospective evaluation of survivorship of asymptomatic degenerative rotator cuff tears. J Bone Joint Surg Am. 2015;97(2):89–98.
17. Oh LS, Wolf BR, Hall MP, Levy BA, Marx RG. Indications for rotator cuff repair: A systematic review. Clin Orthop Relat Res. 2007;455:52–63.
18. Moosmayer S, Lund G, Seljom US, Haldorsen B, Svege IC, Hennig T, et al. Tendon repair compared with physiotherapy in the treatment of rotator cuff tears: A randomized controlled study in 103 cases with a five-year follow-up. J Bone Joint Surg Am. 2014;96(18):1504–14.
19. DeOrio JK, Cofield RH. Results of a second attempt at surgical repair of a failed initial rotator-cuff repair. J Bone Joint Surg Am. 1984;66(4):563–7.
20. Bassett RW, Cofield RH. Acute tears of the rotator cuff. The timing of surgical repair. Clin Orthop Relat Res. 1983;(175):18–24.