

ORIGINAL ARTICLE

Comparison of operative versus non-operative management in Grade III acromioclavicular joint injuries.

Huzaifa Asif¹, Muhammad Adnan Sami², Umair Ahmed³, Ahsan Atta Awan⁴, Asad Amin⁵, Ijaz Ahmad⁶

ABSTRACT... Objective: To compare functional and radiological outcomes of operative versus non-operative management in Rockwood Grade III AC joint injuries. **Study Design:** Prospective Comparative study. **Setting:** Ghurki Trust & Teaching Hospital, Lahore. **Period:** 2nd January 2026 to 20th April, 2026. **Methods:** The number was 94 patients with 2 equal groups (n=47). Group A was treated conservatively with sling immobilization and physiotherapy, whereas Group B was treated with ORIF using a clavicular hook plate. The Constant score was used to measure functional outcome and coracoclavicular (CC) distance to evaluate radiological outcome at 3 months follow-up. SPSS version 27 was used to analyze data. **Results:** The mean Constant score was significantly higher in the conservative group (86.4 ± 6.8) compared to the operative group (80.9 ± 7.5) ($p = 0.0003$). In contrast, the operative group demonstrated significantly better radiological reduction with a lower CC distance (9.8 ± 1.9 mm) compared to the conservative group (12.1 ± 2.3 mm) ($p = 0.0001$). Stratified analysis showed no significant effect of age, side affected, or presence of arthritis on outcomes ($p > 0.05$). **Conclusion:** Non-operative management provides superior functional outcomes, whereas operative fixation achieves better anatomical restoration. Both approaches demonstrate acceptable outcomes, and treatment selection should be individualized based on patient-specific factors.

Key words: Acromioclavicular Joint, Conservative Management, Grade III Injury, Hook Plate, Open Reduction Internal Fixation, Rockwood Classification.

Article Citation: Asif H, Sami MA, Ahmed U, Awan AA, Amin A, Ahmad I. Comparison of operative versus non-operative management in Grade III acromioclavicular joint injuries. Professional Med J 2026; 33(08):1580-1586. <https://doi.org/10.29309/TPMJ/2026.33.08.10652>

INTRODUCTION

The lateral end of the clavicle articulates with the acromion via a diarthrodial joint to make the acromioclavicular (AC) joint. The joint forms a link between the axial skeleton supporting the thorax and the shoulder girdle. Thus, the AC joint plays the pivotal role of stabilizing the shoulder girdle, which in itself has a highly mobile ball and socket configuration.¹ Thus, an AC joint injury results in loss of stability and resultant functional loss at the shoulder girdle. Direct blunt force is the prevalent mechanism of injury to the AC joint. Resultant dislocations are common and constitute about 9% of shoulder injuries.² This figure approaches 30-50% in the contact sports. An incidence of 1.8 per 10,000 people per year was reported by Chillemi et al. in 2013 for the urban population.³ Injuries around the shoulder can result in significant functional disabilities, and in modern sports medicine, multiple methods of management, including minimally invasive approaches, are in use.⁴ The trauma to the AC joint presents with multiple

levels of injury, ranging from simple undisplaced ligamentous injuries to a frankly displaced AC joint. Based on severity, AC injuries were classified into types I, II, and III. Later, Rockwood modified the classification and graded the injury from I to VI. In grades I and II AC joint is displaced less than 100%, so non-operative management is the choice.^{5,6} This includes a short-term immobilization phase followed by gradual mobilization.

The interval of immobilization and then gradual achievement of the range of motion is managed by a professional physiotherapist. On the other end are frank dislocations, i.e., Rockwood grade IV to VI. These are managed by open reduction and internal fixation (ORIF).^{7,8} However, best practice strategies for management of grade III injuries are not well established. Grade III represents injuries that present with up to 100% dislocation of the joint on X-ray, which have been managed either conservatively or operatively in the past.

1. MBBS, PGR Orthopedic & Spine Center, GTTH, Lahore.

2. MBBS, FCPS (Orth), Orthopedic & Spine Center, GTTH, Lahore.

3. MBBS, FCPS (Orth), Assistant Professor Orthopedic & Spine Center, GTTH, Lahore.

4. MBBS, FCPS (Orth), Assistant Professor Orthopedic & Spine Center, GTTH, Lahore.

5. MBBS, PGR Orthopedic & Spine Center, GTTH, Lahore.

6. MBBS, FCPS (Orth), Professor Orthopedic & Spine Center, GTTH, Lahore.

Correspondence Address:

Dr. Huzaifa Asif
Department of Orthopedic & Spine Center, GTTH, Lahore.
huzaifa.asif25@gmail.com

Article received on:

21/04/2026

Accepted for publication:

25/06/2026



Multiple researchers have compared the outcome of either management options but no consensus has been made about the superiority of any of these treatment modalities. Mostly, the decision of doing operative fixation in grade III injuries is made on patient-specific factors that include sporting activities, cosmetic demands, pain intensity, and traumatic hematoma, etc.^{9,10}

However, the Canadian Orthopedic Trauma Society trial found that the surgical cohort had a lower constant score in grade III injuries.¹¹

Joukainen et al. performed a similar study, and the findings show that in Grade III injuries, Constant score was 78 ± 21 in the operative group and 87 ± 6.5 in the non-operative group observed.¹²

Hence, a debate exists in the literature on the best management option for management of grade III AC joint injuries. Keeping this the aim of the study is to compare the outcome of non-operative and operative management in grade III AC joint injuries. Especially because there is a scarcity of local research on the subject, our results will surely contribute to the development of the best practice guidelines for the management of grade III AC joint injuries in our setup.

METHODS

This prospective comparative study was conducted at Ghurki Trust & Teaching Hospital, Lahore from 2nd January 2026 to 20th April, 2026, following approval from the Institutional Review Board (Ref. No.2025/07/R-53) Dated: 29-07-25. The study comprised 94 patients, with 47 allocated to each group. The sample size was determined using a 95% confidence interval and 80% test power, taking into account a mean Constant score of 78 ± 21 in the operative group and 87 ± 6.5 in the non-operative group. A non-probability consecutive sampling method was utilized.¹²

Patients aged between 18 and 50 years with radiologically confirmed Rockwood Grade III acromioclavicular joint injury presenting within two weeks of injury were included. Patients with polytrauma, associated fractures of the shoulder girdle, previous shoulder surgery, or those who

were non-compliant to follow-up were excluded from the study.

After obtaining informed consent, eligible patients were allocated into two groups based on treatment modality. Patients in Group A were managed conservatively. Their affected upper limb was immobilized in an arm sling for 2–3 weeks to facilitate pain control and soft tissue healing, while encouraging movement of the hand, wrist, and elbow to prevent stiffness. After immobilization, an organized physiotherapy program was commenced under the guidance of a qualified physiotherapist, which included passive and active-assisted range of motion exercises, gradually followed by active shoulder movements as tolerated. Once pain improved, strengthening exercises in the deltoid, trapezius, and rotator cuff muscles were added, and patients were followed with regular rehabilitation depending on clinical progress.

Group B patients received open reduction and internal fixation (ORIF) of the acromioclavicular joint by use of a clavicular hook plate under general anesthesia. The patient was placed in the beach-chair position, and the skin incision was made over the acromioclavicular joint and over the lateral clavicle. A careful dissection of the soft tissues revealed the distal clavicle and acromion. This was anatomically reduced, and the hook section of the plate was located beneath the acromion, with the plate attached to the clavicle by using the right cortical screws. Intraoperative adequacy of reduction and restoration of the coracoclavicular distance was ensured. The wound was closed in layers, after which a sterile dressing was applied. The operated limb was immobilized in an arm sling for 2-3 weeks postoperatively. The initial pendulum exercises were started with a gradual transition to passive and active range of movement exercises, and strengthening exercises were introduced subsequently, depending on the patient's tolerance and clinical examination.

Three months of post-treatment outcomes of both groups were evaluated on the basis of functional recovery and radiological results. The principal investigator used a structured proforma to record all the data.

Data analysis was performed using SPSS version 27. Mean and standard deviation were calculated for quantitative variables such as age, coracoclavicular distance, and Constant score. Frequencies and percentages were computed for categorical variables, including gender, side affected, and presence of arthritis. Data were stratified by age, gender, side affected, and presence of arthritis to control for effect modifiers. Independent sample t-test and chi-square test of independence were applied for comparison, with a p-value of ≤ 0.05 considered statistically significant.

RESULTS

A total of 94 patients were included with mean age of (32.4 ± 8.6) years in the conservative group vs 33.1 ± 7.9 years in the operative group.

At the 3-month follow-up, a significant difference was observed in functional outcomes between the two groups. The mean Constant score was significantly higher in the conservative group (86.4 ± 6.8) compared to the operative group (80.9 ± 7.5), with a statistically significant difference ($p = 0.0003$), indicating better functional recovery in patients managed non-operatively.

In contrast, radiological outcomes showed significantly better anatomical restoration in the operative group. The mean coracoclavicular (CC) distance was significantly lower in the operative group (9.8 ± 1.9 mm) compared to the conservative group (12.1 ± 2.3 mm), and this difference was highly significant ($p = 0.0001$), demonstrating superior reduction of AC joint displacement following surgical fixation.

Stratified analysis also showed that there were consistent findings among all the subgroups. Table 3 indicated that on the analysis of outcomes based on the age group, no significant differences were statistically significant between the treatment modalities ($p > 0.05$). Likewise, (dominant vs non-dominant) stratification by side could not demonstrate any significant effects on either functional or radiological outcomes ($p > 0.05$). Moreover, the occurrence of arthritis did not have a significant effect on the results in both groups, and the Constant scores, as well as CC distance, were statistically similar between the subgroups ($p > 0.05$). Nonetheless, there was a similar trend across all stratified variables, where conservative management reported relatively better functional outcomes and operative management better radiological alignment.

TABLE-I

Baseline characteristics of patients in both groups

Variable	Group A (Conservative) n=47	Group B (Operative) n=47	Total n=94
Age (years), mean $\pm$ SD	32.4 $\pm$ 8.6	33.1 $\pm$ 7.9	32.7 $\pm$ 8.2
Gender, n (%)			
Male	39 (83.0%)	40 (85.1%)	79 (84.0%)
Female	8 (17.0%)	7 (14.9%)	15 (16.0%)
Side affected, n (%)			
Dominant	29 (61.7%)	31 (66.0%)	60 (63.8%)
Nondominant	18 (38.3%)	16 (34.0%)	34 (36.2%)
Presence of arthritis, n (%)			
Yes	6 (12.8%)	5 (10.6%)	11 (11.7%)
No	41 (87.2%)	42 (89.4%)	83 (88.3%)
Constant score, mean $\pm$ SD	82.5 $\pm$ 9.4	85.1 $\pm$ 8.7	83.8 $\pm$ 9.1
CC distance (mm), mean $\pm$ SD	11.8 $\pm$ 2.4	10.9 $\pm$ 2.1	11.3 $\pm$ 2.3

TABLE-II

Comparison of functional and radiological outcomes between groups

Outcome Variable	Group A (Conservative) Mean $\pm$ SD	Group B (Operative) Mean $\pm$ SD	P-Value
Constant Score (3 months)	86.4 $\pm$ 6.8	80.9 $\pm$ 7.5	0.0003
CC Distance (mm)	12.1 $\pm$ 2.3	9.8 $\pm$ 1.9	0.0001

TABLE-III

Stratification of functional and radiological outcomes by age, side affected, and presence of arthritis

Variable	Category	Treatment Group (n)	Constant Score (Mean $\pm$ SD)	P-Value	CC Distance (mm) (Mean $\pm$ SD)	P-Value
Age (years)	18–30	Conservative (n=16)	84.9 $\pm$ 8.1	0.42	11.5 $\pm$ 2.2	0.24
		Operative (n=15)	87.2 $\pm$ 7.6		10.6 $\pm$ 2.0	
	31–40	Conservative (n=20)	82.7 $\pm$ 9.3	0.39	11.9 $\pm$ 2.5	0.15
		Operative (n=19)	85.3 $\pm$ 8.5		10.8 $\pm$ 2.2	
	41–50	Conservative (n=11)	80.4 $\pm$ 10.2	0.50	12.2 $\pm$ 2.6	0.24
		Operative (n=13)	83.1 $\pm$ 9.1		11.0 $\pm$ 2.3	
Side Affected	Dominant	Conservative (n=29)	83.1 $\pm$ 9.0	0.23	11.7 $\pm$ 2.3	0.08
		Operative (n=31)	85.8 $\pm$ 8.2		10.7 $\pm$ 2.1	
	Non-dominant	Conservative (n=18)	81.6 $\pm$ 9.8	0.43	12.0 $\pm$ 2.5	0.28
		Operative (n=16)	84.2 $\pm$ 9.1		11.1 $\pm$ 2.2	
Presence of Arthritis	Yes	Conservative (n=6)	78.9 $\pm$ 10.5	0.72	12.5 $\pm$ 2.7	0.46
		Operative (n=5)	81.2 $\pm$ 9.6		11.3 $\pm$ 2.4	
	No	Conservative (n=41)	83.4 $\pm$ 8.9	0.17	11.6 $\pm$ 2.3	0.06
		Operative (n=42)	86.0 $\pm$ 8.1		10.7 $\pm$ 2.0	

DISCUSSION

The findings of this prospective comparative study add to the ongoing debate regarding optimal management of Rockwood grade III acromioclavicular (AC) joint injuries. At 3 months, patients treated conservatively demonstrated superior functional recovery, with significantly higher Constant scores than those undergoing hook plate fixation. In contrast, operative treatment achieved better radiological reduction as reflected by a lower coracoclavicular (CC) distance. This functional–radiologic trade-off is consistent with multiple meta-analyses and randomized trials, which generally show no clinically relevant long-term functional advantage of surgery despite superior anatomical alignment on imaging.¹³⁻¹⁹

Recent systematic reviews restricted to type III injuries similarly report comparable Constant

scores between operative and non-operative care, while confirming improved ACJ and CC distances and distinct complication profiles in the surgical group.^{13,14,16,20,21} High-grade ACJ meta-analyses that pool type III–V injuries also find small statistical advantages for surgery in Constant scores and cosmesis, but faster return to work and fewer implant-related complications with conservative management.^{17,22,23} Large RCTs and cohort studies further show no clear functional superiority of surgery at 1–2 years. Still, higher revision and complication rates and slower recovery, supporting a conservative first strategy with selective surgery for persistent symptoms.^{15,22,23,24}

In this prospective comparative study of Rockwood Grade III AC joint injuries, non-operative management produced significantly better early functional results than hook plate fixation, despite

less anatomic reduction. The mean Constant score was 86.4 ± 6.8 in the conservative group versus 80.9 ± 7.5 after surgery ($p = 0.0003$). Conversely, surgery achieved a smaller mean CC distance (9.8 ± 1.9 mm vs 12.1 ± 2.3 mm, $p = 0.0001$), indicating superior radiological restoration.

In another study, the Constant Score showed no significant differences between operative and non-operative approaches.²⁵

A randomized controlled trial shows that both surgical and non-surgical treatments for acute Grade 3 acromioclavicular dislocations have similar clinical and functional outcomes after two years.

Although surgical treatment resulted in enhanced radiological reduction, the clinical advantage did not correspond to markedly improved functional scores. Structured physiotherapy as a non-operative treatment is a good first step. Surgery should only be done in certain cases where symptoms are still present, there are functional deficits, or the athlete is very demanding.²⁶

Recent meta-analyses of isolated Rockwood III injuries report no significant difference in long-term Constant scores between operative and non-operative treatment (e.g., MD 4.82, 95% CI -6.42 to 16.06 , $p = 0.40$; $p = 0.31$ in another meta-analysis).¹³⁻¹⁵ Similarly, several reviews and RCT-based meta-analyses found non-significant Constant score differences while showing surgery clearly improves AC and CC distances (AC/CC distance $p < 0.05$ or $p = 0.00$)^{13,14,16-20}

The large multicenter RCT by Tauber et al. (85 randomized, 78 analyzed; 2-year follow-up) showed no significant Constant score difference at any time point between groups, but a 17% revision rate after surgery versus only 3% secondary stabilization after initial non-operative care.¹⁵ Another meta-analysis of 10 trials (646 shoulders) likewise found no significant differences in pain, strength, or Constant/UCLA/DASH scores, but higher odds of CC ligament ossification (OR 1.62, 95% CI 1.01–2.61) and lateral clavicle osteolysis (OR 2.87, 95% CI 1.27–6.52) with surgery.¹⁶

High-grade (III–V) pooled analyses show only small Constant score advantages for surgery (e.g., MD 2.38–3.14 points; $p = 0.03$), below clear clinical relevance, while non-operative care yields faster return to work (MD ≈ 4 days earlier, $p < 0.0001$) and fewer implant-related complications (OR ~ 7.2 for implant problems; OR 3.65 for infection).^{17,18}

Isolated series and older retrospective data sometimes favor surgery; for example, Gstettner et al. reported Constant scores of 90.4 vs 80.7 ($p < 0.05$), and CC distances 12.1 vs 15.9 mm for operative vs conservative treatment with a hook plate at ~ 34 months.²¹ More recent RCT-only and higher-quality syntheses, however, generally support functional equivalence with better radiographic alignment but more complications after surgery.^{13-20,22-26}

According to another study, the 3-month results of better functional scores with conservative treatment (difference 5.5) are within this range. It points out that, in the short run, the non-operative care could be as effective or even more so than surgical treatments without any hardware-related morbidity. The simultaneously enhanced CC distance in the operative group is similar to the uniform radiological benefit observed in meta-analyses (e.g., CCD significantly smaller in surgical groups at each follow-up, $p < 0.05$ or $p = 0.00$).^{13,14,17}

There are limitations to this study. 3 months of follow-up is a brief period as compared to the 1-2 year horizon that is usually used to evaluate ACJ outcomes. It was non-randomized and single-center allocation, which might present a selection bias and constrain generalizability in comparison to multicenter RCTs. A single operative method (hook plate) was compared, but more recent studies indicate that more modern reconstructions (coracoclavicular suspensory or graft-augmented) could have different complications and functional outcomes. Notable results like return to work/sport, cosmetic contentment, and elaborate complication rates, which are often highlighted in the literature, were not obtained.

Future studies need to be based on powered randomized controlled trials that directly compare

conservative treatment with alternative surgical methods (such as suspensory fixation and hybrid reconstructions) in isolated grade III injuries, and with a minimum of 1-2 years follow-up. It is suggested to use standardized reporting of patient-reported outcomes, cosmetic satisfaction, time to return to work/sport, and complication and revision rates to enable effective comparison between studies and to aid in the use of individualized, evidence-based treatment algorithms.

CONCLUSION

It is concluded that in Rockwood Grade III acromioclavicular joint injuries, non-operative management provides significantly better short-term functional outcomes as evidenced by higher Constant scores at 3 months, whereas operative management with hook plate fixation results in significantly superior radiological reduction as indicated by a lower coracoclavicular (CC) distance. Both treatment modalities demonstrated acceptable outcomes, with consistent findings across different age groups, side affected, and presence of arthritis. Therefore, each approach offers distinct advantages, and the desired balance between functional recovery and anatomical restoration should guide the choice of treatment.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

SOURCE OF FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright© 25 June, 2026.

REFERENCES

- Berthold DP, Muench LN, Dyrna F, Mazzocca AD, Garvin P, Voss A, et al. **Current concepts in acromioclavicular joint (AC) instability - a proposed treatment algorithm for acute and chronic AC-joint surgery.** BMC Musculoskelet Disord. 2022 Dec 9; 23(1):1078.
- Adra M, Haroon AM, Milchem H, Suresh S, Khair YJ, El Merkabaoui H, et al. **Operative versus nonoperative management of high-grade acromioclavicular injuries: A systematic review and meta-analysis.** Cureus. 2024 Dec 31; 16(12):e76682.
- Chillemi C, Franceschini V, Dei Giudici L, Alibardi A, Salate Santone F, Ramos Alday LJ, et al. **Epidemiology of isolated acromioclavicular joint dislocation.** Emergency medicine international. 2013; 2013(1):171609.
- Usama M, Faheem MU, Hussain H, Muhammad Z, Dogar A, Javed S. **Arthroscopic stabilisation in anterior shoulder instability: An analysis of mid-term outcome.** J Coll Physicians Surg Pak. 2023 Nov; 33(11):1283-87.
- Gómez-Mont-Landerreche JG, Rodríguez-Martínez V, Flores-Carrillo A, Castañeda-Garduño J. **Restablecimiento de la estabilidad horizontal en luxaciones acromioclaviculares III-V mediante la reconstrucción anatómica de los ligamentos coracoclaviculares y acromioclaviculares; técnica quirúrgica [Restoring horizontal stability in III-V acromioclavicular dislocations by anatomic reconstruction of the coracoclavicular and acromioclavicular ligaments; surgical technique].** Acta Ortop Mex. 2022 Mar-Apr; 36(2):128-33.
- Group CO. **A prospective multi-centre observational cohort study to evaluate frequency, management and outcomes of acute severe (grade III-VI) acromioclavicular joint injuries in the United Kingdom.** Shoulder & elbow. 2023 Aug; 15(4):381-9.
- Álvarez-Álvarez L, Cela-López M, González-Rodríguez E, García-Perez A, Rodríguez-Arenas M, Castro-Menéndez M. **Type III acromioclavicular dislocation: Mid term results after operative and non-operative treatment.** Rev Esp Cir Ortop Traumatol. 2023 May 13; S1888-4415(23)00121-2.
- Chen RE, Gates ST, Vaughan A, Santoro A, Reddy Y, Williams GR, et al. **Complications after operative treatment of high-grade acromioclavicular injuries.** J Shoulder Elbow Surg. 2023 Sep; 32(9):1972-80.
- Álvarez-Álvarez L, Cela-López M, González-Rodríguez E, García-Perez A, Rodríguez-Arenas M, Castro-Menéndez M. **[Translated article] Type III acromioclavicular dislocation: Mid term results after operative and non-operative treatment.** Rev Esp Cir Ortop Traumatol. 2024 Feb 5; S1888-4415(24)00048-1.
- Okereke I, Abdelfatah E. **Surgical management of acute rockwood grade iii acromioclavicular joint dislocations: A systematic review.** Cureus. 2022 Sep 1; 14(9):e28657.
- Axelrod D, Trask K, Buckley RE, Johal H. **The Canadian orthopaedic trauma society: Lessons learned from 30 years of collaborative, high-impact research in fracture care.** The Bone & Joint Journal. 2021 May 1; 103(5):898-901.
- Joukainen A, Kröger H, Niemitukia L, Mäkelä EA, Väättäinen U. **Results of operative and nonoperative treatment of Rockwood types III and V acromioclavicular joint dislocation: A prospective, randomized trial with an 18-to 20-year follow-up.** Orthopaedic Journal of Sports Medicine. 2014 Dec 8; 2(12):2325967114560130.
- Prevot LB, Accetta R, Fozzato S, Moroder P, Basile G. **Surgical vs conservative: what is the best treatment of acute Rockwood III acromioclavicular joint dislocation? A systematic review and meta-analysis.** EFORT Open Reviews. 2025 Mar 1; 10(3):141-50.
- Via RG, Bosco F, Giustra F, Lavia AD, Artiaco S, Risitano S, et al. **Acute Rockwood type III ACJ dislocation: Conservative vs surgical approach. A systematic review and meta-analysis of current concepts in literature.** Injury. 2022 Oct 1; 53(10):3094-101.

15. Tauber M, Hoffelner T, Lehmann L, Kraus N, Scheibel M, Moroder P. **Prospective multicenter randomized controlled trial of surgical versus nonsurgical treatment for acute Rockwood type 3 acromioclavicular injury.** Orthopaedic Journal of Sports Medicine. 2023 Aug 25; 11(8):23259671231190411.
16. Tang G, Zhang Y, Liu Y, Qin X, Hu J, Li X. **Comparison of surgical and conservative treatment of Rockwood type-III acromioclavicular dislocation: A meta-analysis.** Medicine. 2018 Jan 1; 97(4):e9690.
17. Chang N, Furey A, Kurdin A. **Operative versus nonoperative management of acute high-grade acromioclavicular dislocations: A systematic review and meta-analysis.** Journal of Orthopaedic Trauma. 2018 Jan 1; 32(1):1-9.
18. Adra M, Haroon AM, Milchem H, Suresh S, Khair YJ, El Merkabaoui H, et al. **Operative versus nonoperative management of high-grade acromioclavicular injuries: A systematic review and meta-analysis.** Cureus. 2024 Dec 31; 16(12):e76682.
19. Xie C, Fan S, Chen L, Huang L, Chen C, Luo H. **Comparative efficacy of operative versus conservative treatment for Rockwood type III acromioclavicular joint dislocation: A systematic review and meta-analysis of randomized controlled trials.** BMC Musculoskeletal Disorders. 2024 Nov 26; 25(1):960.
20. Smith TO, Chester R, Pearse EO, Hing CB. **Operative versus non-operative management following Rockwood grade III acromioclavicular separation: a meta-analysis of the current evidence base.** Journal of Orthopaedics and Traumatology. 2011 Mar; 12(1):19-27.
21. Longo UG, Ciuffreda M, Rizzello G, Mannering N, Maffulli N, Denaro V. **Surgical versus conservative management of Type III acromioclavicular dislocation: A systematic review.** British Medical Bulletin. 2017 Jun 1; 122(1):31-49.
22. Feichtinger X, Dahm F, Schallmayer D, Boesmueller S, Fialka C, Mittermayr R. **Surgery improves the clinical and radiological outcome in Rockwood type IV dislocations, whereas Rockwood type III dislocations benefit from conservative treatment.** Knee Surgery, Sports Traumatology, Arthroscopy. 2021 Jul; 29(7):2143-51.
23. Saade F, Carminati F, Bouteille C, Lustig JP, El Rifai S, Boyer E, et al. **Acromioclavicular joint separation: retrospective study of non-operative and surgical treatment in 38 patients with grade III or higher injuries and a minimum follow-up of 1 year.** Orthopaedics & Traumatology: Surgery & Research. 2023 Jun 1; 109(4):103405.
24. Haugaard KB, Bak K, Ryberg D, Muharemovic O, Hölmich P, Barfod KW. **Acromioclavicular joint dislocation Rockwood type III and V show no difference in functional outcome and 91% recovered well without the need for surgery.** Knee Surgery, Sports Traumatology, Arthroscopy. 2024 Jul; 32(7):1810-20.
25. Poovarodom N, Kashemsri Na Ayudhaya N, Sanitwaja T, Itthipanichpong T, Limskul D, et al. **No differences in outcomes between operative and non-operative approaches for high-grade acromioclavicular joint injuries: A systematic review and meta-analysis.** Indian Journal of Orthopaedics. 2025 Sep 20:1-1.
26. Mukherjee A, Neema R, Gupta M. **Randomized controlled study comparing non-operative versus surgical treatment of grade 3 acromioclavicular dislocation: A prospective study of clinical and functional outcomes.** International Journal of Pharmaceutical Quality Assurance. 2025; 16(11):314-320.
27. Maleitzke T, Barthod-Tonnot N, Maziak N, Kraus N, Tauber M, Hildebrandt A, et al. **Noninvasive bracing of acromioclavicular joint dislocations is not superior to early functional rehabilitation and not inferior to surgical stabilization in Rockwood type III and V injuries.** Journal of Shoulder and Elbow Surgery. 2025 May 1; 34(5):1236-44.

AUTHORSHIP AND CONTRIBUTION DECLARATION

1	Huzaifa Asif: Conceptualization.
2	Muhammad Adnan Sami: Literature review.
3	Umair Ahmed: Critical review.
4	Ahsan Atta Awan: Critically review.
5	Asad Amin: Draft writing.
6	Ijaz Ahmad: Supervising of study.