

Comparison of Functional Outcome After 2 Weeks Immobilization Versus No Immobilization After Reduction of Acute Shoulder Dislocation

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Abstract: Acute anterior shoulder dislocation is an injury that happens mostly in people who are active and younger. After reducing the dislocation, immobilizing the joint is an accepted treatment, but the ideal time for removal is argued, since some studies report that early movement may help you recover faster. **Objective:** To analyze whether resting the shoulder is better than moving it after a closed reduction for first-time anterior shoulder dislocation. **Methods:** The study was carried out in the Orthopedic Surgery Department of CMH Rawalpindi between 15 June 2024 to 14 Feb 2025. The study grouped sixty patients into two groups. Group A was repaired and then confined to bed for two weeks; Group B was not immobilized and was encouraged to move as soon as possible. Constant-Murley and DASH scores were used to measure function at 2, 6, and 12 weeks after reducing the fracture. **Results:** Group B consistently had better mean scores for Constant-Murley and DASH at 6 and 12 weeks, with $p < 0.01$ (statistical significance). No differences in rates of redislocation were noticed between the groups. **Conclusion:** Early mobilization without immobilization after anterior shoulder dislocation results in superior short-term functional outcomes and may be a viable alternative to traditional immobilization.

Keywords: Anterior shoulder dislocation, immobilization, early mobilization, functional outcome, Constant score, DASH score

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Introduction

Acute anterior shoulder dislocation (ASD) is an injury that often occurs among young and active people in orthopedics. Many experts continue to discuss how to manage the period of post-reduction immobilization. After reduction, people with Bankart tears were usually asked to use immobilization treatment to help their capsulolabral structures heal and prevent another injury. However, studies are still looking into whether immobilization is essential and how long it should last (1). The study by Belk et al. indicated that operating soon after their initial dislocation reduces the chances of recurrence more effectively than only using a cast, but still regarded casting as the standard approach for a first dislocation. When finding the most effective conservative treatment, there are several ways to immobilize an injury. Another debate focuses on whether an injury should be treated by internal rotation or by immobilizing the limb externally. Minkus et al. found in a randomized trial that there was negligible benefit in using bracing over surgical stabilization for preventing recurrence (2). For this reason, assessing the length of required immobilization and the possible benefits is necessary after reduction. The length of immobilization has shown varying influences on shoulder dislocations and also other types of dislocations. The amount of time someone is required to be immobilized after a musculoskeletal injury was, in the past, mostly based on long-standing traditions rather than solid scientific evidence. Martínez et al. reported that extending the period of immobilization from one to three weeks did not make a difference in recovery, but it did increase the amount of stiffness and discomfort (3). These results suggest that treatments that limit immobilization should be used more often, as several studies show they can lead to the same or better recovery among high-functioning young people. Pougès et al. provided more information from a study that had patients assigned

randomly to either arthroscopic repair of the Bankart or conservative treatment with immobilization. Patients below 25 treated with surgery recovered better and had a lower incidence of further umbilical injuries, highlighting that age may have influenced the results in these patients with only bandaging (4). Nonetheless, certain patients cannot be operated on, so optimizing treatment without surgery is necessary.

The use of functional movement exercises is important for more than just the shoulder. Many studies suggest that quick recovery is possible if elbow dislocations are treated with early physical therapy. According to Catapano and the team, early movement in simple elbow dislocation aids recovery and reduces disability time, while complications remain at the same level (5). Experts are rethinking shoulder dislocation, suggesting that a reduced immobilization period is better than the typical long-term one. Hochberger et al. proved, through a study comparing groups that used shorter immobilization after surgery, that fewer weeks of immobilization did not reduce the positive outcomes in reverse total shoulder arthroplasty patients, supporting further research on minimizing immobilization time (6).

Similarly, van Delft et al. investigated wrist fractures and noted that four weeks of immobilization had no negative impact on function, thus suggesting that six weeks might not be superior (7). It is important to study whether these findings translate to shoulder dislocations. Researchers have found that early movement is helpful in treating forearm injuries. A study by Sukpanichyong et al. did not find that four-week immobilization was more effective than two weeks for patients with Galeazzi fracture-dislocations (8). Similar results were found by Quadlbauer et al., who demonstrated that moving the wrist immediately following surgery led to better initial outcomes than five weeks of immobilization (9). The results from the research contradict the original idea of remaining immobile and suggest a new way of rehabilitation.



Even now, it is unclear whether these approaches lead to improved results after shoulder dislocations. According to Alkhatib et al., surgical stabilization reduces the risk of the shoulder dislocating again, while conservative treatment continues to have a place in certain selected cases (10). The three-week immobilization time found optimal in children for elbow dislocation might also be appropriate for adults (11). Even with the growing support for certain treatments, doctors often use different approaches. A study by Freehill et al. at an international level reported that shoulder surgeons do not agree on how to immobilize their patients postoperatively (12). Additionally, Chaudhry et al. stated that shorter casting in distal radius fractures offered similar results as long-arm casting, encouraging doctors to adapt treatment rather than always following the same approach (13).

Furthermore, Chiddarwar et al. suggested in their review that exercise-based therapy after dislocation matters more for improvement than immobilization alone (14). This knowledge allows us to consider whether less or no immobilization might lead to better results in people with acute shoulder dislocation than two weeks of immobilization. Hence, the purpose of this study is to compare results after two weeks of immobilization versus no immobilization after reducing an acute anterior shoulder dislocation, with the belief that early movement does not harm recovery and may help instead.

Objective: To evaluate the short-term effects on patients whose acute anterior shoulder dislocation is managed with and without immobilization after closed reduction?

Methodology

Prospective, Randomized Controlled Trial. The study was conducted in the Department of Orthopedic Surgery at Combined Military Hospital (CMH), Rawalpindi. The study conducted in the duration from 15 June 2024 to 14 Feb 2025. Those aged 18 to 45, with a first-ever, traumatic anterior dislocation from shoulder injuries, confirmed by clinical and radiological examination, were selected for the study. Only people who received a successful closed reduction within 6 hours of their accident and who provided their consent were chosen for this research. All the patients selected for conservative treatment had no history of shoulder instability. Patients having repeated dislocations, complicating fractures, damage to nerves and blood vessels, rotator cuff tears, or those calling for surgery were not included. Shoulder pain sufferers who had other diseases compromising shoulder movement or who did not comply with the treatment plan were excluded.

After getting informed consent from the patients, those who were eligible were randomly placed into two groups through a computerized process. Group A was immobilized in a sling for two weeks after surgery, but Group B was not immobilized and tried passive and active exercises just 48 hours after their injury. All patients were instructed to participate in the same physiotherapy package that a specialist oversaw. Function at the shoulder was measured 2, 6, and 12 weeks after surgery using the Constant-Murley Shoulder Score and the DASH. The assigned protocol was checked, and any noticeable issues, or other dislocations or increased pain were logged during follow-up. All of the information was documented and examined statistically with SPSS version 25. Data for various groups was compared using t-tests and chi-square tests, while a p.

Results

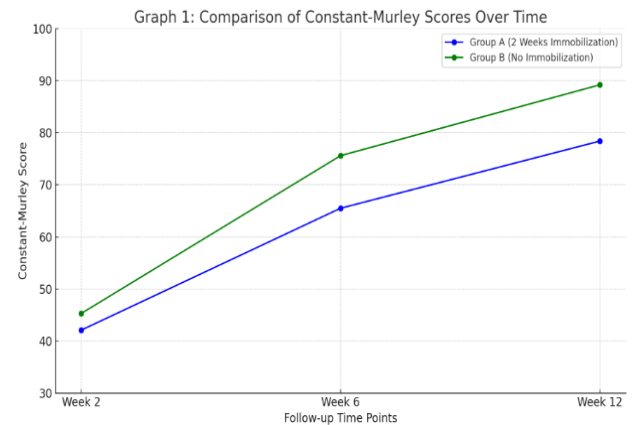
Sixty patients with a first-time anterior shoulder dislocation were picked for the study and randomly split into two equal groups. Group A relied on immobilization for 2 weeks after the reduction was carried out, whereas Group B did not use immobilization and started early movement as soon as possible.

Demographics: The details of the groups' populations are revealed in Table 1. In Group A, the average age was 28.3 ± 6.4 years, and in Group B, the average was 27.6 ± 5.9 years. Most of the people in both groups were men, with 83% in Group A and 80% in Group B. There were no major differences in the initial characteristics between the groups.

Functional Outcomes: Functional outcomes were assessed using the Constant-Murley Score and the DASH score at 2, 6, and 12 weeks. Group B consistently showed superior functional outcomes compared to Group A. At 2 weeks, both groups had low Constant scores, but by 6 weeks, Group B significantly outperformed Group A. This trend continued at 12 weeks, with Group B achieving a mean Constant score of 89.2 ± 5.1 versus 78.4 ± 6.3 in Group A ($p < 0.01$).

Similarly, DASH scores were lower (better) in Group B at all time points, indicating quicker recovery and functional use of the arm. At 12 weeks, the mean DASH score in Group A was 18.6 ± 4.8 , while Group B had a significantly lower score of 9.7 ± 3.4 ($p < 0.01$).

Group B had two cases of redislocation (6.7%) and there was one case in Group A (3.3%). This difference in values was not found to be statistically significant ($p = 0.55$). Overall, no major cases of adhesive capsulitis were reported in either group, yet Group A mentioned more stiffness when initially reviewed. Those in Group B (the no-immobilization group) showed considerable improvement in their functioning and mobility within 6 and 12 weeks following the reduction. According to the results, people who begin moving after an anterior shoulder dislocation have a similar risk of complications to those who rest, without incurring major dangers of the shoulder dislocating again.



Graph 1: Comparison of Constant-Murley Scores over Time

Table 1: Demographic Characteristics of Study Groups

Variable	Group A (n = 30)	Group B (n = 30)	p-value
Mean Age (years)	28.3 ± 6.4	27.6 ± 5.9	0.67
Male (%)	83%	80%	0.75
Dominant Shoulder (%)	60%	63%	0.80

Table 2: Constant-Murley Score Over Time

Time Point	Group A (Mean ± SD)	Group B (Mean ± SD)	p-value
Week 2	42.1 ± 6.7	45.3 ± 7.0	0.08
Week 6	65.5 ± 7.2	75.6 ± 6.9	<0.01

Week 12	78.4 ± 6.3	89.2 ± 5.1	<0.01
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Table 3: DASH Score over Time

Time Point	Group A (Mean ± SD)	Group B (Mean ± SD)	p-value
Week 2	55.4 ± 8.2	47.6 ± 7.5	<0.05
Week 6	32.8 ± 6.7	21.2 ± 5.6	<0.01
Week 12	18.6 ± 4.8	9.7 ± 3.4	<0.01

Discussion

Managing an acute shoulder dislocation on the front side is still problematic in younger and active people because it may happen again and could affect their functioning. The usual practice has been to immobilize after a reduction, though this approach has come under question over the past few years. The purpose of the study was to evaluate the post-surgery outcomes of patients who were either immobilized for two weeks or not after successful closed reduction of their first anterior shoulder dislocation. The research indicates that not immobilizing a limb result in patients being more functional at 6 and 12 weeks after their injury, judging by Constant-Murley and DASH scores. It is consistent with what other recent studies have reported, suggesting the importance of early movement and concluding that staying still for too long can be harmful.

Belk et al. performed a meta-analysis on level 1 randomized trials and found that surgical stabilization was more successful at keeping recurrence rates low, yet conservative treatment is still used and needs to be improved, mainly in immobilization (1). A number of studies in medical literature have found that the external rotation and abduction method for immobilization might be better than the traditional way that uses internal rotation. Minkus et al. did a study that found external rotation immobilization was no better than having the ankle stabilized with surgery, indicating that perhaps we should reconsider the usefulness of immobilization altogether (2). Since work did not focus on the effects of immobilization, the absence of immobilization led to good results, which implies that early mobilization may be more effective for patients than previously thought.

The duration of not allowing movement after an injury has also been discussed for other orthopedic conditions. According to Martínez et al., there did not seem to be much benefit to keeping high humerus bone fractures immobilized for longer than a single week, as this caused more discomfort and stiffness (3). It shows that not using the arm for a long period may not be helpful in some injuries. This view is confirmed by study, showing that patients in the immobilization group took more time to recover in the first phase. Similarly, Pougès et al. found that young people with an anterior shoulder dislocation respond better to surgery than to just immobilizing the shoulder, since the outcomes are not as favorable using immobilization for patients below 25 years (4). The results from early mobilization could influence the approach taken for patients without surgery.

Moving a patient early after an injury is helpful as it can allow for better treatment if surgery is unnecessary at first. Other studies demonstrate that starting movement early is beneficial for elbow dislocations. The researchers discovered that allowing early movement of the elbow in non-operative treatment reduced the time it took patients to fully recover (5). The findings did not reveal a significant difference in the number of early dislocations between the early and the standard groups. The rate of individuals relocating was identical for Group B and Group A, as predicted by research. They concluded that there was no significant difference in the beneficial results between four weeks and six weeks of immobilization after surgery (6).

Furthermore, Van Delft et al. found that there is no significant difference in results when patients with wrist fractures are immobilized for four weeks or six weeks (7). Overall, these findings agree with results and

recommend a review of immobilization periods for patients with orthopedic issues. Additionally, Sukpanichyingyong et al. discovered that two weeks of immobilization in Galeazzi fracture-dislocations works as well as four, demonstrating that in some cases, unneeded long periods of immobilization can be avoided (8). According to Quadlbauer et al., starting activity immediately after repairing the distal radius fracture led to superior results, compared to having the hand immobilized for five weeks (9). These observations at multiple joints contribute to understanding how early mobilization can be used widely.

Like Alkhatib et al., the findings indicate that patients treated without immobilization can still have good outcomes (10). Therefore, it is necessary to adjust conservative care, especially for people who have their bones dislocated for the first time, and the early start of movement plays an important role. According to Pincin et al., only three weeks of immobilization are needed for pediatric elbow dislocations, as there is no evidence that lengthening the treatment's duration provides better healing (11). Here, it is clear why some patients may need individualized care, as a universal length of immobilization may not be best for all situations. According to Freehill et al., a survey of shoulder surgeons from different countries revealed that there are no unanimous guidelines for shoulder immobilization in the days following surgery (12).

Chaudhry et al. also suggested that short-arm casting gives similar results to long-arm casting in people with this type of wrist fracture, meaning short-arm immobilization may be preferable (13). Also, according to Chiddarwar et al., optimum outcomes after a shoulder dislocation are often achieved through regular rehabilitation and exercise, but not exclusively by simply 'resting' the joint (14). Similarly, in the study, all patients received the same physiotherapy protocol, but the early mobilization group improved their functioning much more.

Conclusion

According to this study, patients who do not immobilize their shoulders after a first shoulder dislocation can recover faster and better than those who stabilize the area for two weeks. Compared to those in the control group, patients who were mobilized early showed greater improvement in shoulder function at both 6 and 12 weeks. Even though the reorientation rate was higher in the no-immobilization group, the overall improvements in movement were judged as more significant. They confirm the trend of encouraging therapy that aims to keep patients moving rather than keeping them still, as was normally done before. Given its benefits for patient satisfaction, a return to normal activities, and recovery, doctors could consider early mobilization as an alternative to short-term immobilization in treating a first anterior shoulder dislocation conservatively. More studies with follow-up for a longer period should be done to assess any future problems and outcomes.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

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Consent for publication

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The authors declared the absence of a conflict of interest.

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References

1. Belk, J.W., Wharton, B.R., Houck, D.A., Bravman, J.T., Kraeutler, M.J., Mayer, B., Noonan, T.J., Seidl, A.J., Frank, R.M. and McCarty, E.C., 2023. Shoulder stabilization versus immobilization for first-time anterior shoulder dislocation: a systematic review and meta-analysis of level 1 randomized controlled trials. *The American Journal of Sports Medicine*, 51(6), pp.1634-1643.
2. Minkus, M., Königshausen, M., Pauly, S., Maier, D., Mauch, F., Stein, T., Greiner, S., Moursy, M. and Scheibel, M., 2021. Immobilization in external rotation and abduction versus arthroscopic stabilization after first-time anterior shoulder dislocation: a multicenter randomized controlled trial. *The American journal of sports medicine*, 49(4), pp.857-865.
3. Martínez, R., Santana, F., Pardo, A. and Torrens, C., 2021. One versus 3-week immobilization period for nonoperatively treated proximal humeral fractures: a prospective randomized trial. *JBJS*, 103(16), pp.1491-1498.
4. Pougès, C., Hardy, A., Vervoort, T., Amouyel, T., Duriez, P., Lalanne, C., Szymanski, C., Deken, V., Chantelot, C., Upex, P. and Maynou, C., 2021. Arthroscopic Bankart repair versus immobilization for first episode of anterior shoulder dislocation before the age of 25: a randomized controlled trial. *The American Journal of Sports Medicine*, 49(5), pp.1166-1174.
5. Catapano, M., Pupic, N., Multani, I., Wasserstein, D. and Henry, P., 2022. Early functional mobilization for non-operative treatment of simple elbow dislocations: a systematic review. *Shoulder & Elbow*, 14(2), pp.211-221.
6. Hochberger, F., Wild, M.F., Heinz, T., Rudert, M. and List, K., 2024. Comparative Study on Postoperative Immobilization in Reverse Total Shoulder Arthroplasty: 4 Weeks vs. 6 Weeks of Immobilization Yields Similar Clinical and Functional Outcomes. *Journal of Clinical Medicine*, 13(21), p.6363.
7. van Delft, E.A., van Bruggen, S.G., van Stralen, K.J., Bloemers, F.W., Sosef, N.L., Schep, N.W. and Vermeulen, J., 2023. Four weeks versus six weeks of immobilization in a cast following closed reduction for displaced distal radial fractures in adult patients: a multicentre

randomized controlled trial. *The Bone & Joint Journal*, 105(9), pp.993-999.

8. Sukpanichyingyong, S., Sangkomkamhang, T. and Foocharoen, T., 2023. Two-week versus four-week immobilization of stable distal radioulnar joint following surgical fixation of Galeazzi fracture-dislocations: A randomized controlled trial. *Journal of Clinical Orthopaedics and Trauma*, 45, p.102279.
9. Quadlbauer, S., Pezzei, C., Jurkowitsch, J., Kolmayr, B., Simon, D., Rosenauer, R., Salminger, S., Keuchel, T., Tichy, A., Hausner, T. and Leixnering, M., 2022. Immediate mobilization of distal radius fractures stabilized by volar locking plate results in a better short-term outcome than a five week immobilization: a prospective randomized trial. *Clinical rehabilitation*, 36(1), pp.69-86.
10. Alkhatib, N., Abdullah, A.S.A., AlNouri, M., Alzobi, O.Z.A., Alkaramany, E. and Ishibashi, Y., 2022. Short-and long-term outcomes in Bankart repair vs. conservative treatment for first-time anterior shoulder dislocation: a systematic review and meta-analysis of randomized controlled trials. *Journal of Shoulder and Elbow Surgery*, 31(8), pp.1751-1762.
11. Pincin, A., Tourtoulou, C., Pfirrmann, C., Lalioui, A., Savidan, P., Lefevre, Y., Harper, L. and Angelliaume, A., 2022. Elbow dislocation with and without an associated fracture in children: a prospective study of functional outcomes following 3 weeks of immobilization. *Orthopaedics & Traumatology: Surgery & Research*, p.103538.
12. Freehill, M.T., Murray, I.R., Calvo, E., Läderrmann, A. and Srikumaran, U., 2023. Shoulder surgery postoperative immobilization: an international survey of shoulder surgeons. *Biology*, 12(2), p.291.
13. Chaudhry, Y.P., Morway, G.R., Papadelis, E.A., Doerr, N.A., Graf, K.W., Mashru, R.P., Dolch, H.J., Morway, G., Papadelis, E. and Graf Jr, K.W., 2024. Comparison of Short-Arm Immobilization and Long-Arm Immobilization in Conservatively Managed Distal Radius Fractures: A Meta-Analysis and Systematic Review. *Cureus*, 16(3).
14. Chiddarwar, V., de Zoete, R.M., Dickson, C. and Lathlean, T., 2023. Effectiveness of combined surgical and exercise-based interventions following primary traumatic anterior shoulder dislocation: a systematic review and meta-analysis. *British Journal of Sports Medicine*, 57(23), pp.1498-1508.



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