



Research Article

Clinical Outcome of Recurrent Anterior Shoulder Dislocation Treated with Latarjet Procedure in a Tertiary Care Centre of South Kerala

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ABSTRACT

Recurrent shoulder dislocation is a disabling condition with severe apprehension affecting activities of daily living. The Latarjet procedure is a surgery of choice in patients involving glenoid bone loss more than 25%. This study done at a tertiary center on 30 men with short term follow up, showed excellent to good outcome for the open procedure.

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INTRODUCTION

Anterior instability in the glenohumeral joint can be tricky to manage as evidenced by the numerous procedures currently in vogue, both open and arthroscopic with equally good results. One of the principal methods of open treatment for this problem is the Latarjet procedure, as described in his original article in 1954 and it has proven to be a durable and reliable method of treatment for anteroinferior instability of the glenohumeral joint. Several authors have reported on the long-term outcomes of this procedure with satisfactory results. The open Latarjet reconstruction can successfully restore shoulder stability in joints with a significant bony defect of the glenoid even in elderly patients. It is effective in situations where mere soft-tissue reconstruction is not enough. Majority of the patients included were young adults with histories of multiple dislocations and them being manual workers or athletes necessitated the need for early intervention and shoulder stabilization

METHODS AND METHODOLOGY:

The study was designed to assess the clinical outcome of recurrent anterior shoulder dislocation (RDS) treated with Latarjet procedure at a tertiary care center. After obtaining clearance from the institutional scientific and ethical committees, patients with recurrent anterior shoulder dislocation with or without significant glenoid defect (glenoid index less or equal to 0.76), RDS due to bony Bankart or glenohumeral ligament injury, and those who had previous surgery were included. Data collection was done using detailed clinical history and examination, preoperative and post op radiographs, CT and MRI scans. Preoperative and Postoperative ROWE score were used to evaluate the outcome and. All patients were treated with open Latarjet procedure under general anesthesia.

RESULTS AND ANALYSIS

The Data was analyzed using SPSS version 23. Descriptive statistics, Freidmans Test were done for inter duration comparison. Total of 30, right 20 (67.3%) left 10 (33.3 %). All of them had a previous history of trauma. On clinical examination all patients gave history of recurrent dislocation with apprehension test positive and 19 had muscle wasting

but no co morbidities. 26 had significant limitation of daily activities. Pre and post operative range of movements are given below

Table 1 Comparison of forward flexion

Duration	No.	Minimum	Maximum	Mean	Std. Deviation	Mean Rank	Freidmans value	P Val.
Pre OP	30	45	110	71	18.118	1.18		
Immediate post op	30	50	110	74.83	16.789	1.82		
Intermediate phase	30	70	120	88.83	14.305	3	118.58	<0.001
Strengthening phase	30	90	145	110.67	12.780	4		
Returning phase	30	110	165	140	12.865	5		

******-Highly Significant (p<0.001)

There is statistically significant difference present in mean Forward flexion values at various phases which gradually increases

Table 2 Comparison of Extension

Duration	No.	Minimum	Maximum	Mean	Std. Deviation	Mean Rank	Freidmans value	P Val.
Pre OP	30	0	30	15.33	8.193	1.23		
Immediate post op	30	10	45	23	7.381	2.13		
Intermediate phase	30	15	45	28.33	6.989	2.95	100.75	<0.001
Strengthening phase	30	20	50	34.17	7.552	3.93		
Returning phase	30	20	55	39.83	7.598	4.57		

******-Highly Significant (p<0.001)

There is statistically significant difference present in mean extension values at various phases

Table 3 Comparison of Abduction

Duration	No.	Minimum	Maximum	Mean	Std. Deviation	Mean Rank	Freidmans value	P Val.
Pre OP	30	25	90	62.50	18.835	1.05		
Immediate post op	30	45	110	80.50	19.491	2.03		
Intermediate phase	30	55	120	91	17.73	2.95	100.75	<0.001
Strengthening phase	30	75	130	104	15.052	3.97		
Returning phase	30	100	145	124.33	14.547	4.57		

******-Highly Significant (p<0.001)

There is statistically significant difference present in mean abduction values at various phases

Table 4 Comparison of Adduction

Duration	No.	Minimum	Maximum	Mean	Std. Deviation	Mean Rank	Freidmans value	P Val.
Pre OP	30	20	50	31	8.944	1.45		
Immediate post op	30	20	50	36.50	8.625	2.72		
Intermediate phase	30	20	50	38	7.497	3.08	77.551	<0.001
Strengthening phase	30	30	55	40	6.695	3.7		
Returning phase	30	30	50	41.17	5.20	4.05		

******-Highly Significant (p<0.001)

There is statistically significant difference present in mean adduction values at various phases

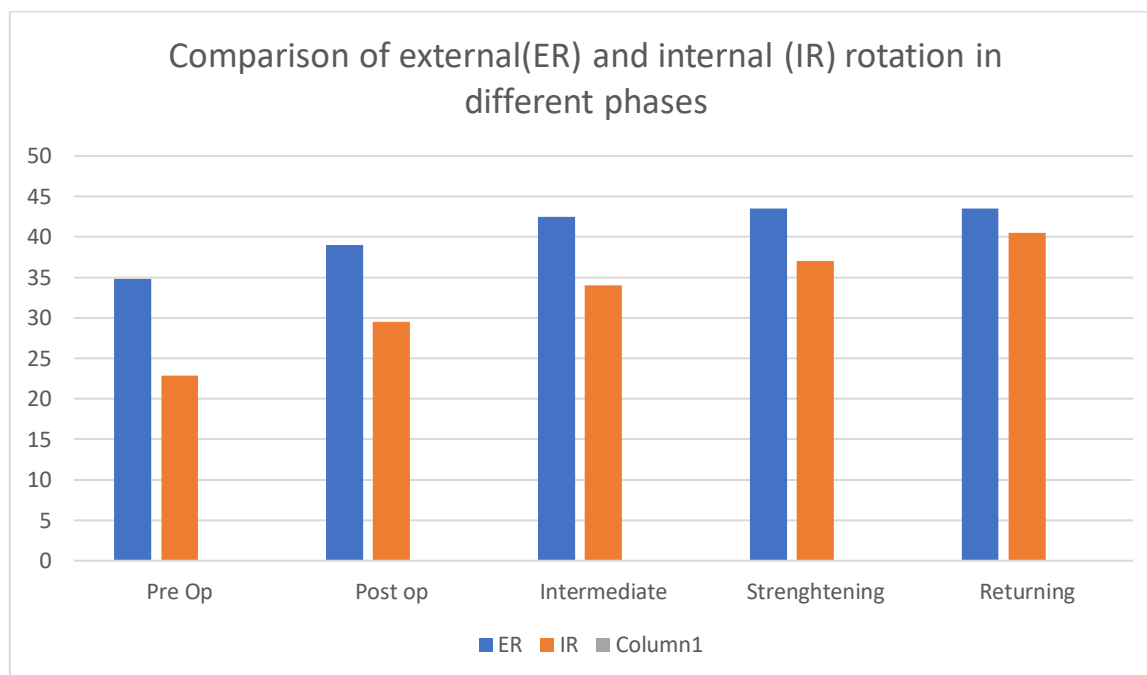
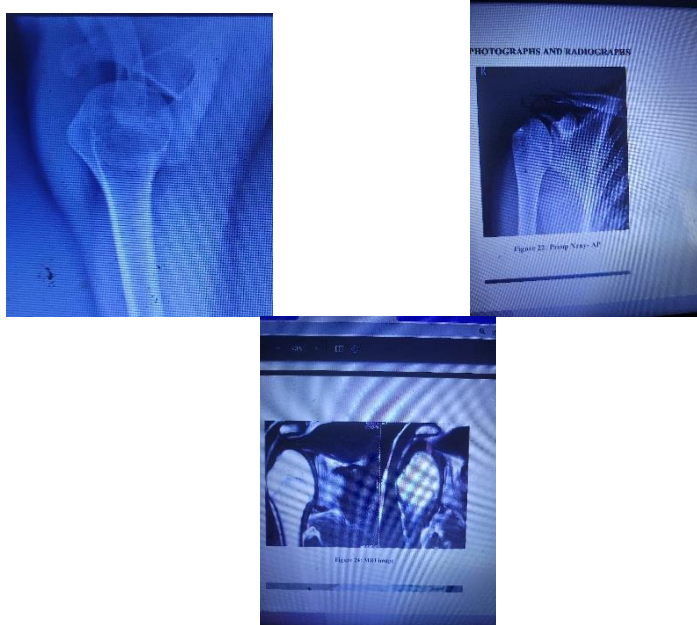


Diagram 1

Pre op xrays : AP and Axial views and MRI



6 Months post op Xray and clinical photos

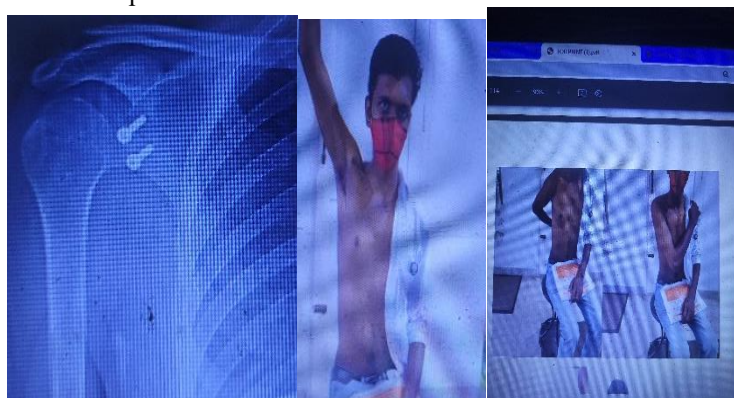


Table 5. Imaging studies: CT scan/MRI

	Frequency	Percent	Valid Percent	Cumulative Percent
Bony defect of glenoid	3	8	8	8
Bony defect of glenoid +Bankart	2	4	4	12
Bony defect of glenoid bone loss of humeral head	9	32	32	44
Bankart bone loss of humeral head	11	40	40	84
Bone loss of humeral head	5	16	16	100
Total	30	100	100	

Three common findings seen in imaging studies were Bankart lesion, bony defect of glenoid and bone loss of humeral head. 11 out of 30 had both Bankart and bone loss at the humeral head.

Pre- and Post-operative ROWE score Key: 100 – 90: Excellent 89 – 75: Good 74 – 51: Fair 50 or less: Poor The distribution of preoperative and postoperative Rowe score in the sample was found to be significantly non normal. The median preoperative score is 55 (IQR 50,65) and median postoperative score is 80(IQR 75,85). This difference was found to be statistically significant on Wilcoxon signed rank test;(Z=-4.798, p= <0.001).

DISCUSSION

In the literature one can find more than 100 surgical procedures described to treat recurrent shoulder dislocation. Majority of them didn't stand the test of time. The usually done Bankart procedure can be advocated only in the presence of isolated soft tissue defects as evaluated in many studies. (1,2) The Latarjet treatment has undergone some changes since it was first used in 1954, but it is still the preferred method for stabilizing unstable shoulders with bony abnormalities. With careful case selection based on clinical and radiological scores, the open Latarjet had produced great results in our study. The coracoid process, a bone addition, creates a bony buttress at the anterior margin of the glenoid, extending the range of motion of the humeral head, particularly in abduction and external rotation. For anterior instability accompanied by considerable glenoid bone loss and an engaged Hill-Sachs lesion, it is a fantastic treatment option when glenoid bone loss exceeds 25%. Compared to other operations, it has the lowest recurrence rate and complications. This surgery gives an excellent result only in the presence of isolated soft tissue defects as evaluated in many studies. (2,3). Off tract Hill Sachs lesion also having poor results. (4) The open Latarjet reconstruction can successfully restore shoulder stability in joints with a significant bony defect of the glenoid even in elderly patients. An important step in boosting the strength of the capsule is capsulorrhaphy, which is performed via the coraco-acromial ligament. A graft put too lateral can cause long-term arthritis and limit range of motion, while a graft placed too medial can cause recurrence. The screw needs to be long enough and should have solid contact with the glenoid neck. The Latarjet treatment stabilizes the shoulder with a minimum loss of range of motion in elderly patients. (5) In our study of Latarjet procedure of 30 patients, following outcomes were noted at the end of study. 60% cases had glenoid bone lesion, and 20% had associated large Hill-Sachs lesion. Cases with glenoid lesion

Table 6

OUR STUDY	60
Mizuno etal.	57
Allain J	96

Table 7

	Rowe score
OUR STUDY	80
HOVELIUS	89.4
RAO	90
MIZUNO	89

Mean ROWE score improved from 55 to 80. Satisfactory outcome (good to excellent score) was seen in 75% of cases, although the mean score was lower than other studies (table 7). Moreover, these studies had a long-term follow-up where patients were seen to improvise on their scores over 5 to 15-year follow-ups. A few patients had a positive apprehension after surgery, no frank dislocation/ subluxation episode was reported. Post-operative movements were near normal. There was only a minimal increase in external rotation which could be either due to a tight closure of the capsule/ Subscapularis or poor compliance to the post-operative physiotherapy. One patient had an infection in the post-operative period which subsided with antibiotics. Three others reported a persistent nonspecific pain around shoulder joint months after surgery. All patients returned to routine normal activities by around six months. At the final follow-up, postoperative radiographs

of all 30 patients showed good union of the coracoid process. We compared our result with already published papers on the functional outcome of Latarjet procedure in the Indian population. (5,6) . According to our findings, even a fibrous union of the graft results in an excellent functional outcome. In order to regain the functions on the operated side, patients must adhere to the post-operative regimen. The majority of the young people in this study participated in sports or activities that were similar to them. Their prompt follow-up and dedication to physical activity produced a more stable, better functioning shoulder

CONCLUSION

The findings of our study demonstrate that anterior shoulder instability is efficiently stabilized by the Latarjet treatment. In all age groups, it is still an effective alternative for treating post-traumatic anterior shoulder instability. With the Latarjet treatment, a number of lesions, including bone Bankart and Bankart lesions linked to Hill-Sachs lesions, can be successfully treated. For a young and middle level orthopedic surgeon, who are yet to get exposed to arthroscopy, in an average and busy setup, Latarjet is the procedure of choice. Even after learning the arthroscopy one can use this skill.

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