

STUDY OF THE INCIDENCE OF CORACOID BONE GRAFT OSTEOLYSIS FOLLOWING LATARJET PROCEDURE FOR RECURRENT TRAUMATIC ANTERIOR SHOULDER DISLOCATION

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INTRODUCTION

The stability of the glenohumeral joint is determined by the interaction of both static and dynamic stabilizers. The presence of Hill-Sachs and Bankart lesions can significantly increase the likelihood of repeated shoulder dislocations. The Latarjet procedure is a reliable and successful method for treating shoulder instability. This procedure preserves the connection between the conjoint tendon and the coracoid process. The "sling" effect created by this procedure helps to prevent the shoulder from dislocating anteriorly. Despite its success, the Latarjet procedure is associated with a reported complication rate of approximately 15%, with osteolysis the transferred coracoid bone graft, being one such complication. Coracoid bone transplant osteolysis can occur due to a combination of biological and biomechanical influences. Biological factors include the shape and size of the graft and glenoid and the availability of blood supply. Biomechanical factors involve the stability and appropriate mechanical loading. Infection can also contribute to graft failure.

AIM OF THE WORK

To delineate the incidence of coracoid bone graft osteolysis following the Latarjet procedure for recurrent traumatic anterior shoulder dislocation.

PATEINTS AND METHODS

This is a prospective study that included 30 patients with recurrent traumatic anterior shoulder dislocation treated with the Latarjet procedure. Surgeries were performed in the arthroscopy unit of El-Hadra University Hospital. Data were collected from November 2023 till December 2024. All patients completed a period of at least 6 months of follow-up. Risk factors for osteolysis were investigated.

A. Inclusion Criteria:

- Age between 19 and 40 years old.
- Recurrent anterior shoulder dislocation.

B. Exclusion Criteria:

- Rotator cuff tear
- Multi-directional Instability
- Infection
- Latarjet done for neglected locked anterior shoulder dislocation.

Methods of assessment of the results:

- Clinical assessment
Patients were evaluated pre- and postoperatively using the Rowe Score for Instability
- Radiological assessment:
Post-surgery and 6-month CT scans analyzed the partitioned coracoid graft. Divided into eight sections (superficial/deep, proximal/distal/medial/lateral), surface areas were measured relative to screw reference points and compared over time.

RESULTS

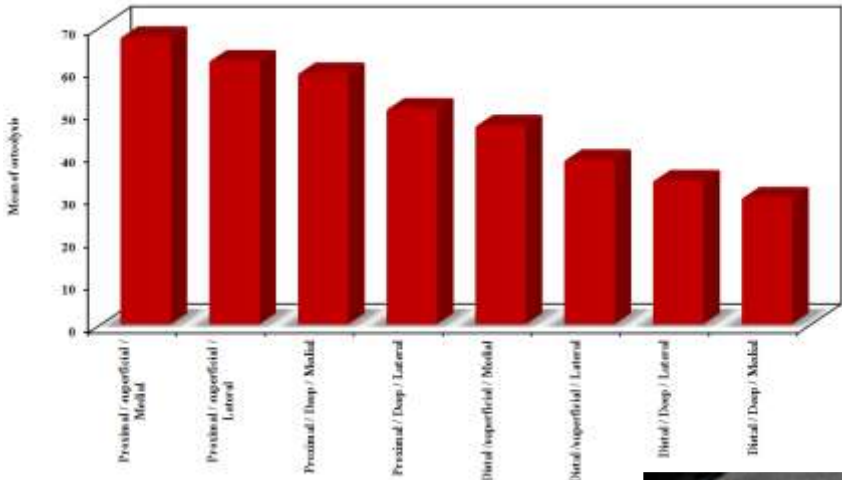


Figure 1:
Descriptive analysis of the studied cases according to osteolysis

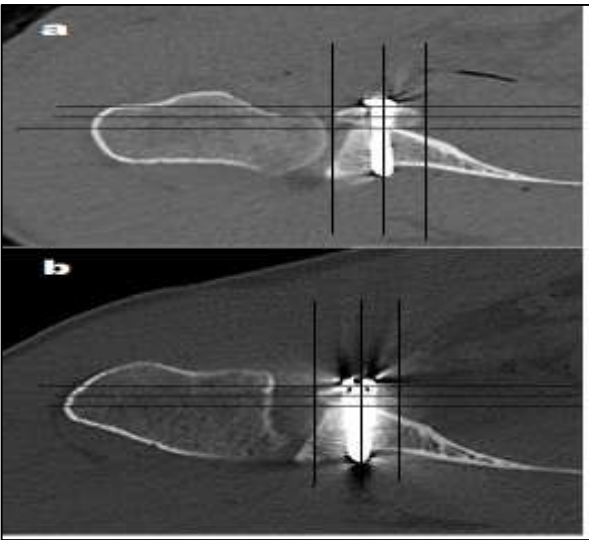


Figure 2: CT scan showing the coracoid bone graft around the proximal screw:
a. initial CT b. late CT.

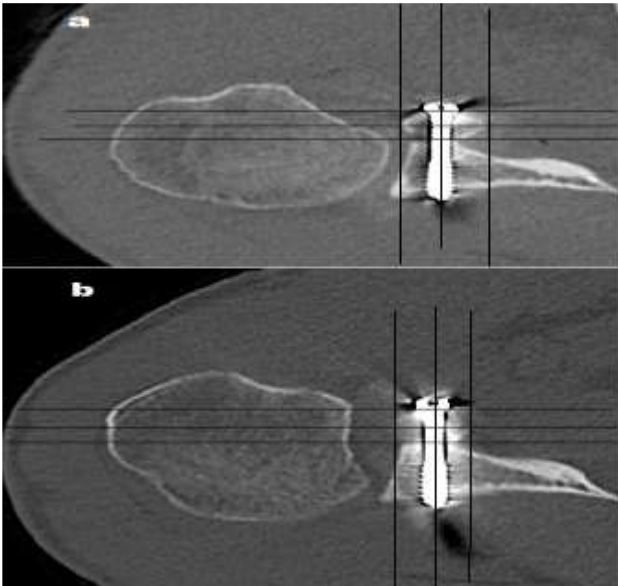


Figure 3: CT scan showing the coracoids bone graft around distal screw:
a. initial CT b. late CT.

Table 1: Comparison between pre- and postoperative according to total Rowe score (n = 30)

Rowe score	Preoperative		Postoperative	
	No.	%	No.	%
Total Rowe score				
Unsatisfactory	30	100.0	3	10.0
Poor (≤50)	12	40.0	1	3.3
Fair (51-74)	18	60.0	2	6.7
Satisfactory	0	0.0	27	90.0
Good (75 - 89)	0	0.0	7	23.3
Excellent (90-100)	0	0.0	20	66.7
Min. – Max.	25.0 – 70.0		15.0 – 95.0	
Mean ± SD.	54.83 ± 13.29		85.67 ± 16.12	
Median (IQR)	60.0 (50.0 – 65.0)		90.0 (80.0 – 95.0)	
Z (p)	4.654*($<0.001^*$)			

CONCLUSION

Our study confirms that coracoid bone graft osteolysis is a common finding after the Latarjet procedure within the first six months, predominantly affecting the superficial proximal graft region. Importantly, this osteolysis did not correlate with negative clinical outcomes in our cohort. Age, smoking, and glenoid bone loss emerged as potential risk factors that correlate with levels of bone resorption. Further long-term studies with larger groups are needed to better understand the implications of osteolysis and other contributing factors.