

## Recurrent dislocation of the shoulder managed with bristow latarjet procedure

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### Abstract

**Aim:** To evaluate the functional outcomes of the Bristow-Latarjet procedure in patients with recurrent shoulder dislocations.

**Objective:** “Recurrent dislocation of the shoulder”, is a common problem in youngsters. Basically, the ball of the shoulder joint slips out of it’s socket. First time it is caused by significant injury, fall while playing in the playground or an accident. It becomes “recurrent”, if repeated dislocation (slipping of ball out of the socket) happens with trivial injury or in sleep too. Such patients need an MRI and Surgical treatment like Arthroscopic Bankart Repair (Key Hole surgery). But, sometimes the socket gets partly eroded by repeated dislocation, (Bony Bankart lesion) in which case, keyhole surgery cannot be performed, rather a open surgery called as Bristow latarjet procedure, is required, which prevents further recurrent dislocations.

**Keywords:** recurrent dislocation, bristow latarjet

### Introduction

The glenohumeral joint is the most mobile in humans; its wide range of movement and the relatively loose anterior-inferior recess increases the risk for anterior dislocation or subluxation. 50% of all joint dislocations involve the shoulder, mostly young males. When the first dislocation occurs under 20 years old the risk for recurrent instability increases to 90%. In persons older than 40 years of age, the incidence drops sharply to 15-20 %. The majority of all recurrences occur within the first 2 years after the first traumatic dislocation <sup>[1]</sup>. Surgical stabilization of the glenohumeral joint is indicated when recurrent instability causes discomfort <sup>[2]</sup>. Coracoid osteotomy and transfer to the glenoid along with short head of biceps and coracobrachialis tendon, secured with screws were first described by Latarjet in 1954 and subsequently Helfet in 1958 <sup>[4,5]</sup>. In reality, Helfet, did not use the screw and only sutured the bone fragment to the anterior muscular wall. Multiple modifications have been made to this original description <sup>[5, 12, 13]</sup>, but the essential result is a transferred coracoid bone block reinforcing the anterior inferior glenoid margin. Today, the Bristow- Latarjet procedure with detachment of the tip of the coracoid and its transfer to the glenoid is routinely used as a safe manner to treat shoulder dislocation. We did this study to evaluate the functional and clinical outcome of the Bristow-Latarjet procedure in patients with recurrent shoulder dislocation treated surgically.



Fig 1

### Materials and methods

A retrospective review was conducted of patients with Bristow Latarjet procedure treated between January 2019 and June 2020. In all 10 patients were enrolled in the study with recurrent shoulder dislocations affecting ADL. Patient data including age of patient on first dislocation, injury mechanism, and events of recurring dislocations before surgical repair, time of surgery, follow-up period (12 months), and complications were recorded. The operation started with patient in supine position on normal OT table with arms hanged by the side covered in clean drape upto elbow. A standard axillary incision about 7-8 cm, there after the coracoid was exposed and the musculocutaneous nerve is protected. It is important to keep the insertion of the pectoralis tendon at the base of the coracoid process. The remaining short head of biceps tendon and coracobrachialis muscle must accompany the bone fragment. A central drill hole was placed in the coracoid tip using a 3.2-mm drill to facilitate fixation. An osteotomy of the coracoid was performed approximately 1.5-2 cm distal to the tip depending from the bone structure and pattern of coracoids process. The osteotomy can also be made with an oscillating saw or with a good slightly curved 15 mm osteotome. We have used osteotome with excellent cut and with no complication of coracoid process. In our experience it was of paramount importance to respect the horizontal split avoiding the vertical incision of subscapularis tendon, although it is technically more difficult but with a very good results and early rehabilitation. The glenoid edge must be decorticated up 2 cm medial to the glenoid, beneath the glenoid equator. A bicortical drill hole was placed in an anterior-posterior direction. The direction of drill must be perpendicular to the scapular wing and not to the operating table, thus slightly from medial to lateral posteriorly. The ideal entry point is 5 mm medial to glenoid rim and just 2

mm below the equator line. The glenoid edge must be decorticated up 2 cm medial to the glenoid, beneath the glenoid equator. A bicortical drill hole was placed in an anterior-posterior direction. The direction of drill must be perpendicular to the scapular wing and not to the operating table, thus slightly from medial to lateral posteriorly. The ideal entry point is 5 mm medial to glenoid rim and just 2 mm below the equator line. The glenoid edge must be decorticated up 2 cm medial to the glenoid, beneath the glenoid equator. A bicortical drill hole was placed in an anterior-posterior direction. The direction of drill must be perpendicular to the scapular wing and not to the operating table, thus slightly from medial to lateral posteriorly. The ideal entry point is 5 mm medial to glenoid rim and just 2 mm below the equator line. The coracoid tip was transferred and attached by a screw. We use only titanium alloy screw to avoid subsequent removal for MRI purposes. With the humerus in complete internal rotation, the tendon of the subscapularis was sutured with two or three sutures and the wound were closed in layers. The arm was immobilized in

adduction and internal rotation for 21 days with shoulder immobilizer, and then subjected to a 3-6 weeks rehabilitation phase. Postoperatively, the range of movement at the glenohumeral joint was measured in all the three planes. The stability of the shoulder was tested using the apprehension test and Sulcus sign. The overall function and stability of the shoulder was evaluated using the Rowe score [16]. Parameters including stability, range of movement, daily function, and pain were evaluated. The final score indicated a poor surgical outcome if it was  $\leq 50$  points, fair if 51 to 74 points, well if 75 to 89 points, and excellent if 90 to 100 points. Two orthopedic surgeons evaluated postoperative radiographs of the shoulder in anteroposterior, lateral and true anteroposterior views; fusion of the transplant, position of the screw, and arthritic signs of the glenohumeral joint (classified according to Samilson and Prieto) were assessed [16]. Data were collected using an Excel worksheet and analyzed. Means were calculated with 95% confidence intervals (CIs)

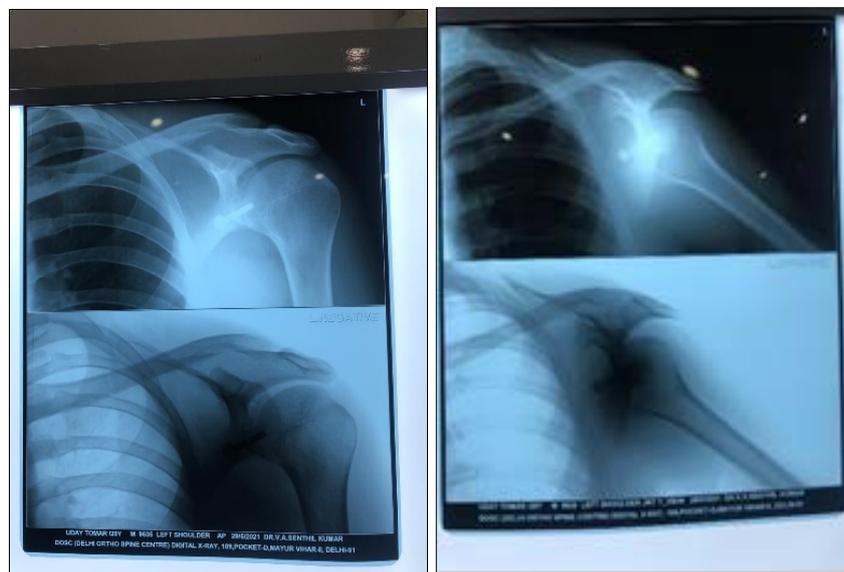


Fig 1: Xray at 14 weeks

**Results**

Photos and X rays how the results after such a Bristow Latarjet procedure in a young patients with excellent function, within 2 and 1/2 months of Surgery. Seven (70%) of the shoulder dislocations were caused by trauma. The mean number of recurring dislocations was 5 (95% confidence interval [CI], 0–10); one patient had had 6

recurrences. Mean follow-up 12 months. No dislocation happened postoperatively. Only one had clinical sign of pain and discomfort. The overall functional outcome was good, with a mean Rowe score of 88 points (95% CI, 78–100). Scores of 7(70%) of the patients were excellent, 2(20%) were good, 1 (10%) were fair. Now they doesn't have fear of dislocation.

Table 1

age	sex	no.of dislocation	follow up	ROWE score
20	M	5	12 months	excellent
29	M	4	14 months	good
27	M	5	12 months	excellent
35	M	4	11 months	excellent
33	M	5	12 months	excellent
27	F	6	12 months	good
31	M	5	10 months	excellent
33	M	4	11 months	fair
21	F	3	12 months	excellent



**Fig 2:** 14 weeks post OP images

### Discussion

Open surgeries have been traditionally used for treatment of anterior glenohumeral instability. In 1923 Bankart first published his operative procedure placating the inferior loose capsule. In 1918 Eden was the first to suggest a bone blocking operation anterior to glenoid in order to stop mechanically the anterior migration of humeral head. In 1954 Trillat described the transfer of coracoids process anteriorly to glenoid using a nail as fixation tool.

The Bristow-Latarjet procedure was introduced in English literature by Helfet in 1958 Compared to other surgical procedures for anterior shoulder instability, it consists in an important remodeling and reorientation of the peri-articular anatomy and its possible complications remains a major challenge for even most experienced surgeons [17]. The coracoid transfer does not deal with the primary pathology of either traumatic or non-traumatic glenohumeral instability. In 1961 Mc Murray like Latarjet used screw for coracoid fixation and explained that the mechanism of joint stability was secured by the brace role of coracobrachialis and biceps tendon- muscle unit more than from “boneblock” effect of coracoid fragment. Thus the basic role of bone fragment is that of a good and safe anchor for the above two muscles which acts like dynamic stabilizers.

In recent years these techniques have regained popularity because of too many recurrences from closed Bankart or other similar soft tissue repair procedures. Also many patients, especially heavy manual workers feel a kind of loss of force after Bankart procedure which is the technique of choice for competitive athletes. Nonetheless, the major aim of surgical repair of shoulder instability is prevention of recurrent dislocations. Our patients had no recurrent dislocations after the Bristow-Latarjet repair, consistent with other studies. Outcomes of the Bristow-Latarjet procedure are comparable to other open surgical techniques [18]. Our group of patients have good postoperative range of shoulder movement, except for a slight decrease in external rotation, which did not impair activities of daily living. Moreover Latarjet procedure is a dynamic and not a statically form of preventing head dislocation. All patients could perform their jobs and sport activities almost quite normally. Despite several instances of screw loosening (two-cases), patient satisfaction was high and no neurovascular complication was observed. Severe complications after screw loosening are sporadic [18, 19]. Transplant fixation by degradable materials is still under development [23]. Arthroscopic techniques are increasingly popular for treatment of shoulder instability [22, 23]. Although the majority of

glenohumeral stabilization are performed through arthroscopic assisted procedures with increasing good to excellent results this techniques needs expensive facilities and the procedure is not so easy for untrained surgeons. A learning curve is imperative even for experienced shoulder surgeons. However arthroscopic surgeries are becoming more and more accepted as the treatment of first choice in among shoulder surgeons. In 2005, a meta-analysis comparing the outcome of open and arthroscopic techniques found a more favorable outcome following open procedures in terms of recurrence and return to activity [23]. Compared to open procedures, the Mantel-Heanzel pooled odds ratio for recurrent instability after arthroscopic repair was 2.04 (95% CI, 1.27–3.29), and it was 2.85 (95% CI, 1.08–3.65) for return to activity, both of which favours open procedures.

In conclusion, the Bristow-Latarjet procedure may be a quite safe open surgical treatment for recurrent shoulder dislocation with bony bankart lesion, with the perioperative prerequisites that the surgeon is familiar with the technique and surgical anatomy of the region. Although it is a non-anatomical repair, it provides very good to excellent functional results. Patients with recurrent dislocations need an MRI and Surgical treatment like Arthroscopic Bankart Repair (Key Hole surgery). But, sometimes the socket gets partly eroded by repeated dislocation (Bony Bankart lesion) in which case, keyhole surgery cannot be performed, rather A open surgery called as BRISTOW LATARJET PROCEDURE, is required, which prevents further recurrent dislocations.

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#### Conflicts Of Interest

There Are No Conflicts of Interest.

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