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Dr. B Sharukh
Junior Resident in Orthopaedics,
Narayana Medical College,
Nellore, Andhra Pradesh, India

Dr. A Sandeep Kumar
Senior Resident in Orthopaedics,
Narayana Medical College,
Nellore, Andhra Pradesh, India

Modified Latarjet procedure for recurrent shoulder instability: A series of 10 cases

Dr. B Sharukh and Dr. A Sandeep Kumar

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Abstract

Introduction: The Latarjet procedure employs rerouting of the osteotomised coracoid process with its attached conjoint tendon through a split in the substance of subscapularis and fixed to the antero inferior aspect of glenoid rim. Screwing of the coracoid process on to the anteroinferior side of the glenoid at the level of the anterior glenoid rim was described by Latarjet 2 in 1954. In his original technique, subscapularis was incised vertically along the whole of its length, then sutured with an over-lap. Latarjet procedure is an excellent surgical option for recurrent shoulder instability associated with glenoid bone deficiency with or without engaging hillsachs lesion.

Aims: Our aim was to study the functional outcome of Latarjet procedure in Indian population as many of these patients present with recurrent episodes of dislocation and most of these patients have glenoid bone loss with or without an associated hillsachs lesion.

Materials and Methods: Orthopaedics department between July 2019 to October 2020 with recurrent anterior shoulder dislocation were evaluated clinically and radiologically (ap view, trans-axillary lateral view, scapular y view, CT Scan and MRI Scan). A total of 10 patients (8 male and 2 female) with mean age at the time of surgery was 22.2 years (18-30 years) with recurrent episodes of anterior shoulder dislocation and glenoid bone loss (>25%) with or without an engaging hillsachs lesion were included in our study.

Conclusion: In our study of 10 cases 9 patients had excellent to good results based on ROWE score and OSII score. Post operative range of motion of shoulder was almost fully achieved in all patients. Mean abduction was 170 deg (150-180 deg), mean external rotation loss was 20 deg (15-25 deg).

None of our patients had recurrent episode of dislocation postoperatively till the latest followup. Soft tissue Bankart repairs yield good results when used for capsulolabral avulsions and tears.

With good clinical and radiological evaluation more complex lesions like bony bankarts and bankarts with associated hillsachs lesion can be identified and successfully treated by Latarjet procedure.

Keywords: Latarjet procedure, recurrent shoulder instability, 10 cases

Introduction

The use of the coracoid process to stabilise the shoulder was first described by Oudard in 1923. He introduced a bone graft into a split in the horizontal part of the coracoid apophysis to fill the coracoglenoidal space. Screwing of the coracoid process on to the anteroinferior side of the glenoid at the level of the anterior glenoid rim was described by Latarjet ^[2] in 1954. In his original technique, subscapularis was incised vertically along the whole of its length, then sutured with an over-lap. Patte *et al.* proposed changes in 1980 to Latarjet's technique by developing the concept of anterior triple locking, which involved a bone-block effect, suturing of the coraco-acromial ligament to the medial capsular flap with preservation of the lower third of the tendon of subscapularis.

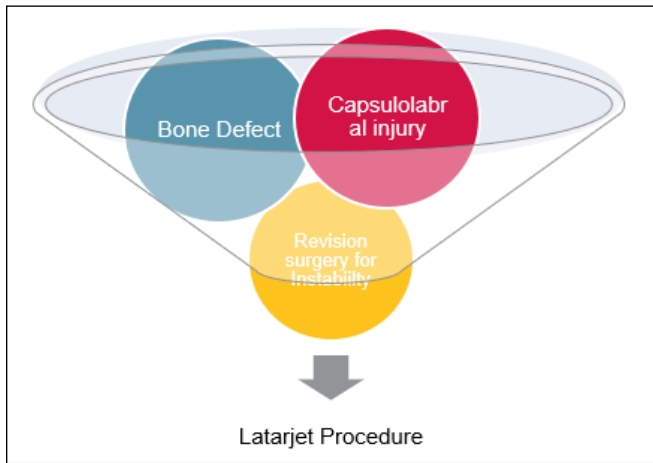
Aim

Our aim was to study the functional outcome of Latarjet procedure in Indian population as many of these patients present with recurrent episodes of dislocation and most of these patients have glenoid bone loss with or without an associated hillsachs lesion.

Materials and Methods

All patients who have presented to the orthopaedics department between July 2017 to October

Corresponding Author:
Dr. B Sharukh
Junior Resident in Orthopaedics,
Narayana Medical College,
Nellore, Andhra Pradesh, India



Components of Latarjet procedure

2018 with recurrent anterior shoulder dislocation were evaluated clinically and radiologically (ap view, trans-axillary lateral view, scapular y view, CT Scan and MRI Scan). A total of 10 patients (8 male and 2 female) with mean age at the time of surgery was 22.2 years (18-30 years) with recurrent episodes of anterior shoulder dislocation and glenoid bone loss (>25%) with or without an engaging hillsachs lesion were included in our study. Patients with an isolated bankarts lesion, hyperlaxity on examination, surgically unfit, were excluded.

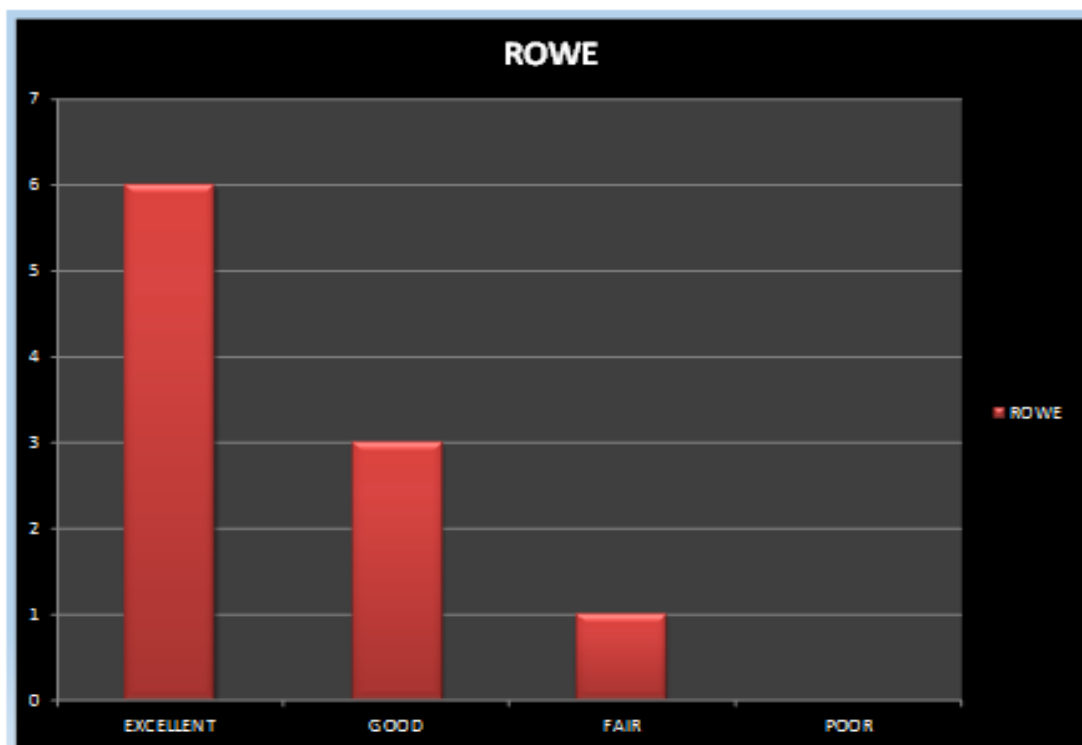
Patient is placed in beach chair position and shoulder was approached using delto pectoral interval. Corocoid process with its attached conjoint tendon identified and corocoid was osteotomised at its angle. Subscapularis muscle is split horizontally at the junction of upper two thirds and lower one third near the musculo-tendinous junction and the capsule was incised vertically.

Osteotomised corocoid was placed over the glenoid defect and fixed with two 4 mm cannulated cancellous screws and wound closed in layer. Shoulder was immobilised in arm pouch for a period of one week and post operative physiotherapy was started after one week. Follow up period was 6 months. Post operative shoulder function was evaluated using ROWE Score and Oxford Shoulder Instability Index.

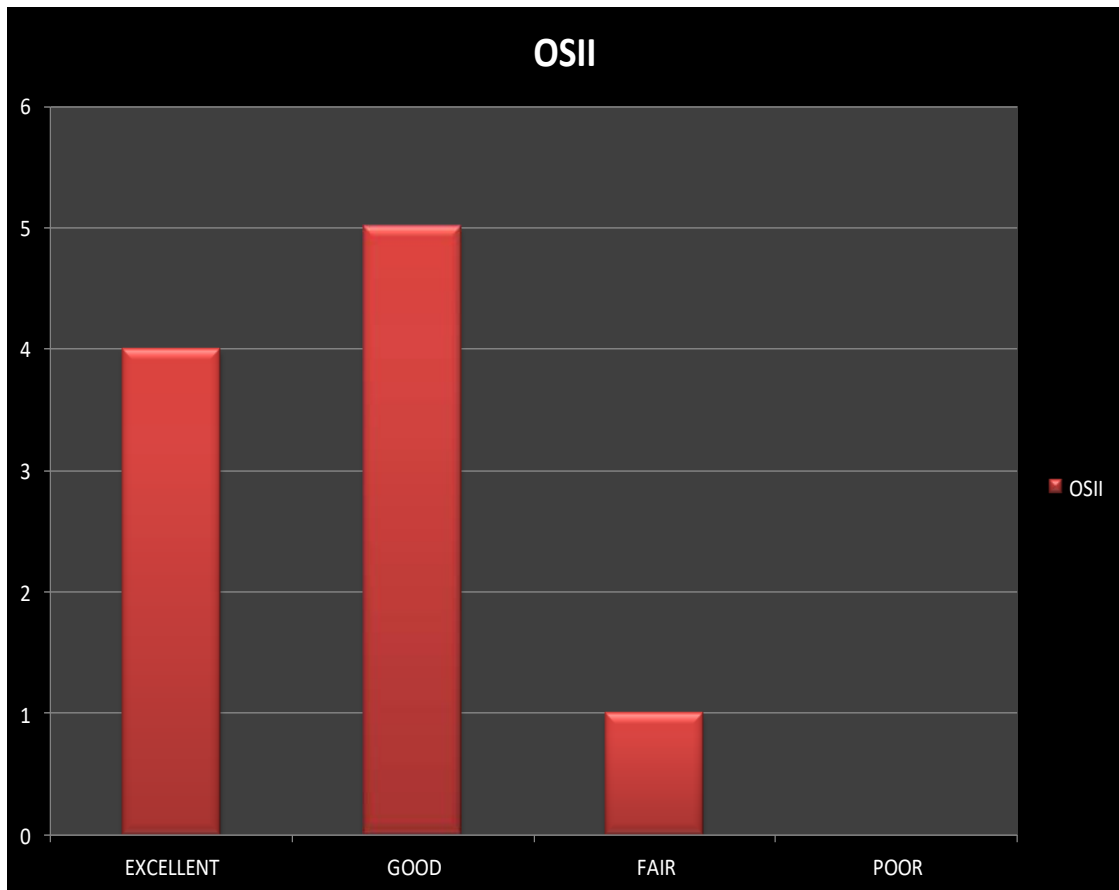
Results

- Follow up period was 6 months
- No patient had recurrent episode of dislocation post operatively
- Mean abduction was 170 deg (150–180 deg)
- Mean loss of external rotation was 29 deg (20-39 deg) but not affecting patients daily activities

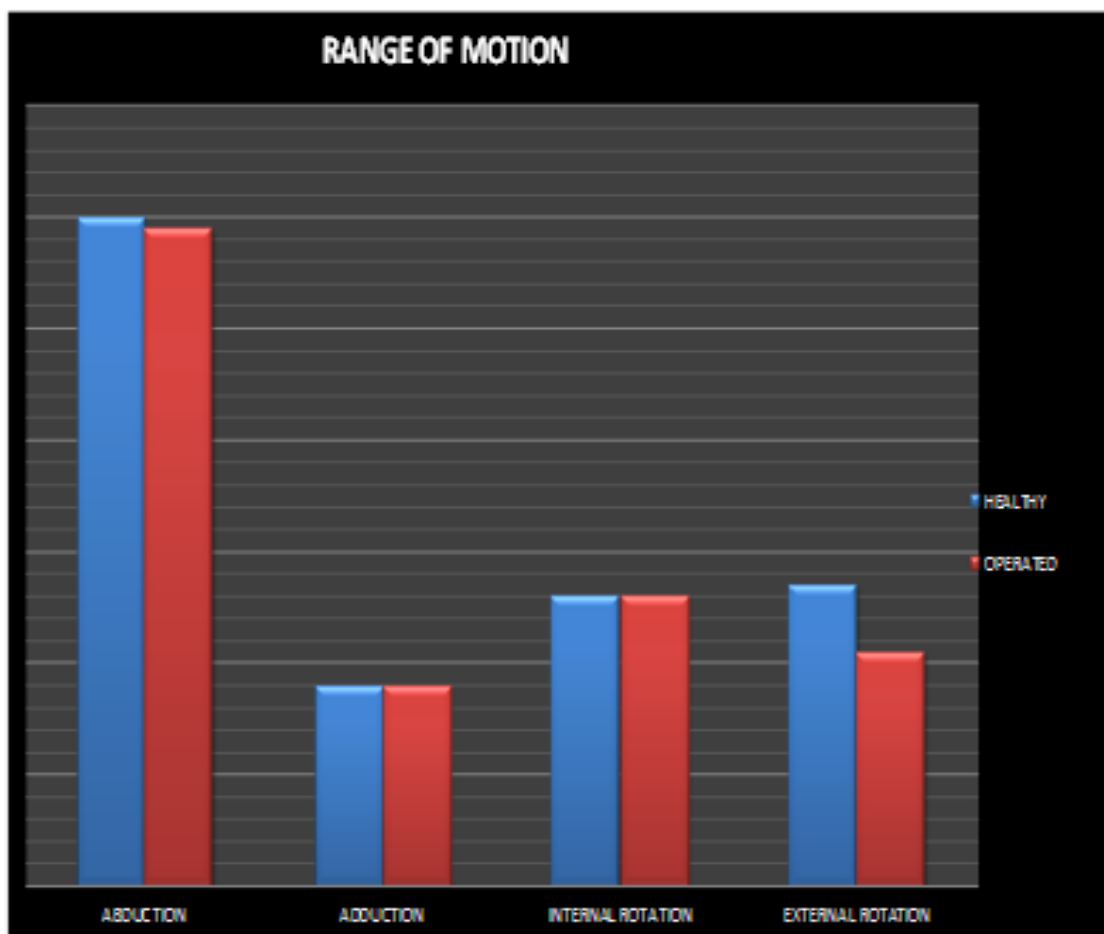
All follow up radiographs showed good position of graft and graft unio



Graph showing ROWE score distribution among subjects



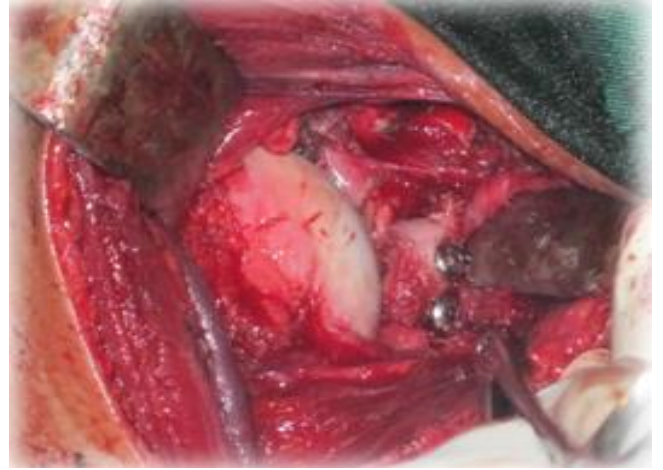
Graph showing OSII score distribution among subjects



Graph showing comparison between range of motion of healthy shoulder with that of operated one



Intraoperative image showing incision



Intraoperative image showing deep dissection



Intra Operative Images



Post Operative Xrays



Clinical Picture

Discussion

Most commonly performed surgery for shoulder dislocation is an open or an arthroscopic bankarts repair as the commonly associated lesion is an bankarts lesion. This surgery gives excellent results if done for an isolated bankarts lesion, but poor results are reported if glenoid bone loss was the major contributing factor for recurrent dislocation of shoulder. Studies by balg & boileau, Uhorchak and colleagues, Burkhart and De Beer proved high recurrence rate with arthroscopic bankarts repair done for recurrent shoulder instability associated with significant bone defects of glenoid. The Latarjet procedure is a useful form of treatment for patients with recurrent anterior dislocation of the shoulder.

The mechanisms by which this technique achieves stability include the following effects

The creation of a sling mechanism by the conjoint tendon crossing the lower part of the subscapularis muscle, compressing this and the anteroinferior capsule against the humeral head. The restoration of the anterior glenoid rim by the transposed coracoid process; and repair of the capsule, which is performed using the stump of the resected coraco-acromial ligament. Excellent long-term results, with low rates of redislocation, have been described.

Conclusion

In our study of 10 cases 9 patients had excellent to good results based on ROWE score and OSII score. Post operative range of motion of shoulder was almost fully achieved in all patients. Mean abduction was 170 deg (150-180 deg), mean external rotation loss was 20 deg (15-25 deg). None of our patients had recurrent episode of dislocation postoperatively till the latest follow up. Soft tissue Bankart repairs yield good results when used for capsulolabral avulsions and tears. With good clinical and radiological evaluation more complex lesions like bony bankarts and bankarts with associated hillsachs leison can be identified and successfully treated by latarjet procedure

References

1. Kazár B, Relovszky E. Prognosis of primary dislocation of the shoulder. *Acta Orthop* 1969;40(2):216-224.
2. Hovelius L. Incidence of shoulder dislocation in Sweden. *Clin Orthop Relat Res* 1982;166:127-131.
3. Boileau P, Villalba M, Hery JY, Balg F, Ahrens P, Neyton

L. Risk factors for recurrence of shoulder instability after arthroscopic Bankart repair. *J Bone Joint Surg Am* 2006;88:1755-1763.

4. Burkhart SS, De Beer JF. Traumatic glenohumeral bone defects and their relationship to failure of arthroscopic Bankart repairs: significance of the inverted-pear glenoid and the humeral engaging Hill-Sachs lesion. *Arthroscopy* 2000;16:677-694.
5. Itoi E, Lee SB, Berglund LJ, Berge LL, An KN. The effect of a glenoid defect on anteroinferior stability of the shoulder after Bankart repair: a cadaveric study. *J Bone Joint Surg Am* 2000;82:35-46.
6. Owens BD, Agel J, Mountcastle SB, Cameron KL, Nelson BJ. Incidence of glenohumeral instability in collegiate athletics. *Am J Sports Med* 2009;37(9):1750-4.
7. Kaplan LD, Flanigan DC, Norwig J, Jost P, Bradley J. Prevalence and variance of shoulder injuries in elite collegiate football players. *Am J Sports Med* 2005;33(8):1142-6.
8. Charles Bessière, Christophe Trojani, Michel Carles Saurabh S, Mehta MS, Boileau. The Open Latarjet Procedure Is More Reliable in Terms of Shoulder Stability Than Arthroscopic Bankart Repair. *Clin Orthop Relat Res* DOI 10.1007/s11999-014-3550-9.
9. Mizuno N, Denard PJ, Raiss P, Melis B, Walch G. Long-term results of the Latarjet procedure for anterior instability of the shoulder. *J Shoulder Elbow Surg* 2014;23(11):1691-9.
10. Johanna Schulze-Borges, Dr. Eng Jens D. Agneskirchner, Evgenij Bobrowitsch, Thilo Patzer, Melena Struck *et al.* Biomechanical Comparison of Open and Arthroscopic Latarjet Procedures. *Arthroscopy: The journal of arthroscopic and related Surgery* 2013;29(4):630-637.
11. Yiming Zhu, Chunyan Jiang, Guanyang Song. Investigation performed at the Shoulder Service, Beijing Ji Shui Tan Hospital, School of Medicine, Peking University, Beijing, China Arthroscopic Versus Open Latarjet in the Treatment of Recurrent Anterior Shoulder Dislocation With Marked Glenoid Bone Loss A Prospective Comparative Study. *The American Journal of Sports Medicine*, XX:X,DOI : 10.1177/0363546517693845.
12. Burkhart SS, De Beer JF, Barth JR, Cresswell T, Roberts C, Richards DP. Results of modified Latarjet reconstruction in patients with anteroinferior instability and significant bone loss. *Arthroscopy* 2007;23:1033-41.
13. Booker S, Alfahad N, Scott M, Gooding B, Wallace WA. Use of scoring systems for assessing and reporting the outcome results from shoulder surgery and arthroplasty. *World J Orthop* 2015;6(2):244-51. doi: 10.5312/wjo.v6.i2.244. eCollection 2015 Mar 18.
14. Catherine J Fedorka, Mary K Mulcahey. Department of Orthopaedic Surgery, Hahnemann University Hospital/Drexel University College of Medicine, Philadelphia, PA, USA. Recurrent anterior shoulder instability: a review of the Latarjet procedure and its postoperative rehabilitation. Published in *informa healthcare on 2015*.
15. Baker CL, Uribe JW, Whitman C. Arthroscopic evaluation of acute initial anterior shoulder dislocations. *Am J Sports Med.* 18(1):25-28.
16. Rowe CR, Zarins B. Recurrent transient subluxation of the shoulder. *J Bone Jt Surg.* 1978;63(6):863-872.
17. Erkoçak ÖF, Yel M. Bankart Repair with Knotless Anchors for Anterior Glenohumeral Instability. *Eur J Gen*

- Med 2010;7(2):179-186.
18. Henry JH, Genung JA. Natural history of glenohumeral dislocation: revisited. *Am J Sports Med* 1982;10:135-137.
 19. Hovelius L. Shoulder dislocation in Swedish ice hockey players. *Am J Sports Med* 1978;6:373-377.
 20. Hovelius L, Eriksson K, Fredin H *et al.* Recurrences after initial dislocation of the shoulder: results of a prospective study of treatment. *J Bone Joint Surg Am* 1983;65:343-349.
 21. Kralinger FS, Golser K, Wischatta R, Wambacher M, Sperner G. Predicting recurrence after primary anterior shoulder dislocation. *Am J Sports Med* 2002;30:116-120.
 22. Nobuhara K. *The Shoulder: Its Function and Clinical Aspects* [in Japanese]. 3rd ed. Tokyo, Japan: Igaku-shoin 2001.
 23. Norlin R. Use of Mitek anchoring for Bankart repair: a comparable, randomized, prospective study with traditional bone sutures. *J Shoulder Elbow Surg*. 1994;3:381-385.
 24. Rowe CR, Patel D, Southmayd WW. The Bankart procedure: a long-term end-result study. *J Bone Joint Surg Am* 1978;60:1-16.
 25. Townley CO. The capsular mechanism in recurrent dislocation of the shoulder. *J Bone Joint Surg Am* 1950;32:370-380.
 26. Matsen FA III, Thomas SC. Glenohumeral instability. In: Evarts CM, ed. *Surgery of the Musculoskeletal System*. 2nd ed. New York, NY: Churchill Livingstone 1990, 1439-1469.
 27. Matsen FAIII, Thomas SC, Rockwood CA Jr, Wirth MA. Glenohumeral instability. In: Rockwood CA Jr, Matsen FA III, eds. *The Shoulder*. Philadelphia, Pa: WB Saunders; 1998;2:611-754.
 28. Gill TJ, Micheli LJ, Gebhard F, Binder C. Bankart repair for anterior instability of the shoulder: long-term outcome. *J Bone Joint Surg Am* 1997;79:850-857.
 29. Gill TJ, Zarins B. Open repairs for the treatment of anterior shoulder instability. *Am J Sports Med*. 2003;31:142-153.
 30. Gill TJ, Zarins B. Open repairs for the treatment of anterior shoulder instability. *Am J Sports Med*. 2003;31:142-153.
 31. Balg F, Boileau P. The instability severity index score. A simple pre-operative score to select patients for arthroscopic or open shoulder stabilisation. *J Bone Joint Surg Br* 2007;89:1470-1477.
 32. Tjoumakaris FP, Abboud JA, Hasan SA *et al* Arthroscopic and open Bankart repairs provide similar outcomes. *Clin Orthop Relat Res* 2006;446:227-232.
 33. Tauber M, Resch H, Forstner R *et al.* Reasons for failure after surgical repair of anterior shoulder instability. *J Shoulder Elbow Surg* 2004;13:279-285.
 34. Mizuno N, Yoneda M, Hayashida K *et al.* Recurrent anterior shoulder dislocation caused by a midsubstance complete capsular tear. *J Bone Joint Surg Am* 2005;87:2717-2723.
 35. Bhagia SM, Ali MS. Bankart operation for recurrent anterior dislocation of the shoulder using suture anchor. *Orthopedics* 2000;23:589-591.
 36. Lafosse L, Boyle S, Gutierrez-Aramberri M *et al.* Arthroscopic Latarjet procedure. *Orthop Clin North Am* 2010;41:393-405.
 37. Allain J, Goutallier D, Glorion C. Long-term results of the Latarjet procedure for the treatment of anterior instability of the shoulder. *J Bone Joint Surg Am* 1998;80:841-852.
 38. Cassagnaud X, Maynou C, Mestdagh H. Clinical and computed tomography results of 106 Latarjet-Patte procedures at mean 7.5 year follow-up. *Rev Chir Orthop Reparatrice Appar Mot* 2003;89(8):683-692.
 39. Collin P, Rochcongar P, Thomazeau H. Treatment of chronic anterior shoulder instability using a coracoid bone block (Latarjet procedure): 74 cases. *Rev Chir Orthop Reparatrice Appar Mot* 2007;93:126-132 (in French).