Short-term Complications of the Arthroscopic Latarjet Procedure: A North American Experience

George S. Athwal, M.D., F.R.C.S.C., Robert Meislin, M.D., Charles Getz, M.D., David Weinstein, M.D., and Paul Favorito, M.D.

Purpose: To report on the intraoperative and early postoperative (<3 months) problems and complications encountered with the arthroscopic Latarjet procedure in patients with complex anterior shoulder instability. **Methods:** Between 2010 and 2014, 83 patients underwent an arthroscopic Latarjet procedure for recurrent post-traumatic anterior instability. The group's mean age was 28 ± 10 years and consisted of 76 (92%) male patients. A "problem" was defined as an unanticipated perioperative event that was not likely to affect the patient's final outcome. A "complication" was defined as an event that was likely to negatively affect outcome. **Results:** At a mean follow-up of 17 months (range, 3 to 43 months), 20 (24%) patients sustained either a problem and/or a complication. The problem rate was 18% and the complication rate was 10%. The most commonly encountered adverse event was intraoperative fracture of the coracoid graft, which occurred in 6 patients (7%). In addition, 1 arthroscopic case was intraoperatively converted to open and 1 patient sustained a transient axillary nerve injury. A total of 7 cases underwent secondary operative procedures. The rate of problems and/or complications in primary cases was not significantly different than revision cases ($P = .335$). **Conclusions:** The rate of adverse events reported in this arthroscopic series is not insignificant and is similar to that reported with the traditional open Latarjet. With appropriate training, the arthroscopic Latarjet procedure can be effective for the management of patients with complex shoulder instability. **Level of Evidence:** Level IV, therapeutic case series.

See commentary on page 1971

The Latarjet procedure is a surgical treatment option for patients with anterior shoulder instability.[1] The procedure involves transfer of the horizontal pillar of the coracoid and the adjoining conjoined tendon to the anterior glenoid. The effectiveness of the procedure in stabilizing the shoulder is theorized to be due to several factors, including the sling effect, bone reconstitution, and by tethering the inferior subscapularis muscle.[2-6]

When transferring the coracoid process, the proximity of the adjacent neurovascular structures may increase the likelihood of intraoperative or postoperative complications. Young and Rockwood in 1991[7] reported complications associated with the Bristow procedure, which involves transfer of the coracoid tip to the anterior glenoid vault with single-screw fixation. The complications encountered included recurrent anterior shoulder instability, nonunion, intra-articular hardware, and neurovascular injury. Allain et al.[2] reported the long-term results of the Latarjet procedure in 95 patients and found a 7% complication rate. The complications included infection, postoperative stiffness, and humeral fracture after manipulation. Burkhart et al.[8] reported a complication rate of 5% that included nonunions, loose screws, and hematomas. Recently, Shah et al.[9] conducted a comprehensive assessment of complications associated with the open Latarjet procedure performed in North American. Anecdotally, the North American indications for the Latarjet procedure typically include more complex cases with bone loss, revision procedures, or more extensive soft tissue deficiencies. Correspondingly, the complication rate of the open Latarjet procedure reported by Shah et al.[9] was much higher at 25%.

From the Roth|McFarlane Hand and Upper Limb Center, St. Joseph's Health Care, Western University, London, Ontario, Canada.

The authors report the following potential conflict of interest or source of funding: G.S.A. receives support from Depuy Synthes, Tornier, Imascap, and Smith & Nephew. He has grants from NIH, CIHR, and PSI and also patents pending related to arthroplasty. R.M. receives support from Depuy-Synthes. C.G. receives support from Zimmer, Mitek, and Cayenne Medical. D.W. receives support from Depuy Mitek, Johnson & Johnson, and Zimmer. P.F. receives support from Mitek Sports Medicine, Depuy Synthes, Calderhead, Lockmeyer and Peschke, and Kalur law firm.

Received September 2, 2015; accepted February 22, 2016.

Address correspondence to George S. Athwal, M.D., F.R.C.S.C., Western University, 268 Grosvenor Street, London, Ontario, Canada. E-mail: gathwal@uwo.ca

© 2016 by the Arthroscopy Association of North America

0749-8063/15839/$36.00

http://dx.doi.org/10.1016/j.arthro.2016.02.022

Traditionally, the Latarjet procedure has been performed as an open procedure through the deltopectoral interval. Recently, arthroscopic techniques for coracoid transfer have been described.[10-12] The purported advantages of the arthroscopic technique are improved graft positioning, less surgical dissection, and the identification of other associated intra-articular pathologies, such as labral and cuff lesions. Disadvantages of the arthroscopic technique are increased surgical time, and cost. In addition, the arthroscopic techniques have been regarded as technically challenging, and therefore, concerns have been raised with the surgical risks and the accompanying learning curve.[13-15] The purpose of this study was to report on the intraoperative and early postoperative (<3 months) problems and complications encountered with the arthroscopic Latarjet procedure in patients with complex anterior shoulder instability. Our hypothesis was that the complication rate with our arthroscopic Latarjet group would be similar to the reported rates with the open Latarjet procedure.

Methods

The arthroscopic Latarjet procedure was performed in 83 patients between January 2010 and January 2014 by 1 of 5 fellowship-trained shoulder or sports surgeons from 5 different medical centers in North America. The inclusion criteria for this multicenter prospective observational study included all patients indicated for an arthroscopic Latarjet procedure during the study period, irrespective of whether the surgery was converted intraoperatively to an open procedure. There were no exclusionary criteria. Institutional Research Board approvals were obtained for this study (Research Ethics Boards of Western University, the Jewish Hospital of Cincinnati, NYU School of Medicine, Thomas Jefferson University, and University of Colorado) and informed consent was obtained from patients.

The indication for selecting the Latarjet procedure for each individual patient was based on surgeon preference. In general, the 5 surgeons had similar indications for selecting the Latarjet procedure. Typically, primary patients who were indicated for the procedure had 1 or more of the following, greater than 20% anterior glenoid bone loss measured on a computed tomography (CT) scan or a medium to large engaging Hill-Sachs lesion viewed on a CT scan or assessed intraoperatively. In addition, patients with failed prior arthroscopic or open anterior stabilization were also indicated for the procedure.

Surgical Technique

The surgical technique for the all-arthroscopic Latarjet procedure was adapted from the technique published by Lafosse et al.[11,12] After a diagnostic arthroscopy and confirmation that an arthroscopic Latarjet is indicated, the procedure was initiated. The anterior glenoid vault was debrided and the remnants of the anterior capsulolabral complex were resected. The camera is placed into an accessory anterolateral portal that enters the glenohumeral joint through the lateral aspect of the rotator interval, and the superficial, lateral, and inferior aspects of the coracoid are exposed. In addition, the axillary nerve and the nerves to the subscapularis are identified and protected. A subscapularis musculotendinous split is conducted between the upper two-thirds and lower one-third, lateral to the axillary nerve. An accessory working portal, termed the inferior portal, can be used to conduct the split.[16,17] Following completion of the subscapularis split, the coracoid is prepared. The pectoralis minor is released and the musculocutaneous nerve may be identified. Then, through a superior coracoid portal, the drill holes in the coracoid for eventual screw fixation are placed using a guide and cannulated drill system. Before coracoid osteotomy, a transpectoralis major medial portal is made. Through this medial portal a coracoid positioning guide is inserted that will grasp the coracoid once it is osteotomized.

The osteotomized coracoid graft is then secured to the positioning guide brought in through the medial portal. The undersurface of the graft is prepared with a burr to match the anterior glenoid surface. The coracoid is then transferred through the subscapularis spit and positioned on the glenoid vault between the 2 and 5 o'clock positions. The graft is typically placed flush with the subarticular bone, medial to the articular surface. The coracoid is secured to the glenoid with two 3.5-mm screws from a cannulated coracoid-specific system (Depuy Mitek, Raynham, MA). Postoperatively, patients were immobilized in a sling for comfort for 2 to 6 weeks depending on surgeon preference and started early active range of motion between 2 and 4 weeks postoperatively.

Clinical Assessment

Adverse events intraoperatively or within the first 3 months postoperatively were divided into "problems" and "complications."[18] A "problem" was defined as an unanticipated perioperative event that was not likely to affect the patient's final outcome. A "complication" was defined as an event that was likely to negatively affect outcome.

All patients were followed with clinical visits and radiographs at 2, 6, and 12 weeks for this study. An adverse event checklist was used to identify incidents.

The Fisher exact test was used for categorical variables and the paired and unpaired *t*-tests for continuous variables. Statistical significance was set at $P < .05$. For the assessment of age on the rate of complications, the group was divided in half based on chronological age and then compared. To determine the effect of the

Table 1. Adverse Events Identified in the Present Arthroscopic Series Compared With Shah et al. and Griesser et al.

	Complication (Bold)/Problem (Italics)	Present Study, %	Shah et al.,[9] %	Griesser et al.,[19] %
Intraoperative	Graft fracture	7	0	1.5
	No sequela (healed without issue)	5		N/R
	Delayed failure	2		N/R
	Nerve laceration	0	0	N/R
	Intra-articular screw placement	0	0	N/R
	Subscapularis rupture	0	0	0.6
	Excessive fluid extravasation	1	N/A	N/R
	Vascular injury	1*	0	0.05
	Single-screw fixation	6	0	N/R
	Inability to complete surgery arthroscopically	1	N/A	0.3
	Instrumentation problems (bent or fractured wires)	2	N/R	N/R
Postoperative	**Early recurrent instability**	4	8	2.9†/5.8‡
	Screw backout/bending/failure	3	N/R	N/R
	Nerve injury	1	10	1.6
	Infection	1	6	1.3
	Nonunion	1	17	9.4
	Intra-articular screw placement	0	N/R	N/R
	Axillary artery pseudoaneurysm	0	0	0.3
	Hardware removal surgery	4	N/R	2.4
	Hematoma	0	N/R	0.5

NOTE. In the present study, the events are classified as "complications" (bold) when they adversely affect patient outcome. The events are classified as "problems" (italics) when they did not affect overall patient outcome.

N/A, not applicable; N/R, not reported.

*Cephalic vein injury suture ligated classified as problem.

†Recurrent dislocation rate.

‡Recurrent subluxation rate.

surgeon's learning curve on surgical times, problems, and complications, each surgeon's group of patients was chronologically divided in half, and the early group was compared with the recent group.

Results

The mean age of the arthroscopic Latarjet study group was 28 ± 10 years and consisted of 76 (92%) male patients and 7 female patients (8%). The mean age of the male patients was 27 ± 9 years and the mean age of the female patients was significantly more, 37 ± 14 years ($P = .01$). The mean body mass index for the study group was 26 (range, 18 to 41). In 54 patients (65%), the arthroscopic procedure was conducted on the dominant extremity (49 right sided and 5 left sided). In 42 patients (51%), the arthroscopic Latarjet procedure was the index surgery for management of their shoulder instability. In 41 patients (49%), the arthroscopic Latarjet procedure was a revision surgery for a failed prior arthroscopic stabilization (38 patients) or for a failed prior open soft tissue stabilization (5 patients). The mean number of procedures the revision group had undergone before the arthroscopic Latarjet surgery was 1.3 ± 0.5 (range, 1 to 3 surgeries).

At a mean follow-up of 17 months (range, 3 to 43 months), 20 (24%) patients sustained either a problem and/or a complication (Table 1). The rate of problems was 18% and the rate of complications was 10%. The most commonly encountered adverse event was intraoperative fracture of the coracoid graft, which occurred in 6 patients (7%) (Fig 1). Of these 6 patients with an intraoperative fracture, 3 were deemed to have enough bony stability and were left as is, 2 patients were secured with a single-screw only, and 1 patient had placement of another screw to enhance fixation. Four of these patients went on to healing without complication, and therefore, were classified as problems. Two of these 6 patients (1 patient with 2-screw fixation and 1 with single-screw fixation), unfortunately, went on to early graft displacement with failure and required revision to bone block procedures. These 2 patients were classified as complications. The second most frequent adverse event was the inability to place 2 screws into the coracoid graft resulting in single-screw fixation in 5 cases (6%) (Fig 2). In these 5 cases, all healed without complication and were therefore classified as problems.

Overall, only 1 case (1%) was intraoperatively converted to open. In this case, during arthroscopic pinning of the graft with the guide wires, one wire broke. Although an attempt was made to continue arthroscopically, removal of the broken guide wire was not possible, and therefore the cases were converted to an open technique. As no further complications were encountered in this patient, the adverse event was classified as a problem. In total, 2 neurovascular injuries occurred (2%). One patient (1%) sustained a transient axillary nerve injury (complication), which completely

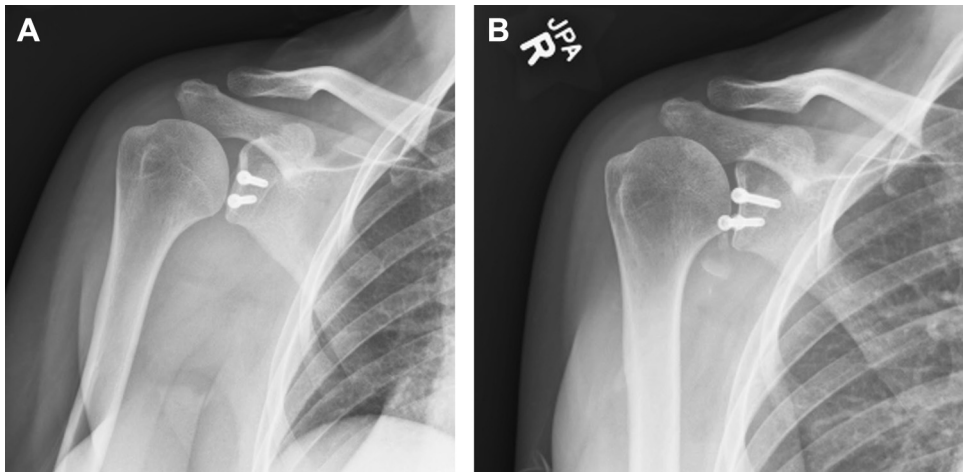

Fig 1. (A) An immediate postoperative right anteroposterior radiograph of a patient who sustained an intraoperative fracture of the coracoid graft during an arthroscopic Latarjet procedure. The fractured graft was deemed to be stable intraoperatively. Unfortunately, at 5 weeks postoperatively, the patient was putting on a backpack when she experienced a popping sensation in the shoulder. (B) Follow-up radiographs of the right shoulder at 6 weeks show displacement of the inferior half of the coracoid graft and failure of the inferior screw and/or washer construct.

recovered at 6 months. Another patient sustained a laceration to the cephalic vein during creation of the inferior arthroscopic portal. The portal was expanded and the cephalic vein was suture ligated without further complication; as such, this adverse event was classified as a problem.

A total of 7 cases underwent secondary procedures all classified as complications: 3 for hardware removal (4%), 1 irrigation and debridement for deep infection (1%), and 3 for early recurrent instability requiring revision open structural bone grafting (4%).

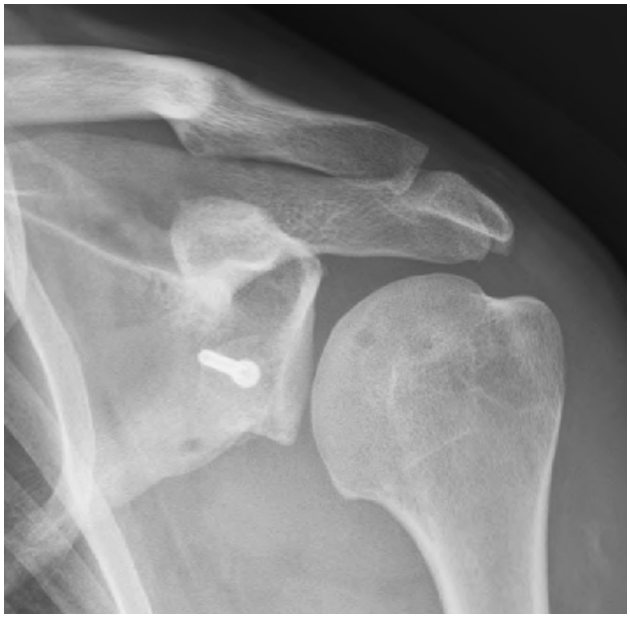

Fig 2. An anteroposterior radiograph of a left shoulder showing single-screw fixation of an arthroscopic Latarjet procedure.

The rate of adverse events (problems and complications) in primary arthroscopic Latarjet cases was not significantly different than those encountered during revision cases ($P = .335$). In addition, the assessment of patient age concluded that older patients did not have a significantly greater occurrence of adverse events as compared with younger patients ($P = .771$). Finally, to assess the effect of a learning curve on surgical times and adverse events, each surgeon's arthroscopic Latarjet patient group was chronologically divided in half, and the first group of patients was compared with the recent group of patients. The mean operative time for the early group of patients (n = 42; 156 ± 29 minutes) was significantly greater ($P = .009$) than that of the most recent group (n = 41; 139 ± 30 minutes). Interestingly, there was no significant difference ($P = .238$) in the rate of adverse events (problems and/or complications) when comparing the early with the late groups of patients.

Discussion

The overall adverse event rate in our study was 24%. This is not insignificant and indicates the complexity of the Latarjet procedure and the technical aspects of conducting it arthroscopically. When dividing our adverse events into problems and complications, our rates were 18% and 10%, respectively. Our overall adverse event rate is similar to that recently reported by Shah et al.[9] (25%) in their open Latarjet series. Our 2 studies can be objectively compared for several reasons. Both represent similar patients with similar indications for surgery and both are from North American centers. In most cases, North American indications for the Latarjet procedure involve substantial bone loss and/or

Table 2. Surgeon Data

Surgeon	Year Started Practice	First Year of Procedure	No. of Procedures Performed During Study Period	No. of Patients Affected by Adverse Event(s)
#1	2000	2011	28	9
#2	2005	2012	24	1
#3	1992	2010	16	5
#4	2004	2013	2	1
#5	1994	2011	13	4

failure of a prior stabilization procedure. This is in contrast to some European literature, where the Latarjet procedure is routinely recommended as a primary procedure, even in patients without bone loss.[20] As such, it is speculated that the adverse event rate would be higher in a more complex patient group that involves greater degrees of bone loss and a higher frequency of revision cases. In addition to the similarities, our studies also have several differences. Shah et al.[9] included patients with a minimum follow-up of 6 months, but also patients with longer term follow-up. As such, the authors were able to identify recurrences, which will also likely occur in our group with longer follow-up. Also, Shah et al.[9] were able to obtain postoperative CT scans on 60% of their group, which identified a 28% rate of delayed union, fibrous union or nonunion (8 patients). Five of 8 patients in the fibrous union group were asymptomatic; therefore, the authors did not count them as a complication because the nonunion was not believed to affect patient outcome.[9]

Griesser et al.[19] conducted a systematic review on the complications and reoperations associated with the Bristow-Latarjet procedure. In their review, they analyzed 45 studies with a total of 1904 procedures. The overall complication rate reported was 30%, which is very similar to our adverse event rate of 24%. Among the 1904 procedures, more than 90% were conducted open with 9.3% done all-arthroscopically. The authors did compare the open with the all-arthroscopic technique and found no statistically significant differences in coracoid nonunion, but did report a significantly lower rate of reoperations in the all-arthroscopic group. Interestingly, the overall rate of unplanned reoperations in the systematic review was 7%, which is similar to our rate of 8% with the all-arthroscopic procedure.

Butt and Charalambous[21] conducted a systematic review of coracoid transfers done arthroscopically. The authors analyzed 3 European studies, 1 study used interference screw fixation, another used the Bristow technique, and the last used a technique similar to our series. The overall complication rate reported in the systematic review was 19.8% in 172 procedures, which is similar to our problem rate of 18% and complication rate of 10%.

The reported rate of neurologic injury after coracoid transfer ranges from 2% to 10%.[9,19,20,22-24] In the literature, the most frequently involved nerve is the musculocutaneous nerve. In the series by Shah et al.,[9] 5 of 48 (10%) patients sustained a nerve injury, with 2 involving the musculocutaneous, 2 axillary, and 1 radial nerve. In our series, 1 patient (1%) sustained an axillary nerve injury, which resolved completely at 6-month follow-up.

In our series, the most common adverse event was intraoperative fracture of the coracoid graft, which occurred in 6 patients (7%). We believe that this complication is likely attributed to the arthroscopic technique. The coracoid graft undersurface once osteotomized is typically concave, and should be contoured to match the anterior glenoid vault. If the surfaces are not reciprocally matched, the compression screws will impart a bending moment on the graft, which we believe led to the graft fractures identified in this study. The graft fractures typically occurred between the 2 holes in the coracoid. In addition, we believe that this complication is preventable with good preparation of the undersurface of the graft to match the glenoid surface.

Overall, the second most commonly encountered adverse event was an inability to place 2 screws in the graft arthroscopically (5 patients, 6%), and therefore only single-screw fixation was used. This adverse event, more likely than not, can directly be attributed to the all-arthroscopic nature of the procedure. Because the procedure is technically challenging, it is most probable that poor drill hole positioning in the graft or poor graft positioning on the glenoid lead to an inability to place a second screw. This problem of single-screw fixation would likely not have occurred if these procedures were done using the open technique.

All surgeons in this particular study respected the technically challenging nature of this procedure and are experienced arthroscopists (Table 2). Each surgeon only conducted this procedure after participating in a surgical observership with a surgeon experienced with the arthroscopic Latarjet. The fact that surgeons were specifically trained in this procedure is important and is a strength. Additional strengths of this study include the multicenter design and the prospective nature.

Anecdotally, the arthroscopic Latarjet procedure has been described as having a steep learning curve. Castricini et al.[13] reviewed their initial results of 30 patients undergoing the arthroscopic Latarjet procedure to assess the learning curve. When comparing the first 15 patients with the last 15 patients, the authors found no statistically significant differences in the rate of complications. This finding is similar to our results, in that no statistically significant differences were found in our patients when comparing the first half with the last half of the group. Interestingly, Castricini et al.[13] did

report that all of their complications correlated with age of the patient more than 40 years. Our results, however, are contrary to this finding, as we found no statistically significant changes in the rate of complications when comparing the younger half of the group with the older. These differences in results may be due to the smaller sample size of Castricini et al. (30 patients), as our study group was almost 3 times larger (83 patients).

Limitations

The limitations of this study include the sample size and the short-term follow-up. In addition, we assessed only complications and problems, not functional outcomes. Finally, we did not conduct an a priori sample size calculation.

Conclusions

The rate of adverse events reported in this arthroscopic series is not insignificant and is similar to that reported with the traditional open Latarjet. With appropriate training, the arthroscopic Latarjet procedure can be effective for the management of patients with complex shoulder instability.

References

1. Latarjet M. Treatment of recurrent dislocation of the shoulder. *Lyon Chir* 1954;49:994-997.
2. 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.
3. Boileau P, Mercier N, Roussanne Y, Thelu CE, Old J. Arthroscopic Bankart-Bristow-Latarjet procedure: The development and early results of a safe and reproducible technique. *Arthroscopy* 2010;26:1434-1450.
4. Giles JW, Boons HW, Elkinson I, et al. Does the dynamic sling effect of the Latarjet procedure improve shoulder stability? A biomechanical evaluation. *J Shoulder Elbow Surg* 2013;22:821-827.
5. Yamamoto N, Muraki T, An KN, et al. The stabilizing mechanism of the Latarjet procedure: A cadaveric study. *J Bone Joint Surg Am* 2013;95:1390-1397.
6. Ghodadra N, Gupta A, Romeo AA, et al. Normalization of glenohumeral articular contact pressures after Latarjet or iliac crest bone-grafting. *J Bone Joint Surg Am* 2010;92:1478-1489.
7. Young DC, Rockwood CA Jr. Complications of a failed Bristow procedure and their management. *J Bone Joint Surg Am* 1991;73:969-981.
8. 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;23:1033-1041.
9. Shah AA, Butler RB, Romanowski J, Goel D, Karadagli D, Warner JJ. Short-term complications of the Latarjet procedure. *J Bone Joint Surg Am* 2012;94:495-501.
10. Boileau P, Thelu CE, Mercier N, et al. Arthroscopic Bristow-Latarjet combined with bankart repair restores shoulder stability in patients with glenoid bone loss. *Clin Orthop Relat Res* 2014;472:2413-2424.
11. Dumont GD, Fogerty S, Rosso C, Lafosse L. The arthroscopic Latarjet procedure for anterior shoulder instability: 5-Year minimum follow-up. *Am J Sports Med* 2014;42:2560-2566.
12. Rosso C, Bongiorno V, Samitier G, Dumont GD, Szollosy G, Lafosse L. Technical guide and tips on the all-arthroscopic Latarjet procedure. *Knee Surg Sports Traumatol Arthrosc* 2016;24:564-572.
13. Castricini R, De Benedetto M, Orlando N, Rocchi M, Zini R, Pirani P. Arthroscopic Latarjet procedure: Analysis of the learning curve. *Musculoskelet Surg* 2013;97:93-98 (suppl 1).
14. Sastre S, Peidro L, Mendez A, Calvo E. Suprascapular nerve palsy after arthroscopic Latarjet procedure: A case report and review of literature. *Knee Surg Sports Traumatol Arthrosc* 2016;24:601-603.
15. Gracitelli ME, Ferreira AA, Benegas E, Malavolta EA, Sunada EE, Assuncao JH. Arthroscopic Latarjet procedure: Safety evaluation in cadavers. *Acta Ortop Bras* 2013;21:139-143.
16. Lafosse L, Boyle S, Gutierrez-Aramberri M, Shah A, Meller R. Arthroscopic Latarjet procedure. *Orthop Clin North Am* 2010;41:393-405.
17. Lafosse L, Lejeune E, Bouchard A, Kakuda C, Gobezie R, Kochhar T. The arthroscopic Latarjet procedure for the treatment of anterior shoulder instability. *Arthroscopy* 2007;23:e1-e5.
18. Zumstein MA, Pinedo M, Old J, Boileau P. Problems, complications, reoperations, and revisions in reverse total shoulder arthroplasty: A systematic review. *J Shoulder Elbow Surg* 2011;20:146-157.
19. Griesser MJ, Harris JD, McCoy BW, et al. Complications and re-operations after Bristow-Latarjet shoulder stabilization: A systematic review. *J Shoulder Elbow Surg* 2013;22:286-292.
20. 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;23:1691-1699.
21. Butt U, Charalambous CP. Arthroscopic coracoid transfer in the treatment of recurrent shoulder instability: A systematic review of early results. *Arthroscopy* 2013;29:774-779.
22. Boileau P, Bicknell RT, El Fegoun AB, Chuinard C. Arthroscopic Bristow procedure for anterior instability in shoulders with a stretched or deficient capsule: The "belt-and-suspenders" operative technique and preliminary results. *Arthroscopy* 2007;23:593-601.
23. Boileau P, Mercier N, Old J. Arthroscopic Bankart-Bristow-Latarjet (2B3) procedure: How to do it and tricks to make it easier and safe. *Orthop Clin North Am* 2010;41:381-392.
24. Lafosse L, Boyle S. Arthroscopic Latarjet procedure. *J Shoulder Elbow Surg* 2010;19:2-12 (suppl).