

# The arthroscopic Latarjet procedure: effective and safe

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Shoulder dislocation is the most popular dislocation of a major joint (1), which results in severe pain and possible complications such as fracture of the humerus, glenoid, injury to blood vessels or nerves (1). When the movement of the humeral head over the eroded surface of the glenoid is excessive and symptomatic, it is known as instability. Shoulder instability following dislocation is often seen in young people (1). Surgical intervention is necessary for the patients suffering from recurrent shoulder instability following the first episode of shoulder dislocation (1). Anterior shoulder instability (ASI) is the major direction of dislocation and also the most operated shoulder instability (1). The common surgical treatments of recurrent ASI include the Bankart procedure (open or arthroscopic), the Latarjet and the Bristow procedures (open or arthroscopic) (2). One of the major function outcomes after surgery is to evaluate recurrence of instability. A 20-year follow-up study in 68 Latarjet procedure-treated patients showed that the postoperative rate of recurrence was only 5.9%, which indicated that Latarjet procedures gave excellent long-term outcomes in the treatment of anterior glenohumeral instability (3). More recently, arthroscopic Bankart-Bristow-Latarjet procedures were performed in 47 patients with glenoid bone loss and capsular deficiency and the patients were followed up for average 16 months with the mean Rowe score as  $88 \pm 16.7$ , and the mean Walch-Duplay score as  $87.6 \pm 12.9$ ; this study illustrated that arthroscopic Latarjet procedure is a safe and reproducible technique (4). A larger scale study with 180 arthroscopic Latarjet procedures found that patient-reported outcomes have 91% excellent scores and 9% good at 26 months (5). However, the long term outcomes of arthroscopic Latarjet procedure have not been fully studied previously.

Lately, Dumont *et al.* published an article entitled “The Arthroscopic Latarjet Procedure for Anterior Shoulder Instability: 5-year Minimum Follow-up” in the American Journal of Sports Medicine to investigate the long term outcomes of arthroscopic Latarjet procedure (2). This retrospective study was done with patients of a senior surgeon from Alps Surgery Institute, Clinique Générale, Annecy, France and all patients had undergone an arthroscopic Latarjet procedure before June 1, 2008. The information about whether the patient had experienced any dislocations, subluxations, or further surgery to the shoulder since the index procedure were obtained by phone calls, postal mails, or emails. All the participating patients also answered the Western Ontario Shoulder Instability Index (WOSI) questionnaire. The WOSI is a disease-specific, validated, quality-of-life measurement tools for patients with shoulder instability, which has 21 questions in four domains: physical symptoms, sports/recreation/work, lifestyle, and emotions. This study done by Dumont *et al.* followed up 62 patients (64 shoulders) for mean 76.4 months (6.4 years), ranging from 61.2 to 100.7 months. The mean age at having the procedure was 29.4 years and median age was 27.1 with a range from 17.1 to 57.4 years. The mean and median overall numbers of instability events (dislocations plus subluxation) before surgery were 8.6 and 7, respectively. Seven patients had the procedure after only 1 dislocation but their mean number of subluxation was 10. Among the 64 patients, 12 (18.8%) had undergone prior arthroscopic Bankart repairs on the shoulder with instability; the mean and median time between two procedures were 4.34 and 3.82 years. The remaining 52 (81.2%) patients had the index arthroscopic Latarjet procedure as the primary surgical treatment for their unstable shoulder. Overall only 1 of 63 (1.59%) shoulders had recurrent instability

after the arthroscopic Latarjet procedure. Also, 58 of the 62 patients reported postoperative participation in sports such as 34 patients in skiing/snowboarding, 18 patients in running/track and 18 patients in bicycling/motocross, *et al.* The WOSI score was as 90.6%±9.4% (mean ± standard deviation). Each domain of WOSI also showed high scores as follows: physical symptom 90.1%±8.7%; sports/recreation/work 90.3%±12.9%; lifestyle 93.7%±9.8%; and emotions 88.7%±17.3%.

Therefore, this study provided excellent results about the long term effectiveness of arthroscopic Latarjet procedure in treatment of ASI. The rate of recurrent instability is very low as 1.59% and the WOSI quality-of-life measurement showed good scores for an average 6.4 years of follow-up. However, there are several limitations of this study. First of all, the procedures were done by one senior surgeon in one facility, so the reproducibility of this study need to be tested with other similar studies. Second, as a retrospective study the o potential selection bias might exist. Third, no clinical evidences to evaluate the actual function of the shoulder and the answers were subject to the bias from the patients. At last, the WOSI scores were only determined after procedure, so no information available about change of pre- and post-operative scores.

In operative treatment of anterior recurrent instability of the shoulder, the two main procedures are arthroscopic or open Bankart repair and the open Latarjet procedure (6). Their short and long term outcomes have been studied extensively. A meta-analysis done by Harris *et al.* with 26 studies (1,781 patients) and a minimum of 5 years' follow-up analyzed the long-term outcomes of arthroscopic and open Bankart repair (7). This analysis showed that the mean age of patients were 28 years with majority as male (81%). Most patients had unilateral dominant shoulder (61%) and the mean number of recurrent ASI prior surgery was 11 without significant glenoid bone loss. They found that the clinical follow-up time for arthroscopic repair is significantly shorter than that for open repair (9.1 *vs.* 13.1 years,  $P<0.001$ ); the recurrent dislocation rate was 11% for arthroscopic versus 8% for open procedures but the difference was not statistically significant ( $P=0.063$ ); the recurrent subluxation rates are 5% for both; the time of recurrent instability is 2.5 years for arthroscopic versus 3.7 years for open procedures ( $P<0.01$ ); rate of return to sport at pre-injury levels was 74% for arthroscopic versus 89% for open procedures ( $P<0.01$ ) (7). Another systematic study done by Bhatia *et al.* about open Latarjet procedure demonstrated good results of open Latarjet

procedure regarding recurrent instability (8). Among the ten studies included in this review, 5 of them showed none of recurrence with follow-up range from 6 months to 14.3 years; another two studies had 5% recurrence rate with mean follow-up as 21 months and 59 months; one study had 8% recurrence rate with follow-up range from 23 to 65 months (8). The 20-year follow-up study for open Latarjet procedure showed that the postoperative rate of recurrence was 5.9% (3). A recent study compared 93 patients undergoing open Latarjet procedures to 93 patients undergoing arthroscopic Bankart repairs and found that 10% (9 of 93) in the Latarjet group and 22% (20 of 93) in the Bankart group demonstrated recurrent instability ( $P=0.026$ ; odds ratio, 0.39; 95% CI, 0.17-0.91) over a mean 6-year followup (6). Therefore, they concluded that the open Latarjet procedure is superior to arthroscopic bankart repair regarding to shoulder stability (6).

Compared to arthroscopic or open Bankart repair and the open Latarjet procedure, the study done by Dumont *et al.* illustrated that the arthroscopic Latarjet procedure had a much lower rate of recurrent instability for long term. The arthroscopic Bankart repair was originally described by Morgan *et al.* in 1987 (9), while the arthroscopic Latarjet procedure was first described by Lafosse in 2007 (10). As a relative new procedure, the available clinical evidence regarding the long term outcomes of arthroscopic Latarjet procedure is still limited. However, considering the benefits of arthroscopic surgeries over open surgeries and the excellent results of the current study, arthroscopic Latarjet procedure could be a preferable procedure for recurrent ASI although more clinical studies are needed.

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