

CASE REPORT

Prominent Hardware Post Latarjet Mimicking Shoulder Instability Symptoms

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ABSTRACT

A 29-year-old man, who was a medical intern presented with history of recurrent shoulder dislocation. Radiographs and computed tomography imaging revealed a bony bankart lesion with glenoid bone loss of 25% with moderate Hill- Sachs lesion. Latarjet surgery was performed. At post-operative 8 months, the patient experienced pain and clicking in the left shoulder while performing cardiopulmonary resuscitation. At post-operative 1 year, magnetic resonance arthrography showed a united coracoid graft and intact posterior labrum. Left shoulder diagnostic arthroscopy and removal of Latarjet screws through a limited anterior deltopectoral approach were performed. The symptoms pain, clicking and instability sense was caused by either the prominent distal screw or the remnant suture material from the anchor which resulted in impingement of the infraspinatus muscle. We recommend the use of image intensifier to check on the position and length of the screw at the end of the surgery to avoid this complication.

Keywords: Shoulder, Latarjet, Coracoid, Instability, Complication

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INTRODUCTION

Latarjet surgery has been successful in treating shoulder dislocations with the correct indications. The Latarjet-Patte procedure produces the triple blocking effect (1). The success of the intervention depends on the effect of the conjoint tendon acting as a sling on the inferior subscapularis and anteroinferior capsule when the arm is abducted and externally rotated (1). It also increases or restores the glenoid anteroposterior diameter and further stabilises the joint by repairing the capsule to the stump of the coracoacromial ligament. (1) Mizuno et al found a recurrence rate of 5.9% at a mean follow up of 20 years after 68 Latarjet procedures (2). While it is a successful surgery, we wish to report a case of one of its complications which can occur despite successfully treating the instability.

CASE REPORT

A 29-year-old man, who was a medical intern presented to our department with history of recurrent shoulder dislocation of more than 20 times. He first dislocated his left shoulder in 2005 during a rugby game. He then had magnetic resonance arthrography (MRA) (Fig. 1) done and was noted to have a Bankart lesion in which

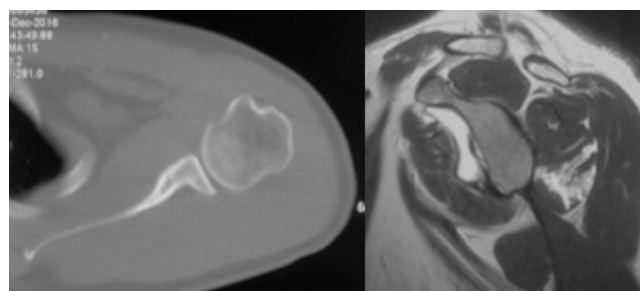


Figure 1: Preoperative computed tomography (axial view) and magnetic resonance arthrography (sagittal view)

surgery was suggested but was declined as he wished to complete his studies prior to any surgical intervention. His shoulder did not bother him again till 2017 when he started having increased frequency of dislocation and worsened to the stage where he even experienced dislocation during sleep. Physical examination showed wasting of the left shoulder with positive apprehension and relocation tests. Beighton score was negative for hyperlaxity. Radiographs and computed tomography (CT) (Fig. 2) imaging revealed a bony bankart lesion with severe glenoid bone loss of around 25% with moderate Hill- Sachs lesion. The patient was counselled for Latarjet surgery. Intra-operatively, the left shoulder was subluxable. Bone loss was found to be more than 25% antero-inferiorly from 6 to 9 o'clock position on the left shoulder glenoid surface. Once patient had been anaesthetized, patient was cleaned and draped in a supine position. A limited anterior deltopectoral approach was used. The coracoacromial ligament was

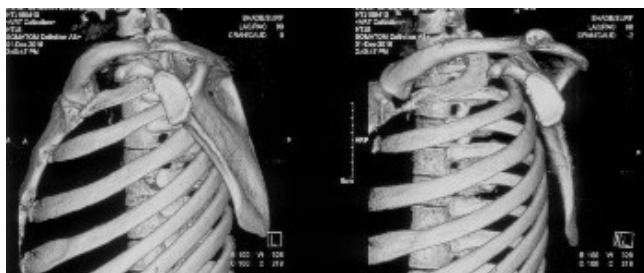


Figure 2: CT scan of the glenoid, pre-Latarjet

incised from the lateral aspect and the pectoralis minor was incised from the medial aspect exposing a coracoid length of 20mm. The coracoid was then cut with a sagittal saw and completed with a straight osteotome. A transverse tenotomy of the upper two thirds and the lower third of the subscapularis muscle was followed by a transverse capsulotomy. This was followed by dissection of the labrum from the glenoid. The anterior glenoid surface and the inferior surface of coracoid was then prepared to bleeding cancellous bone. Two suture anchors were then placed at the 9 o'clock (equator) and the 7.30 o'clock position and the capsule labral complex was prepared. The coracoid bone piece was then drilled with a 3.5mm drill. Lag screw principle was applied where the glenoid was then drilled with a 2.7mm drill till the posterior glenoid cortex. The coracoid with its attached tendons was passed through the tenotomised subscapularis and apposed to the anterior glenoid surface which has been prepared earlier. The coracoid was positioned ensuring that it was congruent with the articular surface and below the equator of the glenoid. It was then fixed with two AO 3.5mm cortical screw with washer. The capsule was repaired to the coraco-acromial ligament. The subscapularis tenotomy was repaired. The surgical wound was then closed in layers and the shoulder was placed in an arm sling postoperatively.

He was well till post-operative 8 months when the patient experienced severe pain and clicking in the left shoulder while performing cardiopulmonary resuscitation. However, he did not experience dislocation of the shoulder. Physical examination revealed pain and recurrence of instability sense on apprehension test. The radiographs (Fig. 3) showed that the screws were intact with no failure of the coracoid graft although the inferior screw was a little long posteriorly. Further rehabilitation failed to abate his



Figure 3: Preoperative radiographs in the anteroposterior and lateral projections

symptoms and his activities of daily living as an intern was affected. At post-operative 10 months, the CT scan revealed that the coracoid graft was healing well with no signs of non-union or screw loosening but revealed a significant prominence of the inferior screw. At post-operative 1 year, MRA was done which showed a united coracoid graft and intact posterior labrum. Left shoulder diagnostic arthroscopy and removal of Latarjet screws through a limited anterior deltopectoral approach were performed. Arthroscopy (Fig. 4) revealed united coracoid graft with near-normal reconstitution of the glenoid surface and a 'sling-like' structure which was seen reinforcing the antero-inferior aspect of the joint capsule, presumably the conjoint tendon which was 'extra-capsulated' during the index Latarjet procedure. Even though the repaired capsule was actually detached from the native glenoid, the shoulder was still stable in abduction and external rotation (ABER) position. There was suture remnant noted from the anchor, inserted during the index procedure, and this was removed. The prominent distal screw was also removed together with the proximal screw as the graft had healed completely to the native glenoid. The shoulder was stable on ABER under GA with no engagement of the large Hill-Sachs. Post operative, the patient was pain free and the clicking resolved. All instability tests were negative. At 8 months post-operative, the patient was able to go back to his activities with no interference.

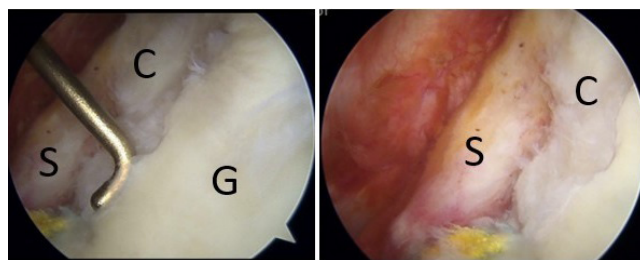


Figure 3: Arthroscopy of the left shoulder, done in a beach-chair position; showing the united coracoid graft (C), glenoid surface (G) and the conjoint tendon sling (S) when viewed from the posterior portal

DISCUSSION

There are various reported complications that can occur with Latarjet. Care has to be taken to avoid the possible complications. In our case, the recurrence of symptoms mimicking instability was caused by either the prominent distal screw or the remnant suture material from the anchor. Meyer et al mentioned that inaccurate positioning of the coracoid graft was one of the main complication of Latarjet surgery (3). Maqueira et al reported that if the screws were directed too medially towards the spinoglenoid notch, they could injure the suprascapular nerve (4). In our case, the coracoid bone graft and the screws were placed precisely. However, the inferior screw was prominent which resulted in impingement of the infraspinatus muscle. A good purchase of the bone is needed upon exiting the far cortex of the glenoid in order for a secure fixation of the bone graft. However,

the screw should protrude 2mm beyond the far cortex in accordance to the lag screw principle and not more. Prominent screws could lead to pain and discomfort despite avoiding all the major complications. This may necessitate a revision surgery for removal despite successfully treating the instability. Another learning point from this case is the incorporation of the coracoid graft with substitution of the lateral coracoid surface by cartilage-like tissue. This observation will need further evaluation and investigation.

Hardware removal is uncommon. Griesser et al. found that 46 shoulders needed hardware removal out of 1904 shoulders due to various reasons (5). In order to avoid this complication and reoperation, the usage of image intensifier to check on the position and length of the screw at the end of the surgery is highly recommended.

CONCLUSION

Latarjet surgery is a successful surgery if done correctly. However, it has its share of possible complications. While we have managed to avoid most of the complications, a prominent screw can lead to pain and discomfort post-surgery. Therefore, we recommend the use of image intensifier to check on the position and length of the screw at the end of the surgery to avoid this complication which may necessitate another surgery for removal despite successfully treating the instability. Careful evaluation is needed in cases where recurrence

of symptoms occurs after Latarjet procedure to confirm the cause in order for appropriate treatment to be carried out.

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