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Case Report

A combination of Latarjet and Remplissage for treatment of severe glenohumeral instability and bone loss. A case report

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ARTICLE INFO

Article history:

Received 11 February 2012

Accepted 1 January 2013

Available online 28 February 2013

Keywords:

Latarjet

Remplissage

Shoulder instability

ABSTRACT

Recurrent glenohumeral instability is challenging to treat when large bony defects are present in the anterior glenoid and there is a large Hill–Sachs lesion. We present a case with extensive glenoid and humeral bone loss treated with open Latarjet procedure combined with posterior arthroscopic Remplissage. 3.5 years after surgery, there have been no dislocations or any subjective signs of instability. After half a year, the patient was able to return to work as an airline pilot. Constant score has improved from 33 to 74 and the Oxford instability score from 8 to 46. We find that in young patients with difficult instability combining the Latarjet and Remplissage is a good and replicable method.

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1. Introduction

Recurrent glenohumeral instability is challenging to treat when large bony defects are present in the anterior glenoid and there is a large Hill–Sachs lesion. We present a case with extensive glenoid and humeral bone loss treated with open Latarjet procedure combined with posterior arthroscopic Remplissage.

At the time of operation the patient was 32 years old, a healthy physically fit male who sustained his first glenohumeral dislocation of the left shoulder 12 years before in a skiing accident. The initial treatment was conservative. The shoulder became increasingly unstable and frequent dislocations occurred with only minor external force. The patient estimated that more than one hundred dislocations had occurred in the left shoulder.

The patient worked as an airline pilot. The grave instability made it virtually impossible to reach the upper controls of an

airliner. The dislocations were usually not painful and the patient was able to relocate the shoulder by himself.

2. The preoperative findings

In clinical examination the shoulder was unstable in the anterior direction. The apprehension test resulted in subluxation which the patient instantly relocated by himself. The Constant score was 33 and the Oxford instability score 8. MRI and CT scans showed a large anterior bony glenoid lesion with a large engaging Hill–Sachs lesion. Early signs of arthrosis were seen in the inferior part of the glenoid. The form of the glenoid was the kind which Burkhart et al have described as a *banana glenoid* (Fig. 1).^{1,2}

The Latarjet procedure was chosen to control the anterior instability because of the sling effect of the conjoined tendon.

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Fig. 1 – 3D CT scan: “banana shaped” glenoid. It is obvious that a bone transplant is needed for the glenoid reconstruction.

A concomitant arthroscopic Remplissage was done to neutralize the engaging Hill–Sachs lesion.³

3. The operation

The patient was placed in a beach chair position. The operation was started with arthroscopy using a standard posterior portal and an anterior working portal. The anterior labrum was nonexistent and the anterior glenoid defect and the Hill–Sachs lesion engaged very easily leading to dislocation (Fig. 2). The anterior glenoid was debrided and leveled for the Latarjet procedure. The Hill–Sachs lesion was debrided to get a bleeding surface. Two double loaded titanium suture anchors were inserted into the bottom of the Hill–Sachs lesion and the sutures were passed through the posterior capsule and the infraspinatus tendon. The knots were left untied at

Fig. 2 – Arthroscopic view of the easily engaging bony glenoid and humeral defects arrows.

this point. The open Latarjet procedure was performed according to the technique described by Bradley and Walch.⁴ The coracoid transfer was fixed to the anterior glenoid with two 35 mm cancellous screws. When the Latarjet procedure was completed, the sutures of the two anchors placed in the Hill–Sachs defect were tied on the dorsal capsule.

The patient used a sling for 4 weeks after surgery. Light rotatory movements in the limits of pain were allowed. At 4 weeks rehabilitation was started. The operation was performed in April 2009 and the patient returned to work as an airline pilot in October 2009. The aviation officials and physicians checked the status of the patient at this point and agreed that it was safe for him to return to work.

4. Results

3.5 years after surgery, no dislocations or any subjective signs of instability have occurred. The arthrotic changes of the glenohumeral joint are similar as in the postoperative X-ray (Fig. 3).

In the clinical examination no instability can be demonstrated. The abduction is 135° and external rotation 70°. In internal rotation the patient is able to bring his arm behind his back up to the level of the L2 vertebra. Forward flexion is 170°. The patient is able to bring his hand behind the head, elbow back (Fig. 4). Despite of these limitations, the patient is now fully capable to work as an airline pilot. After 42 months of follow-up the Constant score has improved from 33 to 74 and the Oxford instability score from 8 to 46.

5. Discussion

It was clear that a conventional arthroscopic anterior soft tissue repair would not be sufficient to stabilize the shoulder due to the large bony defects in our patient. Among the options was to reconstruct the glenoid with autologous bone transfer from the iliac crest or allogeneous bone graft.^{5,6} A bone graft would fill the defect in front of the glenoid but it would have not given the functional support as the Latarjet procedure with its conjoined tendon sling.⁷

Fig. 3 – The postoperative X-ray. Note the small osteophyte in the inferior edge of the humerus.

Fig. 4 – The patient can easily put his arm behind the head elbow back.

The focus of the treatment was to reconstruct a stable shoulder while compromising the range of motion and function as little as possible. The Latarjet provides anterior stability and the Remplissage neutralizes the dorsal humeral engaging defect.⁸

The stability of the shoulder has been achieved successfully – both subjectively and objectively. The only limitation is the relative loss of range of motion in abduction and external rotation while the upper extremity is in abduction. Fixing of the infraspinatus tendon in the large Hill–Sachs lesion may induce loss of abduction and external rotation.⁹ The patient is pleased with the outcome and accepts these minor limitations in the range of motion as he finally has a stable shoulder.

Decision making in cases like this, is not easy and several alternatives exist. New techniques are constantly emerging. For example, Dewing et al have just recently published a capsular reconstruction technique with a free soft tissue graft.¹⁰ We find that in young patients with difficult instability combining the Latarjet and Remplissage is a good and replicable method.

Conflicts of interest

All authors have none to declare.

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