

# **Operative management of shoulder instability**

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The operative management of shoulder instability is constantly under evolution. New techniques and new approaches of the pathology of instability may lead to more specific treatment designed for the individual with respect to pathology and sports specific demands.

## **Indications for operative treatment and preoperative considerations**

Indications are widely individual, but some trends can be extracted from the literature.

Indications for surgery should consider several factors:

- Age of the patient – the younger the patient – the higher the risk of recurrence without operation. One exception is teenagers with atraumatic instability where non-operative treatment should be encouraged for as long as possible
- The rate of dislocations. The more common, the higher risk of severe structural pathology and the less likely of success of non-operative treatment
- The patient's activity demands – the higher the risk of collision involving the arm the more likely to chose operation. Collision athletes have at least a three times higher risk of recurrence.
- Overhead throwing athletes may have a lower risk of redislocation but at the same time there is a high demand for a stable glenohumeral joint with normal range of motion

## **Key points of the treatment strategy**

- The patient's age and activity demands
- Clinical decision must be based on a thorough clinical evaluation including MR arthrography and CT scanning with 3D reconstruction
- In-season timing should be discussed with the athlete, the physiotherapist and the coach/parents
- The treatment should be planned in a way that the risk of recurrence and possible new aggravated pathology is avoided, and the treatment course matches the sports requirements of the athlete

- In throwers, any dysfunction that may prolong rehabilitation or may be necessary to correct in order to avoid recurrence must be assessed
- Kinetic chain analysis, muscular weakness and scapula dysfunction.

### **Arthroscopic Bankart**

Arthroscopic treatment of glenohumeral instability has been an established surgical option for more than 25 years. Primary reports showed unacceptably high failure rates. With increasing evolution of techniques, implant strength, suture quality, and proper patient selection, the results are more promising. Arthroscopy has advantages over open repair in more easily detecting and addressing associated lesions (SLAP, PASTA etc.) and more rare lesions like HAGL.

Before arthroscopic repair is planned a number of factors should be taken into consideration:

- The age of the patient (under 25 is a high indicator of surgical repair)
- The activity level (participation in contact or throwing sports indicates repair)
- Associated lesions that affects outcome and function (cuff, SLAP)
- Inherent hypermobility (additional repair needed or longer rehabilitation)

Patients well-matched for arthroscopic repair are young, active first time dislocators, or patients with few recurrent dislocations and no severe glenoid bone loss (< 20%), acute bony Bankart lesions, presence of a HAGL-lesion. In multidirectional unstable shoulders (MDI), arthroscopic capsular plication or capsular-labral reconstruction results in good outcome in those patients where there is no progression after intensive physiotherapeutic training emphasizing scapular function. The postoperative courses after MDI surgery may run up to one year before an acceptable result has been obtained.

### **Surgical choices**

There seem to be a least four different groups to consider for treatment

1. Simple unidirectional anterior instability – arthroscopic Bankart
2. Instability with significant glenoid or bipolar bone loss
  - a. Bone block procedure (Latarjet or Edin Hybinette, J-span and others). In high-level collision athletes, the trend lean more towards a primary Latarjet procedure due to the increased risk of a new high impact trauma even in the absence of bone loss

3. Isolated Hill-Sachs and a Bankart/ALPSA lesion – Bankart repair and Reimplissage
4. Multidirectional instability and isolated posterior instability – arthroscopic capsulolabral plication

### **Postoperative treatment**

Postoperatively the arm should be immobilised in a sling with or without abduction pillow. The length of immobilisation is depending on the quality of the tissue and the repair. Usually 3 weeks as a standard, and 6 weeks in cases of weak tissue, general hypermobility or a weak repair.

Early passive range of motion and isometric muscle training/activation with arms at the side is allowed the first postoperative day. Addressing scapular function in the rehabilitation is crucial. Increasing resistance exercise is allowed after six weeks and functional rehab from week 10-12. The time to resume normal sports activities depends on the sport. Contact and throwing sports can normally be resumed after 4-6 months. When the indication is right and the patient is compliant in restrictions and rehabilitation, the recurrence rate is lower than 10 %.

### **Prognosis – Arthroscopic Bankart**

***Cho et al. Arthroscopy 2006, Arthroscopic stabilization in anterior shoulder instability: collision athletes versus non-collision athletes:***

- Overall recurrence rate (17.2%)
- Noncollision group (6.7%)
- Collision group (28.6%)

### **Prognosis – Latarjet**

***Baverel et al. AJSM 2018: Open Latarjet Procedures Produce Better Outcomes in Competitive Athletes Compared With Recreational Athletes: A Clinical Comparative Study of 106 Athletes Aged Under 30 Years***

- 3/106 (2.8%) recurrence
- 12/106 (11 %) had apprehension

Paulion Pereira et al, Shoulder Elbow 2018: Are collision athletes at a higher risk of re-dislocation after an open Bristow-Latarjet procedure? A systematic review and meta-analysis

***Beranger, Hardy et al. Eur J Surg Orthop Traumatology 2016:***

***Anterior shoulder stabilization by Bristow-Latarjet procedure in athletes: return-to-sport and functional outcomes at minimum 2-year follow-up***

- All athletes returned to sports
- Overhead athletes were more likely to play at a lower level or to change sport postoperatively
- Collision athletes ***are not at higher risk for redislocation*** after Latarjet compared to noncollision athletes. Overall postoperative outcomes were good, although ***numerous complications occurred*** (0.8% to 19.2%)

### **Take home messages**

- Currently, it is well-documented in the literature that **high-level athletes involved in collision sports have a high risk of recurrence after a primary anterior glenohumeral dislocation**
- The choice of surgical procedure is based on correcting the pathology combined with an estimation of the sports specific risks of a new episode of instability
- Overhead athletes need full ER ROM
- Consider **Latarjet or other bony procedure** in all young collision athletes even without bone loss
- **Arthroscopic Bankart and plication** in throwers without contact
- **Arthroscopic Bankart and remplissage** in athletes with significant Hill-Sachs lesion (unipolar bone loss).