

Editorial Commentary: Hyperlaxity Is a Common Factor in Failed Arthroscopic Bankart Repair



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Abstract: Hyperlaxity is a common factor in failed arthroscopic Bankart repair. The best treatment for patients with instability, hyperlaxity, and minimal bone loss is still controversial. Patients with hyperlaxity often have subluxations rather than frank dislocation, and concurrent traumatic structural lesions are infrequent. Conventional arthroscopic Bankart repair with or without capsular shift poses a risk of recurrence because of soft tissue insufficiency. The Latarjet is not a good procedure in patients with hyperlaxity and instability, especially an inferior component, and risks include a higher degree of postoperative osteolysis after Latarjet with an intact glenoid. The arthroscopic Trillat procedure may be used to treat this challenging patient group by repositioning the coracoid medially and downward by a partial wedge osteotomy. The coracohumeral distance and shoulder arch angle are decreased after performing the Trillat, which may reduce instability, and the Trillat procedure mimics the sling effect of the Latarjet. However, complications should be considered due to the procedure's nonanatomic nature, such as osteoarthritis, subcoracoid impingement, and loss of motion. Other options to improve inferior stability include robust rotator interval closure, coracohumeral ligament reconstruction, and posteroinferior/inferior/anteroinferior capsular shift. The addition of posteroinferior capsular shift and rotator interval closure in the medial lateral direction also benefits this vulnerable patient group.

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The treatment of recurrent shoulder instability with hyperlaxity is challenging, especially for patients who do not have associated structural lesions with no or minimal glenoid bone loss. The authors Boileau, Clowez, Bouacida, Walch, Trojanu, and Schwartz of the article "The Arthroscopic Trillat Procedure is a Valuable Treatment Option for Recurrent Anterior Instability in Young Athletes with Shoulder Hyperlaxity"¹ should be congratulated for performing a retrospective evaluation

of the young patients with recurrent unidirectional anterior instability with associated shoulder hyperlaxity who underwent an arthroscopic Trillat procedure combined with anteroinferior capsular plication. Boileau et al.¹ showed that 90% of the shoulders were stable and 79% of the patients returned to their pre-injury activity level with an overall improvement of functional outcomes after surgery. Notably, the authors concluded that the arthroscopic Trillat procedure is effective for treating recurrent shoulder instability in young athletes with shoulder hyperlaxity without substantial bone loss.

The literature shows that hyperlaxity is a common factor in failed arthroscopic Bankart repair.²⁻⁴ Patients with hyperlaxity often have subluxations rather than frank dislocation, and concurrent traumatic structural lesions are infrequent. The authors also pointed out that the main arthroscopic findings in their study were a "loose shoulder" with anterior capsular redundancy and less than 10% of labral tears or a Hill-Sachs lesion. Therefore the treatment of choice is still controversial for patients with unidirectional instability with

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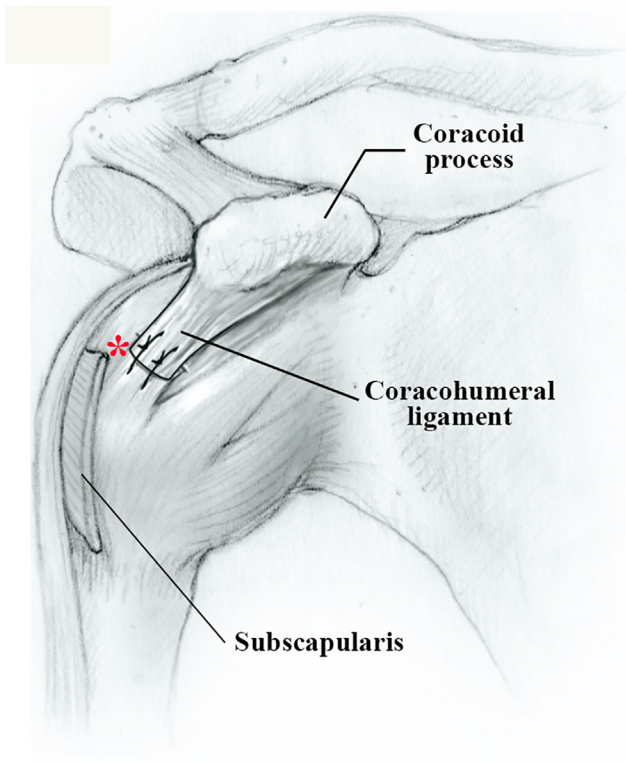


Fig 1. Drawing of the right shoulder shows open repair of the RI, and the CHL is imbricated by 1 cm (*) in the medial-to-lateral direction, with the arm in 30° of external rotation. RI, rotator interval; CHL, coracohumeral ligament.

hyperlaxity and no critical bone loss (glenoid or Hill-Sachs lesion). Conventional arthroscopic Bankart repair with or without capsular shift poses a risk of recurrence because of soft tissue insufficiency.⁴⁻⁶ Abdelhady et al.⁷ recommended the Latarjet procedure to treat patients with generalized hyperlaxity and showed improved functional outcomes and a very low recurrence rate. However, performing the Latarjet procedure in healthy glenoids may have some adverse events. In addition, Domos et al.⁸ has taught us that the Latarjet is not a good procedure in patients with hyperlaxity and instability, especially an inferior component. Hardy et al.⁹ demonstrated a higher degree of postoperative osteolysis in the Latarjet procedure with an intact glenoid, which could lead to postoperative pain because of excessive bone block remodeling.

Recently, the arthroscopic Trillat procedure is introduced to treat this challenging patient group, by repositioning the coracoid medially and downward by a partial wedge osteotomy.¹⁰⁻¹⁴ For the anatomical rationale, the coracohumeral distance and shoulder arch angle are decreased after performing the Trillat procedure, which may reduce the risk factor of shoulder instability.^{6,15,16} For the biomechanical rationale, the Trillat procedure mimics the sling effect

of the Latarjet procedure by translating the conjoint tendon medially and orientation tendon closer to the center of the joint line during shoulder abduction and external rotation.^{6,17} However, there is very limited biomechanical evidence to support the Trillat procedure. Several studies have shown favorable outcomes after the arthroscopic Trillat procedure, but this procedure is not without potential complications.^{6,12-14} Recurrent instability, pseudoarthrosis of the coracoid, hardware-related symptoms, and loss of shoulder motion, especially external rotation (ER), should be noted and patients counseled before surgery.⁶ In addition, the development of osteoarthritis and iatrogenic subcoracoid impingement are potential complications due to the nonanatomic nature of the procedure.

There are other methods to improve stability in hyperlaxity patients, which include a robust rotator interval closure, coracohumeral ligament reconstruction, and posteroinferior/inferior/anteroinferior capsular shift. It is known from Dewing et al.¹⁸ studied a shoulder capsular area, measured by magnetic resonance arthrography, and found that the posteroinferior cross-sectional capsular area was increased in patients with anterior, posterior, and multidirectional instability. A biomechanical study from Provencher et al.¹⁹ demonstrated that anterior instability in a neutral

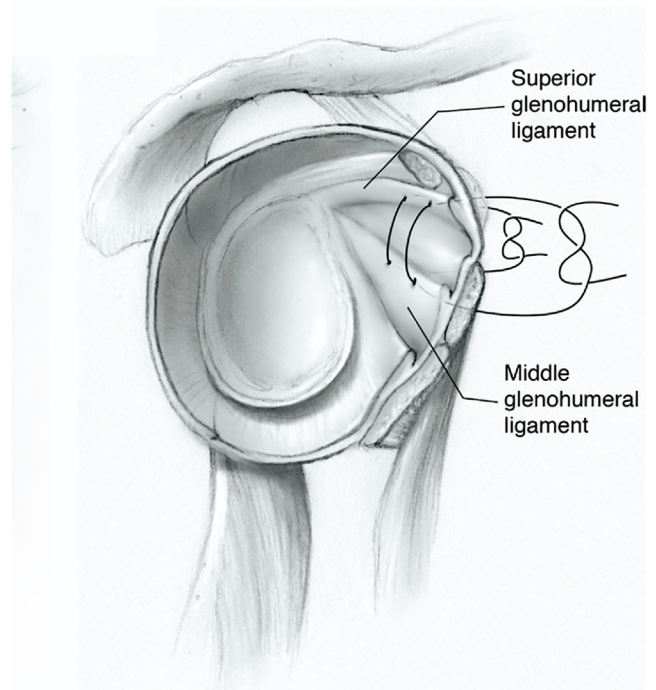


Fig 2. Drawing of the right shoulder shows the arthroscopic RI repair using two No. 2 nonabsorbable sutures (one medial and one lateral), with the arm in 30° of external rotation. RI, rotator interval.

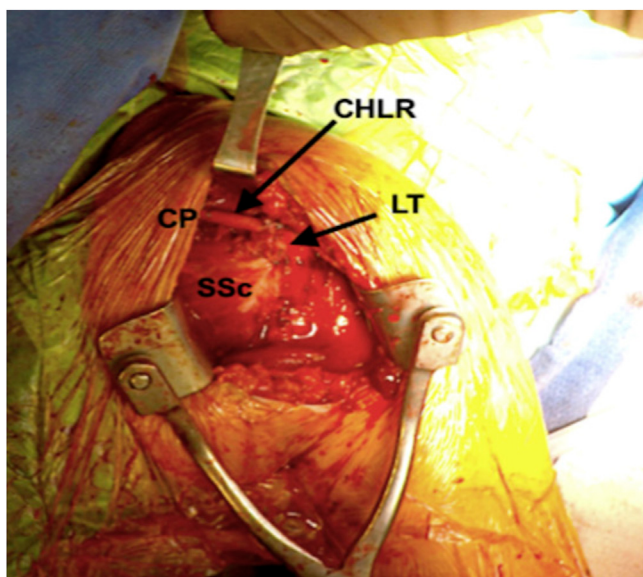


Fig 3. Coracohumeral ligament graft fixation to the humeral head in a left shoulder. CP, coracoid process; SSc, subscapularis tendon; LT, lesser tuberosity and CHLR, coracohumeral ligament reconstruction using semitendinosus autograft.

position and sulcus stability was improved only in an open rotator interval (RI) closure (medial-lateral) but not arthroscopically (superior-inferior; Fig 1 and 2). However, the anterior instability was improved in the abduction and external rotation position for arthroscopic RI closure. Interestingly, Farber et al.²⁰ showed that arthroscopic medial-lateral RI closure could restore the ER in 60° shoulder abduction position to the intact state, which was better than the superior-inferior RI closure. Arthroscopic medial-lateral RI closure with the suture anchor in the humeral head may be an alternative option in the surgical treatment of a patient who presents with multidirectional instability without concern of loss of ER motion.

Another option to treat hyperlaxity with instability is a coracohumeral ligament (CHL) reconstruction with auto or allograft tendon. The CHL is a critical component to provide inferior stability of the shoulder joint. Reconstruction of CHL has been described²¹ to address this same issue, and similar patient group to Boileau et al. (Fig 3). Interestingly, the Trillat probably involves tightening of the CHL to some degree, but is still yet to be investigated. The Trillat procedure is nonanatomic but has shown good early promise. One of the biggest concerns is potential coracoid impingement, scarring, and potential coracoid fracture, but these were minimal in the series of Boileau et al.¹

Although there is more work to be done, Boileau and colleagues¹ should be congratulated on an innovative approach to this challenging problem. However, we must keep in mind that there are other options as well

especially dealing with the RI and CHL, which may offer additive benefit.

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