Arthroscopic Surgical Techniques for the Management of Proximal Biceps Injuries

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KEYWORDS

• Long head biceps tendon • Proximal biceps • Shoulder arthroscopy • SLAP repair • Arthroscopic biceps tenodesis • Interference screw

KEY POINTS

- Arthroscopic proximal biceps reattachment (SLAP repair) is indicated for type II SLAP lesions in active younger patients with consistent history, physical examination, and imaging findings, and no identifiable concomitant pathologic abnormality.
- Outcomes after SLAP repair are largely favorable, although less successful outcomes have been demonstrated in certain populations, such as overhead athletes, patients older than 35 years of age, workers' compensation patients, and patients with concomitant shoulder pathologic abnormality.
- Biceps tenodesis is indicated for the management of proximal biceps pathologic abnormality, including SLAP tears and intrinsic biceps disorders, and may allow better ability to return to physical activity, improved cosmesis, and closer approximation of normal anatomy despite longer rehabilitation times and increased technical difficulty when compared with biceps tenotomy.
- Numerous arthroscopic fixation methods for biceps tenodesis have been described; however, the use of an interference screw or suture anchor construct is supported by most clinical evidence.
- Arthroscopic biceps tenodesis provides consistently favorable outcomes in terms of function and pain relief, without any long-term difference in clinical outcomes or complications when compared with open subpectoral tenodesis.

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Clin Sports Med 35 (2016) 113–135
http://dx.doi.org/10.1016/j.csm.2015.08.001 **sportsmed.theclinics.com**
0278-5919/16/$ – see front matter

ARTHROSCOPIC SUPERIOR LABRUM ANTERIOR TO POSTERIOR REPAIR

Introduction

Arthroscopic proximal biceps reattachment (superior labrum anterior to posterior or SLAP repair) is a surgical technique used to address pathologic disruption of the anchor of the proximal long head of the biceps (LHB) tendon at its origin involving both the supraglenoid tubercle and the superior labrum.[1,2] First described by Andrews and colleagues[3] in 1985, disruption of the LHB anchor and superior labrum from the glenoid was termed a SLAP lesion by Snyder and colleagues[4] in 1990, who designated the first 4 anatomic classifications. Since that time, nearly 3 decades of research has established SLAP lesions as a source of shoulder pain. Currently, 10 different SLAP tear variants have been described as well as several implicated mechanisms of injury, including both traumatic injuries as well as repetitive overhead activity.[3,5–11] The proper management of SLAP lesions continues to evolve and remains controversial in certain populations stemming from the paucity of level I and II evidence, a multitude of identified confounding factors, and level III and IV studies with inconsistent and conflicting reported outcomes.

Indications/Contraindications

Although the accurate diagnosis of an SLAP lesion continues to be an area of debate, most would agree that a definitive diagnosis can be best made based on arthroscopic findings in the context of a combination of appropriate history, provocative tests, and imaging. Patient presentation can be variable, but common symptoms include pain localized to either the posterior or the anterior glenohumeral joint line. The pain is often provoked by certain activities or positions and is sometimes associated with mechanical catching in the joint and "dead-arm" episodes. In the overhead athlete population, pain can often be accompanied by fatigue, disordered shoulder mechanics, and diminished performance. Physical examination findings can be variable with several specialized tests that can be useful, including O'Brien's active compression test, the crank test, and biceps-specific tests such as the Speed's and Yergason's tests. No one examination finding has been shown to be acceptably specific for the diagnosis of an SLAP lesion. When SLAP pathologic abnormality is suspected based on history and examination, imaging in the form of an MRI with or without arthrography can further assist in the diagnosis. Before considering surgical repair, optimal management includes a trial of nonoperative treatment in those suspected of having an SLAP lesion.[8,12–14]

The evolving indications for arthroscopic repair of type II SLAP lesions depend on several patient factors, summarized in **Box 1**. In general, the patients with the strongest indications for and best expected outcomes after SLAP repair are active younger

Box 1
Indications for arthroscopic superior labrum anterior to posterior repair

- SLAP tears, typically type II
- Failure of conservative measures
- Significantly younger age (<35 years)
- Active athletic participation
- Absence of biceps tendon pathologic abnormality
- Overhead athletes