Return to Play After Shoulder Surgery in Throwers

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KEYWORDS

• Baseball • Softball • Football • Javelin • Cricket

KEY POINTS

- Return to play after superior labral anterior to posterior (SLAP) repair is poor.
- Surgeons need to be cautious with SLAP repair indications in overhead athletes.
- Pitchers possess unique shoulder kinematics, and often possess physiologic adaptations that are not necessarily pathologic.
- Open biceps tenodesis is a reasonable alternative to SLAP repair in overhand athletes.

INTRODUCTION

The throwing athlete's shoulder is a unique, complex entity with challenges in both diagnosis and management. The shoulders in these athletes possess unique biomechanics and physiologic adaptations that are not necessarily pathologic. Due to the continued remodeling of the adolescent shoulder during development, these adaptations occur to both the soft tissue structures and bone, and are imperative to successful throwing mechanics. These physiologic adaptations make clinical management in these patients quite challenging, as a careful balance needs to be met with what is an optimal physiologic adaptation versus a pathologic condition that necessitates treatment. Because of this, return to play (RTP) outcomes are often poor when specifically evaluating overhead athletes. It is important to note that even though these athletes may demonstrate improvements in pain and general function following surgical management, subtle changes in accuracy or velocity as a result of surgery can significantly affect the success of an overhead throwing athlete at the competitive level.

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The biceps-labral complex (BLC) is a common source of pathology in overhead athletes and frequently includes pathology to the long head biceps tendon (LHBT) and superior labrum in the form of superior labral anterior to posterior (SLAP) tears, which are often managed with SLAP repair in overhead athletes, especially type II SLAP tears (**Fig. 1**).[1] Although SLAP tears can occur in isolation in these athletes, they more frequently coincide with other shoulder pathology, such as partial-thickness undersurface rotator cuff tears, biceps tendinitis, glenohumeral internal rotation deficit (GIRD), and anterior microinstability. Recently, there has been a noteworthy increase in the incidence and surgical treatment of SLAP tears.[2] Management of these patients needs to take into account the loads that will be placed on the shoulder postoperatively and the need for return to sport. Unfortunately, return to sport for overhead throwing athletes following SLAP repair is poor,[3,4] highlighting the need for appropriate surgical indications and possible alterations in surgical technique to improve RTP outcomes.

With regard to BLC lesions, the thrower's shoulder deserves special attention given its unique mechanics. Pitchers and other overhead athletes have high clinical expectations, often with goals of returning to high-level competition, emphasizing the need for proper diagnosis and management in these patients. The baseball pitch is the fastest described human motion, often exceeding 7000° per second. This places tremendous forces through the shoulder, and can exceed 1000 N in professional pitchers.[5] Some believe that the etiology of BLC lesions in these athletes involves tension during the deceleration phase of throwing, which can lead to both LHBT lesions as well as SLAP tears, or peel-back during the late-cocking phase of throwing. These lesions may be exacerbated by the presence of associated anterior microinstability or GIRD, and are often seen in combination with other shoulder pathology, such as rotator cuff tears.[6–8]

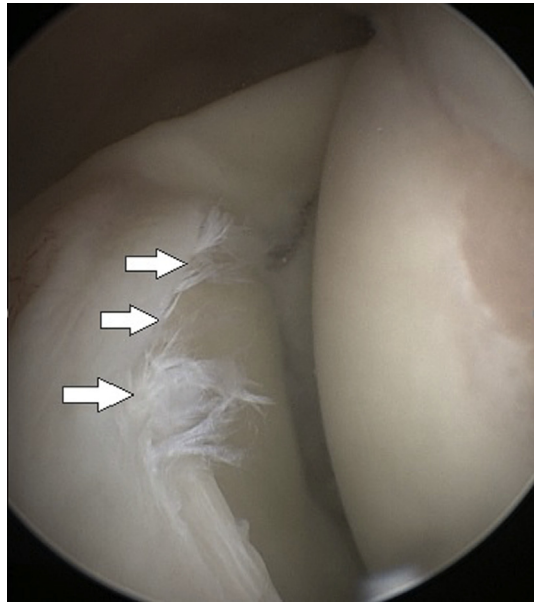

Fig. 1. LHBT and superior labral pathology is common in overhead athletes. View from posterior portal demonstrates a posterior-superior labral tear in an overhead athlete (*white arrows*).