Disorders of the Superior Labrum: Assessment and Treatment

There's a common belief that research published today is already outdated before it goes to press. To combat that problem and help keep us up-to-date, frequent, short-term reviews of published research are conducted and summarized in this journal. The topic of this article is disorders of the superior labrum in the shoulder.

The labrum is a ring of dense fibrocartilage around the rim of the acetabulum (shoulder socket). It helps stabilize the head of the humerus (upper arm bone) in the acetabulum. Information on the diagnosis and treatment of superior labral anterior-posterior (SLAP) tears is presented from studies published in the last two years.

A SLAP tear means the labrum is torn away from the acetabulum in two directions: forward (anterior) and back (posterior). The word superior tells us the tear is along the upper rim or top of the acetabulum.

This is a serious injury that doesn't happen very often. Overhead athletes are at greatest risk. Cocking the arm back to throw puts the shoulder in a position that can cause a SLAP tear. There has also been some speculation that forceful traction or countertraction represents a traumatic cause of SLAP injuries. But studies of cadavers (bodies saved after death for study) don't support this theory.

There are four basic types of SLAP lesions labeled I through IV. They represent type of tear, location of tear, and severity of tear. For example, with type I there is fraying of the labrum. In Type II the tear extends into the biceps tendon, which attaches to the labrum. Type III is a bucket-handle shaped tear. It does not include the biceps. And type IV is a bucket-handle shaped tear with involvement of the biceps tendon.

The physician uses a wide range of tests and measures to diagnose and classify a SLAP tear. Most physicians are familiar with a group of commonly applied clinical tests such as the O'Brien active compression test, the biceps load test, and the pain provocation test. One other well-known clinical test includes the modified Jobe relocation test. If any of these tests are positive, then further diagnostic measures are needed.

Range-of-motion testing must be done comparing the involved side to the normal (pain free) shoulder. The examiner is specifically looking for a glenohumeral internal rotation deficit (GIRD). Without normal rotational patterns, athletes lose the ability to throw overhand effectively.

These clinical tests don't usually tell whether the lesion is Grade I, II, III, or IV. Advanced imaging with magnetic resonance arthrography (MRA) is needed to confirm the clinical diagnosis. MRA is considered accurate, sensitive, and specific enough to rely upon.

Scientists using arthroscopy to follow-up and confirm MRA results have been able to refine what SLAP tears look like on MRA. The level and experience of the radiologist evaluating the MRAs is also important in recognizing these lesions.

Likewise, studies have reported positive signs the surgeon can look for when performing an arthroscopic exam. For example, some signs of a type II SLAP lesion include a bare sublabral footprint, peel-back sign, displaceable biceps root, or positive drive through sign. The surgeon is well-acquainted with the meaning of each of these signs.

The authors do mention that studies show the reliability of interobserver reliability for arthroscopic exams is very poor. This means that if 10 physicians looked at the arthroscopic video to evaluate and diagnose the condition, only six of the 10 would agree. That is only slightly more than half, which means 40 per cent disagree. This low level of agreement suggests the need to look at arthroscopic exams very carefully before making a final diagnosis.
Once the diagnosis has been made, then a plan of care is decided upon. Treatment may be nonoperative first. Athletes are shown how to change the way they do things in order to take the pressure off the structures and let them heal. Pain relievers, corticosteroid injections, and antiinflammatory drugs may be used.

A program of Physical Therapy is prescribed. The therapist's focus is on reducing the *glenohumeral internal rotation deficit* (GIRD). The rehab program will also work toward improving the flow of movement and energy throughout the entire *kinetic chain*. Kinetic chain refers to various body parts connected and moving together (entire upper or lower extremity in connection with the body).

Sometimes surgery is needed to *débride* (clean up) any frayed pieces, reattach the labrum, and/or repair the torn tendon. There are many different ways to approach the surgical treatment of SLAP injuries. It may be a while before we know which surgery works best for each type of SLAP tear. Outcome studies assessing each type of tear are just becoming part of the published literature.

Studies of SLAP injuries are also seeing other injuries or diagnoses along with the SLAP tear. For example, shoulder instability with shoulder dislocation has been linked with SLAP injuries. Anterior (forward) dislocation leads to an anterior labral tear. When the force of the injury is enough to involve the rotator cuff, then the risk of a SLAP tear increases as well.

There can be cysts along with SLAP lesions. If the cyst is large enough or in just the right spot, nerve compression can occur. Both components are usually repaired to assure a good outcome. But more recent research has brought this into question. It seems that patients get just as good of results whether or not the cyst is removed or aspirated (deflated).

Complications after a SLAP repair are usually diagnosed with a follow-up arthroscopic exam. The surgeon can look inside the joint and see exactly what's wrong. Sometimes the sutures used to repair the SLAP lesion get torn or rub a hole in the cartilage. Failure of the SLAP lesion to heal is another possible post-operative problem.

The authors conclude that much more study is needed to help improve the treatment of SLAP lesions. Type of injury, location of injury, and treatment of the lesion direct the clinical management of this problem. But more knowledge is needed of patient age, anatomy, and function of the labral mechanism.