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**Shoulder Instability in
Young Athletes**

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Overview

Shoulder instability is quite common in young athletes, particularly in contact sports such as football, wrestling, and hockey. Most dislocations are anterior (towards the front), but some are posterior (towards the back). With no treatment, the risk of recurrent dislocations increases with decreasing age. Treatment can be nonoperative (physical therapy) or operative (either open incisions or arthroscopically).

Background

The shoulder joint is designed to be very mobile. Unfortunately, stability is sacrificed at the expense of this mobility. A shoulder can move completely out of the socket, called a dislocation, or it can move partially out of the socket and then spontaneously relocate itself, called a subluxation. More than 90% of dislocations are anterior (towards the front). This occurs when the arm is elevated above and behind the body. An example would be a football player on defense who reaches his arm out to the side to tackle an oncoming offensive player. Less than 10% are posterior (towards the back) dislocations. Posterior dislocations occur when a load is placed across an arm which is placed in front of the body. An example is an offensive lineman with his hands forward who has his arm forcibly pushed back by an oncoming defensive lineman.

The risk of shoulder dislocation reaches its peak in late adolescence and early adulthood, and then decreases markedly thereafter. Sports involving contact have a higher risk of dislocations, as the arm can be forcibly placed in one of the aforementioned positions with tremendous load applied to it.

Anatomy

The shoulder joint can be thought of as a very shallow ball and socket joint. Unlike the hip, which has a very deep socket, the shoulder socket is relatively shallow. It is shaped more like the saucer under a coffee cup. Because of its shape, it provides minimal resistance to shoulder dislocation. The socket is surrounded on its periphery by a ring of soft tissue called the labrum which is attached to the bony socket. The labrum functions like a chop block placed behind the wheel of a car or boat to prevent it from rolling. For the shoulder to dislocate, the ball must get “up and over” the labrum. The labrum also serves as a point of attachment for ligaments that also help to support the



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shoulder joint and provide stability. Lastly, the muscles around the shoulder joint, including the rotator cuff and the deltoid, function to help maintain stability.

Shoulder Instability

When an athlete experiences shoulder instability (either a subluxation or a dislocation), they often feel the shoulder “go out of place.” Sometimes the shoulder will spontaneously reduce itself, but other times it remains dislocated. The longer the shoulder joint remains dislocated, the more muscle spasms develop and the less likely it is to spontaneously reduce. In these instances, the athlete needs to be seen by a health care provider who can gently reduce the shoulder joint, oftentimes under sedation with medication.

Anatomically, when the shoulder dislocates, it will often tear the labrum off its attachment to the socket, as well as stretch the shoulder ligaments that attach to the labrum. It is this damage (the torn labrum and stretched ligaments) that places the athlete at high risk for recurrent episodes of instability.

Treatment

There has been considerable controversy in the past among orthopaedic surgeons regarding treatment of shoulder instability. In the past, many players were treated non-operatively with physical therapy to strengthen up the shoulder muscles in an effort to help support the shoulder and prevent recurrent instability episodes. However, studies have shown that athletes aged 20 years old or younger who experience a first-time shoulder dislocation can expect a 50-90% chance of recurrent dislocation/subluxation episodes. With recurrent dislocations, the labrum and ligaments can develop more damage as can the cartilage that covers the surface of the humeral head (the ball). Because of this high rate of recurrent instability, orthopaedic surgeons have begun to recommend surgery after a first time dislocation episode.

In reality, the decision to pursue surgery or to rehabilitate the shoulder through physical therapy (with no surgery) depends on the individual athlete, the time point of the injury during their sport season, and the magnitude of their injury. Dislocations which require reduction by a physician with sedation often signify a worse injury. In addition, a magnetic resonance imaging (MRI) of the shoulder can also help to determine the severity of the injury.

Non-operative treatment with physical therapy involves a short period of time in a sling (typically 2 weeks or less), followed by exercises to gradually regain range-of-motion and strength in the shoulder. The time period to return to athletics is variable, but usually 2-6 weeks. Operative treatment involves either an open incision or an arthroscopic procedure to fix the labrum back on the bony socket and possibly retighten any stretched ligaments. Patients then undergo a similar physical therapy program to



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regain their strength and range-of-motion, with a return to full activities in about 4 months.

The advantages of surgical treatment include a significantly decreased risk of recurrent instability episodes. The disadvantages include potential surgical complications (infection, injury to nerves or arteries, etc...) and a 3-4 month rehabilitation.

Summary

Shoulder instability is a common problem. The risk of recurrent instability is high in young athletes. Options include both operative and non-operative treatment, and the specific treatment approach needs to be tailored to each individual athlete.

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