Sports-related Shoulder Injuries

Overview

When someone experiences a shoulder injury, the link to his central core (trunk and spine) is affected, too. Therefore, key goals in treatment are to regain proper stability in the shoulder joint and to re-establish this important link in the patient’s kinetic chain – the muscles and joints extending from the core to the hand. All muscles must work together properly to perform most sports, especially those that involve throwing a ball or otherwise using an overhead movement, such as in swimming, racquet sports, volleyball, climbing, kayaking and weightlifting.

It is important for physicians to recognize which sports-related shoulder injuries can be treated quickly through non-operative techniques and which require surgery. Some joint dislocations can be treated successfully through rehabilitation, but some require surgery. If a patient sees a specialist early, optimal treatment plans can be made immediately to expedite the return to full function.

With proper muscle strengthening and overall conditioning, the goals are to enable athletes to return to their preferred activities and prevent subsequent injuries to the affected joint, as well as injury to other joints in the kinetic chain.

Symptoms

**Traumatic dislocations:** Joint dislocations frequently stem from a person falling or receiving an impact while his arm is outstretched. In some instances, the arm is pulled out of position or over-rotated. When this happens, the rounded head of the humerus (the main upper-arm bone) erupts out of the glenoid (the shoulder socket), causing pain and inhibiting movement.

People who sustain such an injury usually keep their arm at their side to reduce the pain. They may also experience tingling in their hands, as well as fullness in the shoulder due to the displacement, along with spasm and pain when the arm is moved too much. At times the humerus will spontaneously pop back into place. While this increases comfort temporarily, the joint’s surrounding tissues still must heal. If the injury is not treated properly, the person risks ongoing shoulder instability. This may be in the form of recurrent dislocation or subluxation (partial slipping in and out of the socket).

**Rotator cuff and tendon injuries:** The rotator cuff comprises four shoulder muscles that function together to keep the humeral ball in the glenoid socket – akin to a golf ball on a tee. With trauma or repetitive motion, one or more of the tendons (attaching the muscle to shoulder joint) may tear, affecting the person’s use of that arm. Pain is experienced when attempting to lift of objects over head and trying to sleep on the affected side. The tendons that attach the biceps and pectoralis muscles are commonly injured.
Labral tear: Around the shoulder socket is a ring of cartilage called the labrum. This is the site of attachment of the biceps tendon as well as the stabilizing ligaments of the shoulder. Labral-tear symptoms are frequently vague and challenging to diagnose. A labral tear causes pain, often deep in the shoulder. Labral tears can be associated with a clicking sound, with movement, and athletes may be unable to throw or hit with their usual speed or strength.

AC Joint Sprain: The acromioclavicular (AC) joint links the shoulder blade (acromion) to the collarbone (clavicle). Sprains frequently occur when someone falls on his shoulder with the arm at the side, or receives an impact on the top of the shoulder. Common causes include being checked into the boards in hockey, tackled in rugby, being pitched over a bicycle’s handlebars, and falling. The sprain in the ligaments causes pain and discomfort with arm movement, especially across the body. Mild to moderate swelling can emerge on top of the shoulder. If the ligaments have completely torn, the end of the collarbone may appear permanently as a bump under the skin.

Causes

Sports-related shoulder injuries usually result from a traumatic event or from intensive, repetitive motion. Shoulder injuries also happen with too much strain or stress to the joint, which can occur with a change to one’s training routine or during a competition. For example, an individual begins an aggressive weightlifting regimen without a solid base or significantly increases his exercise regimen, which stresses the joint and can result in injury.

Risk Factors

Two major risk factors exist for sports-related shoulder injuries: Improper conditioning and increasing the training regimen too quickly. Falls and contact, which are often causes of injury, are difficult to avoid.

Diagnosis

Sport-related shoulder injuries are generally diagnosed with a thorough exam by a qualified sports-medicine specialist. Diagnostic tests may include imaging techniques such as X-ray, ultrasound, MRI (magnetic resonance imaging) or MRI-arthrogram (with contrast).

Complications

Complications for sports-related shoulder injuries include difficulty with the injured shoulder due to nerve damage, torn cartilage, ligaments and tendons. All these affect movement of the shoulder joint. If the shoulder is weak from a torn tendon, further injury could happen under
physical stress. This may pose particular danger for adventure athletes if a shoulder “goes out” while open-water swimming, climbing or kayaking.

If not treated in a timely manner, any of the above mentioned injuries can create conditions for injury to other tendons and cartilage, leading to long-term arthritis.

**Recovery**

Patients may need to modify their activities to allow injured shoulders to heal. This may include working with a physical therapist to develop a personalized muscle strengthening and stretching regime to expedite healing and prevent further injury.

It is essential to understand the importance of not increasing one’s activity level too quickly and knowing one’s physical limitations. Patients can help themselves by getting adequate sleep, and rest between activities or competitions. Regaining one’s strength will require healthy eating, proper hydration and disciplined, progressive exercise to promote optimal healing.