

Elbow Problems in Athletes

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Elbow injuries are a very common part of athletic injuries. In fact, there are many sports that have colloquial names for the commonly associated injuries that happened in those particular sports. Most people have heard of tennis elbow which refers to pain along the lateral aspect of the elbow with a backhand maneuver. The lateral side of the elbow is the point farthest away from the body with the arm held at the side (tennis elbow will be discussed in more detail later). Baseball elbow occurs secondary to stresses placed across the elbow during pitching which cause a traction injury along the medial (the side of the elbow closest to the body when held at the side) aspect of the elbow. This injury can lead to instability of the elbow, leading to a surgical reconstruction. Many are aware of Tommy John, a former pitcher for the Los Angeles Dodgers, who underwent a medial collateral ligament reconstruction for elbow instability for this particular type of problem. Golfer's elbow is considered to be pain on both the medial and lateral aspects of the elbow with medial problems occurring on the downswing, with the trailing arm and lateral elbow pain occurring at impact with the leading arm. Weight lifting is known for pain along the medial aspect of the elbow, as well as irritation of the ulnar nerve (funny bone nerve) which gives a sensation of numbness and tingling of the small and ring fingers. As this short list shows, the elbow is commonly injured. There are many more sports such as gymnastics, rock climbing, water skiing, volleyball, basketball, and bowling which are prone to particular types of injuries to the elbow.

The elbow is a well-fitted hinged joint which allows for a very small amount of excessive motion or toggle. The bony complex of the elbow allows for two complex motions including elbow flexion and extension as well as pronation and supination. Pronation of the right forearm is the motion used for loosening a screw with a screwdriver, whereas supination is the motion used for tightening a screw with a screwdriver.

A fully functioning elbow is extremely important to facilitate the use of the hand. The complex wide motions of the elbow allow the hand to be placed in space for grasp, pinch, and pushing activities. Injuries of the elbow involve muscles, ligaments, tendons, capsules, bones, and articular surfaces as well as nerves. In order to diagnose elbow injuries, clinical examination is performed as well as obtaining X-rays and obtaining a magnetic resonance imaging (MRI) study. MRI has allowed for better visualization of the soft tissues about the elbow joint and has improved our ability to diagnose overuse problems such as tennis elbow (lateral epicondylitis). In addition to MRI, minimally invasive surgical procedures have also improved our ability to both treat and diagnose elbow problems.

The most common elbow injury that will occur in the nonprofessional athlete is lateral epicondylitis, as previously pointed out, also known as "tennis elbow." Pain along the lateral side of the elbow occurs between seven and twenty times more commonly than pain along the medial side. It was first described more than 100 years ago in a tennis player but is clearly seen in many athletic activities as well as many repetitive activities that occur in the workplace. This problem is so common that in one particular large study, 50% of club tennis players more than 30 years old experienced symptoms characteristic of so-called tennis elbow at one time or another. One-half of those players noted symptoms of a duration of less than six months, whereas the other half had symptoms lasting an average of 2.5 years. Anyone who has had this problem knows that this can be a chronic debilitating problem. It can make it difficult to even perform the small activities of daily living such as lifting a coffee cup. This particular problem occurs most often in recreational tennis players between the ages of 35 and 50, with an average age of 41 years old, who play 3-4 times per week. Several factors have been attributed to precipitating this problem including heavier, stiffer, more tightly strung racquets, incorrect grip size, metal racquets, inexperienced players, and poor technique, especially backhand. Advanced tennis players who warm up, use good technique, and are well conditioned rarely endure this problem.

The treatment for tennis elbow (lateral epicondylitis) is similar to many other overuse syndromes which includes first protecting the elbow from further injury. To do this, one must rest the elbow but still maintain cardiovascular fitness. Ice, elevation, and compression also can be helpful along with nonsteroidal anti-inflammatory medications. Rehabilitation should include stretching of the muscles that insert at the level of the elbow. In addition, several modalities now available to the therapists have been shown to be helpful including high voltage galvanic electrical stimulation and iontophoresis. Certainly changing one's technique such as a poor backhand in tennis and modifying or improving one's equipment can be very helpful. If after several weeks the above treatment fails to improve the patient's pain, consideration of an injection with a steroid deep into the extensor tendons that insert at the level of the elbow has been found to be helpful. Many also use a so-called "tennis elbow strap." Essentially, this is a band that is placed over the forearm region close to the elbow, and by applying force across the muscles reduces abnormal tension of the muscle tendon unit at its origin.

If the above treatments fail and an MRI demonstrates a pathological lesion, consideration of surgical intervention is then undertaken. The surgery includes a small incision with excision of the degenerative tendinous tissue at the level of the elbow. The blood supply to the region is improved by placing small drill holes into the bone. Then normal muscle is rotated from nearby to replace the excised damaged tissue. The rehabilitation postoperatively from this particular procedure takes several months to return to a previous high level of play. The success rate, however, is very high, with above 85% returning to full activity without pain, 12% with improved symptoms but with some pain with vigorous activities, and 3% showing no improvement.

The elbow joint is a complex anatomical structure that allows for precise placement of a hand in space. Athletics and many activities of daily living subject the elbow to great stresses that result in a wide variety of injuries. With the recent advances in diagnosis with MRI and with the procedures such as elbow arthroscopy, our ability to diagnose and treat elbow problems has improved considerably in the last few years.