



Elbow Injuries in the Throwing Athlete

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Playball

The Red Sox are back in Fenway Park, a sure sign that spring is here and summer is just around the corner. With the passing of another winter and the arrival of warm weather and summer vacation, many New England children are looking forward to returning to baseball and other summer sports activities. Sports participation continues to rise both regionally and nationally. It is currently estimated that over 30 million children and adolescents participate in organized sports, and the majority of U.S. households will have at least one child participating in organized sports.

Baseball continues to be among the most popular sports for American youths, with an estimated 5 million children between 5 and 14 years of age participating in organized play. As participation has increased, particular in younger children and at higher levels of competition, so too has our awareness of elbow injuries in the throwing athlete. Indeed, recent medical studies have shown that 20 – 50% of youth baseball pitchers will develop elbow pain. This increasingly common problem was recently highlighted in a front-page story of the May 11, 2005 *Boston Herald*, in an article entitled “It’s the Curse of the Curt: Tykes Throw Out Elbows.”

The purpose of this article will be to describe a few of the common elbow conditions affecting the throwing athlete and outline the current recommendations for pitchers.

Little Leaguer’s Elbow

There are a number of common elbow conditions associated with throwing and overuse in skeletally immature athletes. Often these conditions are grouped together and referred to as “Little Leaguer’s Elbow.” This term, however, specifically refers to pain on the inside (or “medial”) of the elbow attributed to repetitive throwing in children and adolescents.

During the throwing motion, there are tensile, or distraction, forces acting upon the medial elbow, particularly during the late cocking and acceleration phases of the throwing motion. These forces are often stronger than the surrounding elbow muscles. With repetitive throwing, these forces may lead to stress injuries of the growth plate on the inside of the elbow.

Treatment for “Little Leaguer’s Elbow” typically involves rest, physical therapy, and a gradual return to sports participation.

Another common elbow condition seen in the adolescent throwing athlete is “osteochondritis dessicans.” Also referred to as “OCD,” this condition typically involves the cartilage and bone overlying the end of the humerus bone on the outside, or “lateral,” part of the elbow. Affected patients will often have pain and/or stiffness. In advanced cases of cartilage or bone injury, patients can develop mechanical symptoms of elbow swelling, locking, or giving way. The diagnosis is often confirmed with the use of x-rays and/or magnetic resonance imaging (MRI). Treatment is dependent upon symptoms and the severity of the cartilage injury and may range from simple rest and physical therapy to surgical intervention.

Young pitchers and throwing athletes may also develop tendonitis, or inflammation of the tendons due to repetitive use. Tendons which may be affected around the elbow include those associated with the muscles of the triceps, biceps, and wrist flexors. The diagnosis is often made after careful history and physical examination. Treatment typically involves rest, anti-inflammatory medication, and physical therapy. In all cases, treatment recommendations are made on an individual basis.

An Ounce of Prevention...

Due to the increasing prevalence of shoulder and elbow problems, the Medical and Safety Advisory Committee of USA Baseball published a set of recommendations in 1996 for young pitchers and throwing athletes. Age-related guidelines were provided for the number of pitches and innings thrown per week, in addition to guidelines for the appropriate ages at which various pitches should be taught and thrown. For example, it was recommended that pitchers between the ages of 11 and 12 years throw a maximum of 60-70 pitches per game for a maximum of 2 games per week. The recommended age for an athlete to learn to throw a fastball was 8 years, curveball 14 years, and slider 16 years. It is important to recognize that these were only guidelines and not necessarily applicable to every child.

As important as restrictions on the number, frequency, and kinds of pitches thrown are proper coaching of technique and mechanics, recognition of the signs of overuse injury, and prompt intervention when pain or other mechanical symptoms arise. Parents, coaches, and trainers are all encouraged to provide appropriate instruction, training, and modification of activities to prevent elbow injuries.

Your Home Team

The Department of Orthopedic Surgery at Children’s Hospital Boston has a number of healthcare providers who are available to help young pitchers and throwers with elbow pain or other sports-related injuries. Our team of orthopedic surgeons, physical and occupational therapists, nurse practitioners, and orthotists is well trained and ready to assist our young athletes pursue a successful, enjoyable, and healthy summer season. In this game, we want everyone to be a winner.