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Common Injuries of the Elbow **By Joseph Lynch, MD**

Elbow Anatomy

The elbow is a complex hinge joint comprised of the humerus, radius and ulna which join to create three separate articulations – the ulnohumeral joint, radiocapitellar joint and proximal radioulnar joint. The medial and lateral collateral ligaments work together with the bony anatomy to provide elbow stability during daily activities.

Many different soft tissue structures originate, insert or traverse the elbow and are susceptible to injury. The wrist flexors and extensors, the triceps and biceps are commonly injured muscles. Among the neurovascular structures that traverse the elbow, the ulnar nerve is most commonly injured. Given its subcutaneous position posterior to the axis of elbow flexion, the nerve is susceptible to direct trauma, continuous pressure, and traction during repeated or sustained elbow flexion.

Elbow Arthritis

Arthritis is the degeneration of articular cartilage. In the elbow, arthritis can be related to a prior fracture or dislocation, a systemic inflammatory condition such as rheumatoid arthritis, or repetitive 'wear and tear'. The etiology of osteoarthritis, or 'wear and tear' arthritis, is likely multi-factorial. Often times patients will have osteoarthritis of other joints indicating a potential genetic predisposition for this type of arthritis. Occasionally loose bodies will form that cause catching, locking and intermittent episodes of sharp pain.

Treatment of arthritis should initially focus on activity modification, rest, ice and oral anti-inflammatory agents. If loose bodies are present and symptomatic these can be removed with an arthroscopic approach. Rarely will an intra-articular steroid injection be indicated. Although joint replacement exists for the elbow, survivorship is less reliable than joint replacement for the shoulder, hip and knee.

Elbow Dislocation

An elbow dislocation can occur from a fall on an extended arm. The medial collateral ligament is the most commonly injured ligament during dislocation of the elbow. A thorough assessment of the neurovascular structures must be performed and concomitant fractures of the elbow must be carefully ruled. Prompt reduction of the dislocation is

recommended followed by a period of brief immobilization and a gradual progression of supervised motion with the aid of a hinged-brace that blocks terminal extension.

Distal Biceps Rupture

A distal biceps rupture can occur during an eccentric contraction of the biceps while lifting a heavy object. Patients will report a tearing sensation or 'pop' in the elbow which is quickly followed by swelling and bruising in the antecubital fossa. The arm will feel weak during elbow flexion and forearm rotation. Treatment is based on the expectations and desires of the patient, and typically requires surgical repair.

Epicondylitis

Epicondylitis is a term used to describe a condition that produces pain and tenderness at the origin of the wrist flexors and extensors. Lateral epicondylitis, which involves the wrist extensors, is much more common than medial epicondylitis which involves the flexor-pronator mass of the forearm. The term epicondylitis implies inflammation, however the histology is one of tissue degeneration in the absence of inflammation.

Many types of repetitive activities can lead to epicondylitis. Pain typically has a gradual onset and occurs during the offending activity. Pain can become more severe and be present at rest in chronic cases.

Treatment involves activity modification, avoidance of the offending activity, and a daily stretching program. Modalities such as ice and ultrasound can be helpful. Injections and surgical therapy may be beneficial in select individuals.

Cubital Tunnel Syndrome

Cubital tunnel syndrome occurs when pressure on the ulnar nerve is significant enough, and sustained enough, to disturb the way the nerve works. This can occur through repetitive or sustained elbow flexion, direct trauma, or prolonged compression. Lying posterior to the axis of flexion, the nerve must stretch several millimeters as the elbow is flexed. In some patients the nerve will snap over the medial epicondyle during flexion causing significant irritation. Symptoms manifest as numbness on the inside of the hand and in the ring and small fingers.

Initial treatment is directed at avoiding activities that exacerbate symptoms. A night splint can provide relief by holding the elbow in relative extension during sleep. Transposition of the nerve anterior to the axis of elbow flexion is a surgical option that can provide relief in certain patients.

About the Author: Joseph Lynch, M.D., is certified by the American Board of Orthopaedic Surgery (ABOS), possesses a Certificate of Added Qualification in Sports Medicine from the ABOS, and maintains a full-time surgical practice. Dr. Lynch is a graduate of Harvard University, finished first in his medical school class at Oregon Health Sciences University, and completed a shoulder & elbow fellowship at the University of Washington. He has published numerous peer-review articles and has spoken nationally on a variety of topics concerning orthopaedic surgery.

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