

# Orthopaedic Observations

*A Matter of Medicine...*

TM Pending

## Clinical Tips In Orthopaedics “Thinking Outside the Box” - Part II

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### **Lateral Epicondylitis - Rationale and Treatment**



The general purpose of this article is to stimulate the ongoing thought process of each individual clinician while treating patients in out-patient orthopaedic setting. It is not designed to replace other crucial treatment techniques, but rather add to the clinicians already established base treatment skills.

The focus pathology in this case is lateral epicondylitis. We have all treated patients with this pathology at some point in our careers. Has anyone noticed that these patients tend to return to your clinic after a year or so, even after complete symptom deprivation at the time of discharge? Despite activity modification, work place ergonomic training/setup, and a complete home exercise program, these patients can become repeat customers. If a patient is returning to your clinic despite having previously accomplished past goals and is again symptomatic, that tells me that the source or true cause of the problem has not been accurately identified and was likely treated in symptomatic fashion.

Over the years I have found that **poor posture, malalignment, and joint hypomobility** in combination can be the cause of lateral epicondylitis. Once these factors are corrected the patient should essentially remain asymptomatic.

### Rationale

#### *Poor Posture*

Typically the patient will present with increased forward head posturing, increased thoracic kyphosis, increased scapular protraction, and increased internal rotation of the humerus with increased anterior malalignment of the humeral head. This poor posturing will place the glenohumeral joint in a position of extension allowing for

increased elbow flexion in a resting position. With the elbow remaining in a prolonged static position of flexion the bicep will ultimately have decreased soft tissue length and now presents in a dominant and problematic manner with increased tone and strength as compared to the antagonist triceps muscle. The agonist – antagonist relationship has now been disrupted leading to malalignment or as Brian Mulligan termed it, “Positional Fault”.

#### *Malalignment*

With the poor posture previously described and the increased tone and strength of the bicep as compared to the triceps now identified brings us to the issue of malalignment. With the bicep now being dominant, it will impart a valgus stress or valgus static positioning to the ginglymus, humeroulnar joint. The extensor carpi radialis longus will now slightly shorten and have an altered angle of pull. With this improper alignment there will be increased compression at the humeroradial joint and an associated anterior “positional fault” of the radial head secondary to the insertion of the now overly dominant bicep into the radial tuberosity and bicipital aponeurosis.

#### *Joint Hypomobility*

The poor posture and malalignment now leads us to joint hypomobility. Being that humeroradial joint is compressed and the radius now rests slightly anteriorly as compared to the capitulum of the humerus, the synovial joint capsule will present with restriction over time. This restriction should/can be graded using Kaltenborn’s Classification.

*(Article continued on the back side ...)*

## Treatment

### *Poor Posture*

A general conditioning and postural re-education program can be utilized to address deficits. Stretching to the anterior musculature with decreased soft tissue length such as the pectoralis major/minor, and the biceps along with strengthening of the posterior musculature is warranted to decrease scapular protraction, and malignment at the glenohumeral joint. Cervical retractions and isometrics for increased forward head posturing, and thoracic extension exercises for increased thoracic kyphosis are examples of some exercises that can be applied. The exercises chosen are left to the discretion of the treating clinician and should be directly related to the specific posturing of each individual patient.

### *Malalignment*

I have adapted a mobilization technique with Brian Mulligan's mobilization with movement (MWM) principle that is performed with the intention of decreasing the valgus alignment or carrying angle at the humeroulnar joint.

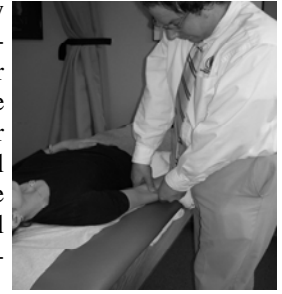


The mobilization is performed with the patient in supine. If it is the right extremity that is affected, the clinician shall cradle the distal extremity under their right forearm while grasping the proximal ulna with their right hand and the lateral epicondyle with their left hand. This should be performed or initiated in around 60-70 degrees of flexion which is the loose-packed position for the humeroulnar joint. A varus stress is then applied. When the alignment/varus stress has been applied the patient will actively extend the elbow against slight resistance of the clinician's right forearm that is cradling the distal extremity from the 70 degrees of flexion to full or near full extension. This will activate the triceps to dynamically stabilize the joint in a decreased valgus malalignment.



### *Joint Hypomobility*

After corrections have been made for poor posture and malalignment, joint hypomobility can now be addressed. The intention of this anterior to posterior mobilization is the decrease the previously mentioned capsular restrictions at the humeroradial joint. We know this joint will be hypomobile and that the radial head will be resting slightly anteriorly in relation to the capitulum.



This mobilization is performed with the patient in supine and the elbow at or near full extension. This is important because this is the loose-packed position for the humeroradial joint. The radial head is identified with deep palpation anteriorly. I tend to use my thumbs to apply the appropriate glide although the treating clinician may also use the hypothenar eminence of their left hand if it is the right side affected or vice versa. A posterior glide is then applied to the radial head on the capitulum of the humerus. Grading is dependent on the specific restrictions noted by the treating clinician.

\* It is important to note that manual muscle testing of the extensor carpi radialis longus should be performed before and after the mobilization to determine the effectiveness of the treatment. You as the treating clinician will be delightfully surprised at the increased grade of manual muscle testing with decreased pain that will follow if this protocol is executed properly.

As a multiple academic award recipient, William J. Coon graduated from Central Connecticut State University with a degree in Athletic Training/Sports Medicine in 2001. He is a Licensed Athletic Trainer, Licensed Physical Therapist Assistant, Certified Strength and Conditioning Specialist, and Licensed Emergency Medical Technician. He also serves as and is a Clinical Instructor for Athletic Training/Sports Medicine students. William is a member of the American Physical Therapy Association, American College of Sports Medicine, and the Phi Theta Kappa International Honor Society. He has special training in the Mulligan, Cyriax, and Kaltenborn Concept of joint mobilization/treatment techniques. He published two articles in 2007 with emphasis on the Mulligan Approach in treatment of tibiofemoral joint and cervical spine.

