Elbow Pain

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Tennis Elbow – Latest Research

(This newsletter is a summary of Coombes et al 2015).

Lateral elbow tendinopathy (LET), also known as tennis elbow or lateral epicondylalgia, is characterised by pain over the lateral epicondyle of the humerus during loading of the wrist extensor muscles. It is common in males and females between 35 and 54 years of age. LET affects approximately 1-3% of the general population, with individuals who smoke, manual workers, and tennis players being at increased risk. Work related factors include handling tools, handling of heavy loads, & repetitive movements. While many cases recover spontaneously, up to a third of patients have prolonged discomfort lasting in excess of 1 year despite interventions. A considerable proportion of patients experience recurrence. Up to 5% undergo surgery, with variable outcomes.

Pathophysiology: Histological features are similar to those of other common tendinopathies: Increased cellularity, an accumulation of ground substance, collagen disorganization, and neurovascular ingrowth. The most common sites are the deep and anterior fibres of the extensor carpi radialis brevis (ECRB) component of the common extensor tendon origin. The ECRB tendon merges with the lateral collateral ligament (LCL) which in turn fuses with the annular ligament of the proximal radioulnar joint. For this reason LET disorders frequently affect the elbow joint.

Clinical Examination: The main diagnostic finding is the presence of pain on palpation of the lateral epicondyle. Pain may also be reproduced on resisted extension of the wrist, index or middle finger, or by having the patient grip an object. Additional testing used in physiotherapy may include:

- Elbow, wrist and forearm range of motion, as well as accessory motion of the radioulnar. radiohumeral, and humeroular joints to identify any articular or muscular restriction.
- Evaluation of the cervical and thoracic spine and of radial nerve function, with neurodynamic testing and palpation of the radial nerve along its length. Neck pain (particularly at the C4-C7 levels) is more common in patients with LET than an age-matched healthy population.
- Posture and movement within the whole kinetic chain
- Evaluation of functional tasks undertaken in occupational and sport specific activities.
- Grip strength can be assessed using a dynamometer, with force applied to the onset of pain.

Diagnostic Imaging: Ultrasound and magnetic resonance imaging (MRI) demonstrate high sensitivity, but limited specificity in detecting structural abnormalities in tendinopathies. Signal changes are found in 50-53% of asymptomatic tendons. For this reason diagnostic imaging should be reserved for recalcitrant cases. However negative ultrasound findings can be used to confidently rule out LET as a diagnosis.

Differential Diagnosis: Possibilities include loose bodies, articular cartilage damage, ligament injury, or elbow synovial fold (plica) syndrome. Radial tunnel syndrome shares similar clinical features to, and may occur in combination with LET. Posterior interosseous nerve entrapment is another possibility.
In chronic cases, central sensitization may complicate the clinical picture. Clues include evidence of a heightened nociceptive withdrawal reflex, widespread mechanical hyperalgesia, or cold hyperalgesia.

Interventions:
Pharmacotherapy: While there may be some indication for the use of indomethacin or naproxen for acute reactive tendinopathy, there is no evidence for benefit of NSAIDs for the treatment of persistent symptoms. There is strong evidence that corticosteroid injection leads to worse outcomes after 6 and 12 months to "wait and see", and is associated with substantial recurrence rates. Prolotherapy injections or nitric oxide patches are sometimes used in chronic cases.
Manual Therapy: There is moderate evidence for the immediate effects of several manual therapy techniques on pain and grip strength, and for the short term clinical benefits when used with graduated exercise. Techniques targeting the cervical and thoracic regions provide additional clinical benefits beyond local elbow treatment alone. In cases of suspected central sensitisation, cervical manual therapy has been shown to reduce mechanical hyperalgesia at remote sites in people with and without musculoskeletal pain.
Exercise Therapy: In chronic LET, exercise has been shown to lead to greater and faster regression of pain, sick leave, fewer medical consultations, and increased work ability. Isometric exercises may be more appropriate initially. Concentric &/or eccentric exercise of the wrist extensors are advocated for patients with degenerative stage tendinopathy.
Strengthening muscles of the rotator cuff and scapula should be included in kinetic chain rehab.
For athletes in throwing or racquet based sports – plyometric exercises may be needed to improve tolerance to elastic loading.
Ergonomic modifications should target minimizing deviated wrist postures, forceful exertions, highly repetitive movements and ensuring adequate rest and recovery periods.

Education: The patient is taught how to minimise pain-provoking activities e.g. by not lifting with a pronated forearm; and is given advice regarding rest and recovery after loading.
Bracing: There is some evidence for the short-term benefit of taping, or orthoses.
Surgery: Patients with severe pain, and with LCL or tendon tears may require an early orthopaedic consult. However the results of surgery are equivocal.

Reference: Coombes, B et al (2015). Management of Lateral Elbow Tendinopathy—One Size Does Not Fit All. JOSPT, Epub.

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