

Can Ultrasound Findings Predict Tendon Healing in the Elbow?

Physical Therapy in Fremont, Carbon, and Sweetwater Counties for Elbow

Tennis elbow, also known as lateral elbow tendinopathy can be very hard to predict. Physical Therapy often helps reduce painful symptoms, improve motion, and restore function. But after months of therapy, some patients may still need surgery. On the other hand, some people heal up nicely on their own and don't need rehab or surgery.

Is there some way to predict in advance who needs what? In this study, orthopedic surgeons and radiologists team up to explore the usefulness of ultrasound studies in tennis elbow.

They started out with a hypothesis that there are sonographic predictors of prognosis for tennis elbow. Their approach was to test patients using the Patient-Rated Tennis Elbow Evaluation (PRTEE) to assess pain, function, and disability. At the same time, each patient had an ultrasound study done of the elbow.

Six months later, the same tests were given. Treatment with a Physical Therapist was provided during the six months between tests. The focus of conservative (nonoperative) care was stretching and eccentric loading (a specific type of exercise shown in other studies to be effective). No one had surgery or any steroid injections during that time.

The researchers compared the before and after results. They analyzed the data with respect to age, sex, and side (right or left elbow) as possible predictive factors of outcomes. Duration of symptoms, thickness of tendon, and amount of blood supply to the area were also studied as possible predictors of prognosis.

Previous studies of this type have been able to show that ultrasound is an excellent test tool to see what's going on inside that painful elbow. It shows structural changes like tendon thickening, tendon tears, and blood flow (increased or decreased). Ultrasound also provides the physician with some idea of how much collagen fiber degeneration is present and whether or not there is any inflammation going on.

So many studies showed that chronic tennis elbow doesn't have any inflammation that the condition was renamed from tendinitis to tendinosis. There aren't any immune blood cells present but plenty of scar tissue called fibrosis and necrotic (dead) cells.

So which factors have a significant affect on outcomes? And can these be used to predict what how the patient will respond (i.e., what will happen)? Over the six months' period of time, symptoms improved for three-fourths of the group. The remaining one-fourth of the group responded poorly to treatment.

What was the difference between the two groups? It boiled down to two things: partial or complete tear of the lateral collateral ligament (LCL) and size of the tear (more than four millimeters). There wasn't a significant link to the rest of the factors (age, sex, right or left elbow).

The results of this study confirm the benefit of ultrasound as an imaging tool for the diagnosis and assessment of tennis elbow. Failed tendon healing after conservative care may be explained by size of tendon tears. Lateral collateral ligament tears are a good indication that surgery is needed.

The authors conclude that it is still acceptable to try a course of nonoperative care for tennis elbow. But for patients with large tears, stimulating tendon repair rather than focusing on pain relief may be the best approach. For this

reason, steroid injections are not advised. Instead, the surgeon should consider some of the newer treatment methods such as blood injection, platelet-rich plasma, or cell therapy.

Ultrasound assessment early in the diagnostic process may help triage (sort) patients into the best treatment approach based on severity of findings, not severity of pain. Failed tendon healing may be avoided with this type of approach.

Reference: Andrew W. Clarke, MD, et al. Lateral Elbow Tendinopathy. Correlation of Ultrasound Findings with Pain and Functional Disability. In *The American Journal of Sports Medicine*. June 2010. Vol. 38. No. 6. Pp. 1209-1214.