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ECU TENDINITIS

Patient Information Brochure

What is ECU tendinitis?

The extensor carpi ulnaris muscle is known as the ECU. ECU tendinitis refers to inflammation of the tendon of the ECU muscle over the dorsum of the wrist where it passes in a separate compartment.

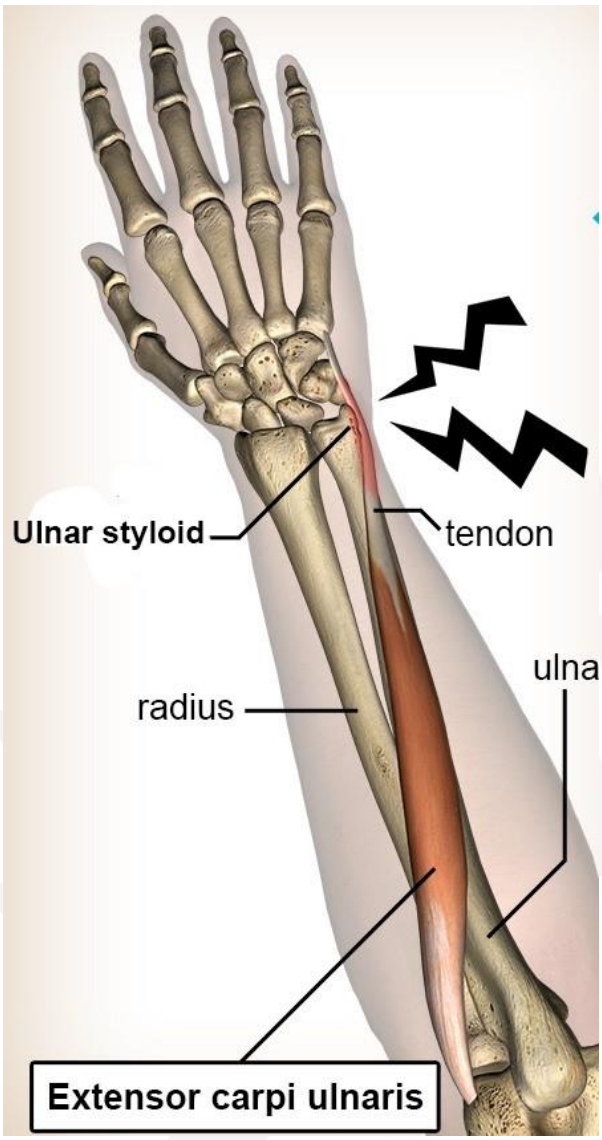
Where is the ECU tendon located?

ECU originates from the lateral epicondyle of the humerus and inserts into the base of the 5th metacarpal. It lies in the sixth dorsal wrist compartment, which is the most ulnar one. The extensor retinaculum sits across the dorsum of the wrist and divides the extensor tendons into different compartments. The extensor retinaculum acts as a pulley and stops the tendon from bowstringing, holding it close to the bone over the ulnar styloid groove. As its name suggests, the ECU tendon extends the wrist in an ulnar-ward direction.

What causes ECU tendinitis?

When the forearm is in full supination (palm facing up), the ECU tendon sits quite dorsally, whereas in full pronation (palm facing down), it moves more ulnarward (lying in the ulnar groove, it moves as the ulnar rotates). Tension on the extensor retinaculum and subsheath is greater during activities performed in full supination. Tension is even greater when the movement includes wrist flexion and ulnar deviation. Usually, ECU tendinitis arises when there is repeated stress to this area of the wrist, from repetitively performing an activity requiring wrist flexion/extension (particularly in supination, and often with ulnar deviation). Repetitive friction of the tendon under the pulley results in the pulley and or tendon/sheath becoming inflamed. The more inflamed these structures become, the more they swell, which in turn increases the friction / irritation, so it becomes a vicious cycle.

There may be associated underlying tendinopathy. Reactive tendinopathy may be the result of forceful loading or direct trauma. The tendon remains structurally intact, but thickens and becomes stiffer. Tendon disrepair may occur with ongoing excessive loading – the structure of tendon itself begins to change, with greater matrix breakdown and increased vascularity. Degenerative tendinopathy is more common in older athletes due to chronic overloading. The tendon no longer efficiently adapts to load, thus collagen becomes progressively disorganised, with advanced matrix breakdown, which can lead to partial tear and rupture.



What are the features of ECU tendinitis?

Patients will usually present with pain at the ulnar side of the wrist, most often over the ulnar styloid. It is painful with movement of the wrist and the sixth dorsal wrist compartment is usually tender to palpate over or just distal / proximal to the ulnar styloid. There may be swelling / redness / heat (not

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always present). If there is instability or injury to the supporting subsheath, the client may often report a snapping or popping sensation over the ulnar groove when they rotate the forearm.

What are the risk factors for ECU tendinitis?

ECU tendinitis, tendinopathy or instability may be sports related (e.g. tennis, golf, rugby), and players are more at risk if there is already some instability. Sometimes it is as the result of one acute sharp wrist flicking movement, or even as the result of a direct blow to the ulnar styloid. ECU tendinitis is also commonly seen in those with Rheumatoid Arthritis. Instability can occur when there is disruption of the supporting structures (ECU subsheath). This most commonly occurs when moving between pronation and supination, with the wrist flexed and ulnar deviated (think tennis, golf, rugby).

How is ECU tendinitis diagnosed?

Observation and palpation: Look for swelling / redness / heat (not always present) and palpate for tenderness over the ECU tendon at the level of the ulnar styloid. Sometimes the muscle belly itself is also painful. When the tendon is subluxing, you may be able to palpate the snapping of the tendon as it pops out of the ulnar groove.

ECU synergy test: The patient's elbow is resting on the table, with forearm fully supinated and elbow at 90deg flexion, wrist neutral and fingers fully extended. The surgeon holds the patient's thumb and long finger with one hand, while palpating the ECU tendon over the ulnar styloid with the other. The patient then tries to extend his / her thumb against the surgeon's resistance. A positive test is when their pain is reproduced over the ECU tendon at the ulnar aspect of the wrist.

Imaging: X-rays may occasionally rarely show some calcification around the tendon. Inflammation of the tendon can be visualized by ultrasound or an MRI scan. Ultrasound scans can give quick and accurate results, as they will show thickening to the tendon / sheath, increased vascularity, inflammation of structures, etc., and dynamic USS may be able to demonstrate if there is some instability.

What treatment options are available for ECU tendinitis?

Education / activity modification: This is the mainstay of treatment. Patients need to understand the anatomy and bio/pathomechanics of this condition, so that they can easily learn to modify activities so prevent symptom exacerbation. They should avoid or modify activities demanding repetitive wrist extension, or for those with an instability, avoid pronation / supination with wrist flexed and ulnar deviated (i.e. where the ECU is most unstable).

Splinting: Wearing a splint provides the tendon a period of rest and allows the inflammation to subside. Wearing a splint can really help the patient to understand what activities are using the provocative positions / movements. The splints are designed to relax the ECU tendon by keeping the wrist in slight extension and ulnar deviation.

Anti-inflammatory modalities: You may like to use ice and a topical anti-inflammatory cream in the acute stages to decrease the inflammation. In the subacute and later stages, many patients find the use of heat more soothing. The use of anti-inflammatory medication combined with splinting and activity modification can help in mitigating symptoms fast.

Corticosteroid injection: In 75% of cases, patients settle with full time splinting and NSAIDs. If this is unsuccessful after 6 weeks, steroid injections could be considered as about 98% settle with corticosteroid injection into the sixth dorsal wrist compartment.

Surgery: Surgical decompression/ debridement of the ECU tendon/sheath is rarely required in patients that have persistent pain and swelling for more than six months and have failed all conservative measures.

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