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Tendinopathy in the Wrist

Definition

Tendinopathy, also known as tendinitis, is a tendon disorder that results in pain, swelling and impaired function. The **most common tendinopathies** in the wrist are:

- **De Quervain's** Tendinitis on the thumb side of the wrist where the abductor pollicis longus (APL) and extensor pollicis brevis (EPB) tendons pass.
- **Extensor carpi ulnaris** (ECU) on the little finger side of the dorsal wrist.
- **Flexor carpi radialis** (FCR) on the flexor side of the wrist.

Causes

Overuse and injury can lead to interruption of the membrane between tendon and the sheath it runs through. This can lead to **friction and tendinopathy.** This causes collagen degradation within the sheath and tendon which responds with fibrocartilage metaplasia and vascular ingrowth. **Tendons are at particular risk where they change direction acutely or pass through narrow anatomical tunnels** as it increases the forces on them.

Risk Factors

Risk factors include **diabetes, arthritis and being female**. **De Quervain's is associated with pregnancy and the post-partum period** due to repeated lifting of the child.

Symptoms

De Quervain's:

- Pain that radiates into the thumb, associated with wrist and thumb movement toward the ulna;
- Tender swelling at the point of the wrist near the base of thumb;
- Clicking can occur with thumb movement.

ECU Tendinitis:

- Pain and swelling on the ulnar side of the wrist;
- Worse with gripping and heavy activities;
- Can be caused by injury or gradually develop with overuse;
- Altered sensation on ulnar side of the hand is possible due to the dorsal sensory branch.

FCR Tendinitis:

- Pain and swelling on the radial volar side of the wrist;
- Worse with wrist flexion and radial deviation.

Diagnosis

De Quervain's is diagnosed with history and examination:

- Tender swelling at the radial styloid;
- Positive Finkelstein's test, where the thumb is grasped with the fingers and the wrist deviated toward the ulna.
- X-ray may be used to help exclude other diagnoses including thumb arthritis.

ECU Tendinitis:

- Tenderness and swelling along the ECU;
- Increased pain with resisted ulnar deviation;
- **Can be difficult to differentiate between pain from the triangular fibrocartilage complex or ECU subluxation;**
- Unloading the TFCC with resisted radial deviation may reduce pain from the TFCC;
- Subluxation of ECU should be checked during pronation and supination;
- X-rays comparing both wrists, with the shoulder and elbow at 90º, will identify previous bony injury and abutment from a long ulna.
- **MRI may help differentiate** these pathologies.

FCR Tendinitis:

- Tenderness and swelling along the FCR tendon;
- Increased pain with resisted wrist flexion;
- Can be associated with scaphotrapezial arthritis which should be identified with x-ray, as osteophytes irritate the overlying FCR tendon;
- Ultrasound and MRI may help confirm the diagnosis.

Treatment

Nonoperative management:

- Similar for all tendinopathies and should be trialled first;
- Nonsteroidal **anti-inflammatories** (NSAIDs: Ibuprofen or similar). A topical NSAID may have less side effects;
- **Activity modification** and avoiding activities that cause pain;
- **Splinting and tendon gliding exercises** (Supervised by a hand therapist).

De Quervain's:

- **Cortisone injection is successful in >60% of cases;**
- Splinting does not improve this;
- Failure is more common when symptoms have been present for >6 months or there is clicking of the tendons within the first dorsal compartment;
- **Surgical release of the first dorsal compartment is successful.** Ongoing pain and dysfunciton is most commonly associated with failure to identify the separate compartment of the EPB tendon, present in 40% of cases.
- Complications are minor and rare, including:
    - Clicking associated with subluxation of the tendons over the radial styloid;
    - Painful scar;
    - Superficial radial nerve damage.

ECU Tendinitis:

- **Cortisone injection should be considered**, but there is a small risk of tendon rupture;
- **Open surgical release and debridement of irritating structures can be successful in patients where nonoperative management has failed.** The surgeon and patient should be prepared for simultaneous procedures to deal with the TFCC and to stabilise ECU back in it's groove. Both require postoperative immobilisation.
- The dorsal sensory nerve branch can be injured.

FCR Tendinitis:

- **Cortisone injection should be considered,** but care taken due to the close proximity of the radial artery and its branches;
- Cortisone injection **can precipitate FCR rupture** but resolution of symptoms is typical, with no loss of function;
- **Open surgical release** and debridement of bone impinging on the tendon is **generally successful** when nonoperative management has failed. Tendon rupture can occur when a degenerative tendon is debrided. Care must be taken to preserve superficial nerve branches but complications are relatively rare.

Prevention

A healthy lifestyle and staying mobile is the best way to prevent tendinopathy. Nonoperative treatment options may prevent progression and reduce the need for intervention.

Written with the help of:

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