

DE QUERVAIN'S DISEASE

They are inflammatory in nature, although current evidence indicates that mechanical and degenerative factors are more important. Corticosteroid injections provide relief in 60% or more of cases; however, the duration of their effectiveness remains uncertain. Surgical release of the stenotic pulley or sheath is curative in well over 90% of cases; complications of surgery are rare, and relief is long-lasting.

Etiology

Most tendon disorders in the hand and wrist are idiopathic in nature. Symptoms usually begin spontaneously, without any antecedent trauma or change in activity level. Patients will occasionally report that they have performed unaccustomed manual activity or experienced mild local trauma in the days or weeks preceding the onset of symptoms. Individuals with diabetes mellitus are predisposed to tendon disorders, trigger finger in particular, although the biological basis for this is unclear.

The relationship between upper extremity tendon disorders and workplace activity has been particularly contentious, with obvious implications regarding causation and, ultimately, compensation. Diagnostic criteria for many work-related disorders remain controversial, and this issue continues to confound many studies that suggest a relationship between force or, less consistently, repetition and possible tendonitis.

A recent systematic review of 18 papers [2] focusing on evidence that might support compensation of workplace disorders has highlighted the relative lack of data to support the attribution of work-relatedness to complaints of tenosynovitis. Factors that have been found to have the highest predictive value for identifying an individual likely to develop upper extremity tendonitis include mainly patient-related and few job-related factors, including age greater than 40.

Pathophysiology

Both trigger finger and de Quervain's disease is the absence of inflammation.

There is increasing disorganization or breakdown of the inner gliding layer of the pulley in the pathologic state. Chondroid metaplasia of the inner layer is frequently.

The extensor retinaculum in patients with de Quervain's disease also demonstrated increased vascularity and deposition of dense fibrous tissue that resulted in thickening of up to 5 times that seen in controls. This recent study also noted marked accumulation of mucopolysaccharide, an indicator of myxoid degeneration, but not inflammation. Acute inflammatory cells were not encountered, and macrophages and lymphocytes were absent or seen only rarely.

In the aggregate, our current knowledge seems to indicate that trigger finger and de Quervain's disease are primarily degenerative or reactive processes related to abnormal mechanical stress on the sheath and tendon within.

The question remains: Are some of these tendon disorders primary inflammatory processes, or is inflammation, when present, secondary to stenosis and mechanical stress on the tendon?

The available histologic evidence calls into question the appropriateness of the terms tendonitis, tendovaginitis, and tenosynovitis in most commonly encountered clinical settings; however, these terms are firmly entrenched in the literature and are not likely to be abandoned. Tendinopathy has come to be strongly associated with intrasubstance degeneration of extrasynovial tendons, usually at or near their entheses, as seen in epicondylitis or rotator cuff disease.

Tendovaginitis might be the most accurate than tendinitis

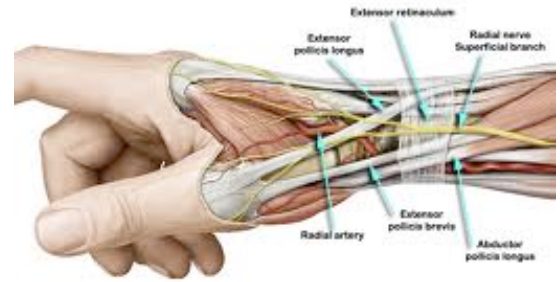
Surgical anatomy

APL (inserted to the base of I Metacarpal) and EPB to the base of proximal phalanx

In 20 % 2 tendons in separate tendon sheath in the I compartment ie subcompartment[30% two tendon may travel in separate tendon sheath]

EPB may be absent in 7% and APL may be 2 or more tendon in 75%

Superficial radial nerve pierces the deep fascia 1 inch proximal to the wrist joint into 3 branches and run superficial to the I compartment tendons.



Demographic

Higher rate of this disorder (2.8 cases per 1000 person-years) in women compared to men (0.6 cases per 1000 person-years).

Usually age greater than 40

More common in black race.

It has been found that the EPB tendon was significantly more distal and had significantly greater bulk and tethering effect when the thumb was flexed and adducted and the wrist ulnarly deviated compared with other wrist positions.

These results suggest that an abnormal Finkelstein's test reflects symptoms related to the EPB tendon more than to the APL.

Occupation [6]: The occupations of patients, in decreasing order: were packer (10 patients), domestic (9), secretary (7), machine operator (6), computer engineer (3), teacher (2), hospital orderly (2), sale person (2), carpenter (1), and business executive (1).

The other 20% did not demonstrate a physical basis for their dissatisfaction, but all were either receiving workers' compensation benefits or were being treated for depression and other psychosomatic illnesses.

Clinical Examination

1. Swelling and tenderness
2. Pain on active abduction and extension of the thumb
3. Positive Finkelstein test: thumb in palm and now ask the patient to deviate ulnarwards at wrist



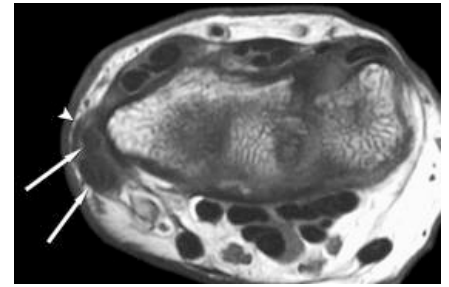
Differential Diagnosis

- 1) Intersection syndrome (Canoeist arm): Paratendinosis where the musculotendinous part of APL and EPB pass over the tendons of "ECRB and Longus" [ie., I over II compartment]
2. Brachio radialis tendonitis
3. Radial Nerve compression syndrome
4. OA of Carpometacarpal joint
5. Scaphoid problem



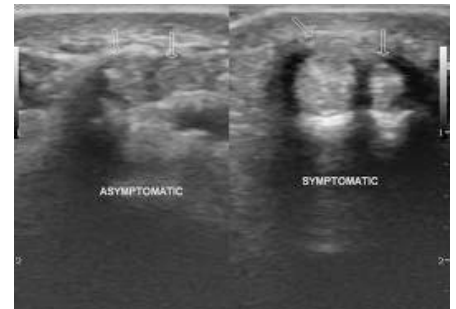
MRI

Shows fluid in the I extensor compartment



Ultrasound

Shows fluid in the I extensor compartment and local cortisone can be given at the same time.



Splint

With Thumb spika.

Recently its routine use is questioned

Not routinely required



Corticosteroid injections

Corticosteroid injections have been used as a mainstay of nonsurgical treatment for both trigger finger and de Quervain's disease for many years with reasonable success, although the absence of histologically documented inflammation in both of these disorders makes their mechanism of action uncertain.

A recent review prospective, randomized trials of adults: 60 to 90% good outcome.

Younger age, insulin-dependent diabetes mellitus, and involvement of multiple digits were associated with a higher rate of treatment failure.

Corticosteroid injection of the first dorsal compartment for treatment of de Quervain's disease is at least as effective and might provide longer duration of relief than injection for trigger finger. Injections have been demonstrated to be superior to splinting alone, and concomitant splinting does not seem to add to the success of injection alone.

Despite our familiarity with corticosteroid injections, we have no knowledge whatsoever regarding the intermediate-or long-term results of corticosteroid injections.

Surgery

Operative when non-operative fails

Longitudinal incision

Identify Superficial radial nerve and protect

Divide and excise the sheath; look for anomalous subcompartment

Complication: Keloid, neuroma, wrong diagnosis, and incomplete surgery

Outcome

Steroid injection: One or two local injections of 1 ml triamcinolone acetonide 10 mg/ml is an effective method of treatment provided by general practitioners.

No serious adverse events such as tendon ruptures or deep skin infections were observed. The most frequent reported minor side effects were hot flushes and steroid flare. An increase in pain, or flare reaction, in the days following a steroid injection was noted in 33% of patients.

94 patients treated by surgical release for de Quervain's disease at an average 15.7 year follow-up. Six perioperative complications, including 4 transient lesions of the radial sensory nerve, resolved spontaneously. Studies continue to find that a separate subcompartment for the EPB tendon is much more common in patients treated surgically for de Quervain's disease (102 of 143 patients, 71%).

A recent study [6] showed at 3 years there were 2 patients with recurrence of de Quervain's tenosynovitis (5%), 1 with radial sensory nerve injury (2%), and 1 with severe scar tenderness (2%). Complication was found to be significantly associated with patient dissatisfaction after surgery. A long duration of symptoms before surgery (!10 months) was significantly associated with patient satisfaction. The cure rate of surgery was 91%.

Reference

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