

# De Quervain's Tendovaginitis Stenosans in Jordanians

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## Abstract

## Objective

To study the De Quervain's Tendovaginitis Stenosans in Jordanians for triggering, septation and the presence or absence of tendons and their number.

## Methods

We operated on sixty-two wrists with the diagnosis of De Quervain's Tendovaginitis Stenosans, the mean age was 46 years old ranging from 28 to 77 years, amongst them were 44 females and 17 males.

The right hand was the one affected in 37 and the left in 25, one of them had Bilateral. The dominant hand was affected in 35 cases while, the rest were not recorded. Occupation has some bearing as it has ranged from housewives, hairdressers, office secretaries, managerial jobs, heavy labor workers, handy men, farm hands and recent pregnancy and child birth.

## Results

Twelve of the cases were of the triggering type; two of them had full septation, while three had partial septation. As for nodularity, five demonstrated a nodule in the Abductor Pollicis Longus (APL) or Extensor Pollicis Brevis (EPB). Three had synovitis of Abductor Pollicis Longus and four had no nodularity or synovitis. Of the remaining fifty, 18 had full septation and a partial septation in 9, while the rest were in a single compartment. The number of tendons varied, fifty-five had a single (EPB) with no cases of APL absence.

However, eighteen had one APL tendons, 33 had two, while six had 3 -4 or more slips of tendons. Fifty-eight patients of them attended for follow up. Forty-seven had full satisfaction; two reported scar hypertrophy, scar adherence in 3 and two cases of dysesthesia in the Superficial Branch of the radial Nerve (SBN).

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## Conclusions

First De Quervain's stenosing tendovaginitis is associated with the first dorsal compartment stenosing tendosynovitis. Secondly, The triggering type is common and will not be diagnosed unless tested for by resisted thumb abduction and extension followed by flexion and abduction. Thirdly, The triggering type may represent a severe form of De Quervain's tenosynovitis. Lastly, we recommend surgical release and the separation of all slips of both tendons with septum excisions to get the maximal benefit of reconstruction.

## Keywords

De Quervain's stenosing tendovaginitis, Abductor Pollicis Longus (APL), Extensor Pollicis Brevis (EPB), Superficial Branch of radial Nerve (SBN).

## Introduction

Sixty two wrists with De Quervain's stenosing tendovaginitis underwent surgical release by one surgeon between 1999 and 2003 for sixty one patients. Results were analyzed and twelve of them had the triggering type; eighteen had complete septation while nine had a partial one. Complications were few, yet scar hypertrophy was found in two, plus scar adherence in three. Two suffered from dysesthesia of the superficial branch of the radial nerve.

On more than one occasion patients were referred to our hand clinic with an x-ray of the wrist to show a nodule (which they call half an olive) over the first dorsal compartment (which they think is a bony prominence) for excision.

As stated by the Greek master Socrates: He who first gave names to things gave them according to his concept of what they signified to him if erroneous, are we not being deceived?

The term trigger finger (Schnellenden finger) was coined by De Quervain in 1895<sup>1,2</sup> for the condition of narrowing of the tendon sheath with simultaneous nodular thickening of a tendon in stenosing tendovaginitis of the first dorsal compartment of the wrist. Chow<sup>3</sup> (1979) was the first to report a triggering one in a child in 1979, which was due to an aberrant muscle belly, while Vegas<sup>4</sup> (1986) followed with a report on two cases. Since then reports of triggering De Quervain have been accumulated.<sup>5, 6, 7, 8</sup>

## Materials and Methods

In a 5 year period ranging from the first of January 1999 to the 31st of December 2003, 62 wrists were treated with the confirmed diagnosis of De Quervain's stenosing tendovaginitis in 61 patients.

The criteria for diagnosis were:

1. History of pain over the radial aspect of the thumb, aggravated by use.<sup>1-5</sup>
2. Sharply localized tenderness over Abductor Pollicis Longus (APL) and Extensor Pollicis Brevis (EPB) as they cross the radial styloid.<sup>1, 6, 8, 10</sup>
3. Positive Finkelstein's test in all cases.<sup>10</sup>
4. ± A pronounced swelling over the radial styloid.<sup>3-5</sup>

There were 44 females and 17 males in this series; their average age was 46 (ranging 28-77). The right hand was unilaterally involved in 37 patients and the left in 25 with one bilateral. In 42 patients, the dominant hand was affected and in 15 the none dominant hand, the rest were not recorded.

As for the occupation they range from housewives to hair dressers, office secretaries with different desk and managerial jobs, heavy labor workers, handy men, farm hands.

**Recent Childbirth and Pregnancy:** The onset of the condition has some relation in many of our cases to strenuous activity, a fall on an outstretched hand, or direct trauma to the wrist. It has also been linked to recent intravenous infusion with skin contusion, early Osteoarthritis (OA) of the first Carpo-Metacarpal (CM) joint, trigger thumb on the same side or on the other side, uni or bilateral Carpal Tunnel (CT) and volar wrist ganglia.

Conservative management modalities consist of splinting, modification of activities, non steroidal anti inflammatory drugs with physiotherapy modalities of cryotherapy in the acute stage. Phonophoresis with ultrasound is used to drive topical non-steroidal anti-inflammatory drugs deep into the tissue with exercises which start as a gentle active and passive range of motion, followed by strengthening exercises which are gradually upgraded. In the later stages of the program, eccentric strengthening should be added. All cases failed to respond to conservative management for a period of 4-6 months.

No trial of compartment reconstruction was attempted after surgical release.

## Results

Sixty-two (62) wrists with the diagnosis of De Quervain tendovaginitis underwent compartment surgical release. Twelve (12) of them were the triggering type and fifty (50) were not.

- The triggering type demonstrated complete septation in two cases with 3 partial ones and was not demonstrated in the rest.
- As for nodularity, five (5) of all of them demonstrated a nodule in the APL or EPB or both.
- Three (3) had synovitis of APL, and in four (4) there was no demonstrable nodularity or synovitis to cause the triggering.
- In the remaining fifty (50) cases complete septation was noticed in 18 patients and partial septation present in 9, the rest were in a single compartment.
- The EPB was present in all cases.
- As for the number of tendons, no cases of EPB absence were seen in our series. 55 cases had a single EPB, while APL in one patient, single EPB for eighteen (18), thirty-three (33) for two (2) and six (6) for three (3) APL and none for four (4) or more slips.
- Double tendons were present in seven (7) cases with five had a single APL and two (2) had double (2) APL.

Fifty-six (56) patients appeared for follow up. Forty-seven (47) of them reported full satisfaction.<sup>11-13, 20-22</sup>

**Complications of Surgery:** Scar hypertrophy was found in two (2) cases. The scar tissue was a shade darker than normal skin.

- Adherence of the tendons to the scar was noticed in 3 cases which improved within 6 months.
- Two (2) cases developed dysesthesia in the Superficial Branch of the radial Nerve (SBN) and damage was absent.
- Popping, snapping, clicking or abnormal rubbing at the operative site happened in two (2) patients who declined reconstruction of their subluxation.<sup>14-16, 23</sup>

## Discussion

The first dorsal compartment of the wrist joint lays over the radial styloid, which passes through the tendons of APL and EPB, deep into the extensor retinaculum.

In most instances, the APL is formed of multiple tendon slips. Bunnell<sup>25</sup> reported twelve out of twenty two patients to have one or more aberrant slips. In 17-40% of people in most series the APL and the EPB are found in one single compartment.<sup>8,10,12,13,14,15,17,18,19</sup>

Sometimes, the first dorsal compartment is divided by a vertical septum between the radial styloid and the extensor retinaculum.<sup>17,25</sup> As early as 1930, Finkelstein<sup>10</sup> (1930) reported abnormal septation in the compartment in three (3) out of twenty four (24) patients while Jackson et al.<sup>8</sup> (1989) reported septation in 120 cases out of 193. This septation provides two separate compartments, one palmar for APL tendons and one more dorsal for the EPB tendon. A separate osteotendinous compartment can contain a slip of the APL tendon, and APL tendon slips can also be found in the dorsal compartment with the EPB tendon. In 1992, Elliot<sup>17</sup> dissected (156) cadavers and found the following: one absent APL, 48 had single tendons, 87 had two tendons and 20 had three tendons.<sup>14-17</sup>

Over a period of 5 years, we treated 62 cases of De Quervain stenosing tendovaginitis, with 12 triggering cases and 50 non-triggering cases. All cases underwent surgical release with no trial of conservative management.

One might wonder why we opted for a shortcut in this treatment, yet experience shows that most if not all these cases will never resolve completely with conservative management after 4-6 months.

De Quervain's tenosynovitis is associated with the findings of pain over the radial styloid accompanied by first dorsal compartment tenderness and marked with radial wrist swelling in addition to a positive Finkelstein's test.

Pain is usually experienced over the first dorsal compartment during resisted thumb abduction, while triggering can be overlooked unless one tests for it. It is important to emphasize that triggering can result from constriction and nodularity of the EPB or APL tendons or both and tenosynovitis.

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