

ROLE OF ULTRASOUND-GUIDED CORTICOSTEROID INJECTION IN THE TREATMENT OF DEQUERVAIN'S TENOSYNOVITIS

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Introduction

De Quervain's tenosynovitis is inflammation of the tendons and enveloping sheaths of the first extensor compartment of the wrist which harbors the abductor pollicis longus and extensor pollicis brevis. It is a common overuse tendinopathy that affects the patient's daily activities and quality of life. It is characterized by radial sided wrist pain aggravated by thumb movement.

The utilization of ultrasound not only allows confirmation of diagnosis but also its ability to guide the injection under real time visualization offers a higher safety profile. The main sonographic signs include increased retinacular thickenss, increased tendon thickness and peri-tendinous fluid. An intra-compartmental septum which is a variant affecting the management plan can be confidently diagnosed.

Management is usually conservative with rest, modification of activity, pain control by analgesics and steroid injection. After failure of these measures, surgical treatment may be offered. Ultrasound guided steroid injection technique proved to alleviate related pain and improve functional status.

Comparison with the contra-lateral sound hand was done by ultrasound assessment of the normal tendons. Baseline VAS and Quick DASH were recorded.

Ultrasound guided injection of a mixture of 1ml triamcinolone (40mg/ml) and 1ml lidocaine. In patients where an intra-compartmental septum was detected, the needle was re-directed into each compartment separately.

Follow up was performed after 4 weeks clinically by VAS and Quick DASH scores and radiologically by ultrasound to reassess the previous parameters.

Results

Nine out of 40 (22%) patients had an intra-compartmental septum detected by ultrasound. The average retinacular thickness in baseline ultrasound was 2.26 ± 0.33 mm, 4 weeks after guided corticosteroid injection, the average thickness was reduced to 1.35 ± 0.21 mm. Similar statistically significant reduction in EPB and APL tendon thickness was noted. Baseline mean VAS score was 7.98 ± 0.73 and after 4 weeks it decreased to 3.38 ± 0.90 while the baseline mean Quick DASH score was 65.94 ± 9.07 and after 4 weeks it decreased to 19.19 ± 5.37 .

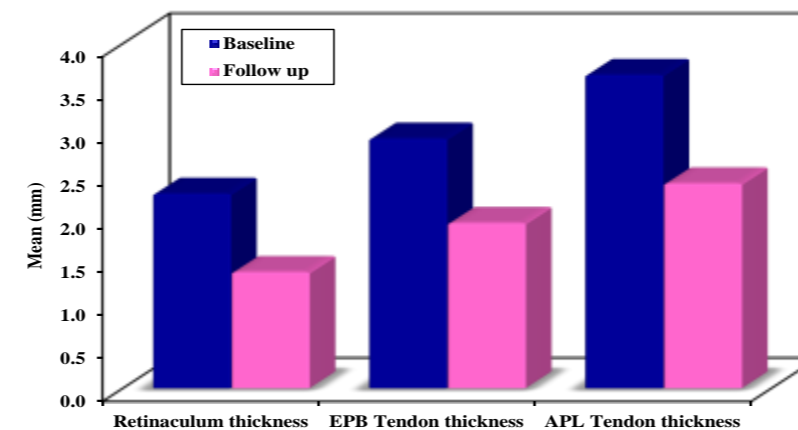


Figure 1: Comparison between baseline and follow up according to different parameters (n = 40).

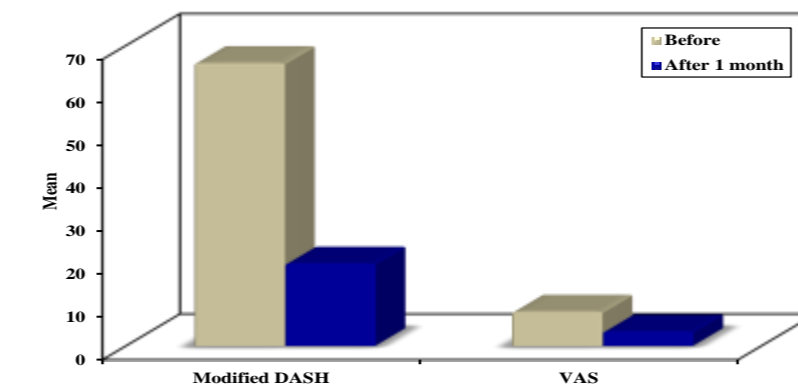


Figure 2: Comparison between before and after 1 month according to modified DASH and VAS (n = 40).



Figure 3: Ultrasound axial view of the first dorsal compartment showing an intra-compartmental septum along.

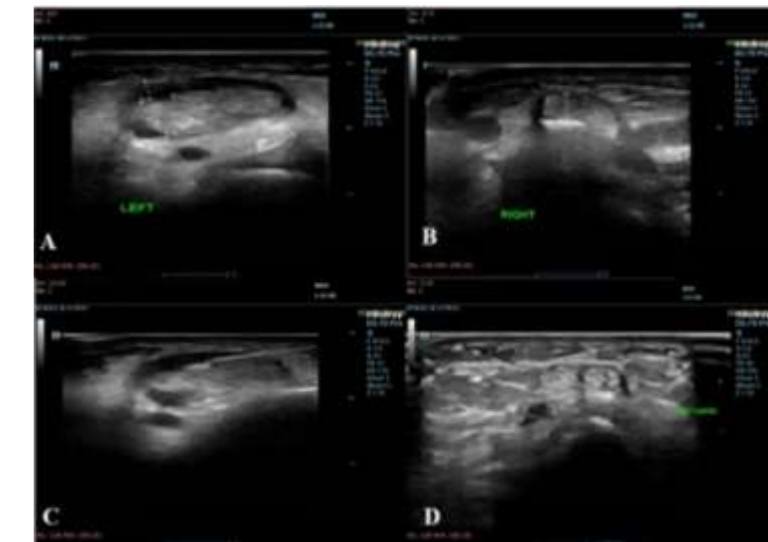


Figure 4: Ultrasound axial view of the first dorsal compartment. (A) Baseline ultrasound of diseased hand (left) showing increased retinacular thickness. (B) Ultrasound of the normal right hand showing the normal thickness of both tendons. (C) Needle noted in sub-retinacular plane. (D) Follow up of left hand after 4 weeks showing reduced thickness.

Aim of the Work

The aim of this study was to assess the clinical and radiological outcome of ultrasound guided corticosteroid injection in the management of De Quervain's tenosynovitis.

Patients and Methods

PATIENTS: This study was conducted on 40 patients with unilateral De Quervain's tenosynovitis referred to the Radiology Department from the Hand clinic in Nariman Hospital.

METHODS: Patients were subjected to meticulous ultrasound assessment to confirm the diagnosis. A 12 MHz high frequency linear probe (Mindray DC70 Pro, Shenzhen, China) was used. The key ultrasound findings were recorded including presence of edema, measurements of retinacular thickness, thickness of the APL and EPB tendons. An inter-compartmental septum was noted if present.

Conclusion

- Measurements of the retinacular thickness and tendon thickness are potential quantitative parameters for diagnosis.
- An intra-compartmental septum can be diagnosed with ultrasound and affects the injection technique.
- Real time needle visualization in ultrasound guided injections aids accurate needle placement and improves patient's outcome.