

Intra-Sheath Versus Extra-Sheath Image-Guided Corticosteroid Injection in Patients with Trigger Finger: Results from a Triple-Blind Randomized Control Trial

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Iranian Journal of Radiology. 2014 March; 11(S1): e21313 , DOI: [10.5812/iranjradiol.21313](https://doi.org/10.5812/iranjradiol.21313)

Article Type: Research Article; *epub:* Mar 1, 2014; *ppub:* Mar 2014

Abstract

Background: The impingement of flexor tendon sheath in A1 pulley, named as “trigger finger”, leads to pain and difficulty during flexion and extension. Local corticosteroid injection into the affected tendon sheath is the treatment of choice. To the best of the authors’ knowledge, no study has been conducted so far to compare intra-sheath and extra- sheath corticosteroid injection in patients with trigger finger.

Objectives: The aim of this study was to determine if injection directly into the tendon sheath will make any difference in the long term outcome of the patients.

Patients and Methods: One hundred-sixty-six patients with the diagnosis of trigger finger were enrolled based on the following clinical criteria: 1, Tenderness in A1 pulley; 2, Pain and discomfort during flexion and extension; 3, Presence of

nodule. The Quinnell scale was used to evaluate the severity of the disease before the launch of the treatment. Thereafter, with a random block method, patients were divided into two groups: Group A (n=83), with ultrasound-guided extra-sheath corticosteroid injection and Group B (n=83), with ultrasound-guided intra-sheath corticosteroid injection directly into the sheath. All patients have been followed up to one year according to the following timeline: 3, 6, 12, 24, and 48 months after the treatment. The Quinnell scale was obtained again during each follow-up session. If patient's score did not change until the third visit, either reinjection or surgery would have been considered as the next proper treatment option, if any.

Results: The ethic committee of our center had approved of this survey, and written informed consent was obtained from all patients. The mean age of the enrolled patient was 49.9 years. Right hand was more commonly involved in our patients. No tendon rupture, infection, fat necrosis, finger necrosis, hematoma, nerve rupture, or A1 pulley injury was detected. There was no statistically significant difference between the groups A and B in the frequency of required injections at the follow up sessions, based on their lack of improvement in the Quinnell scale. The follow-up sessions, the patients' group, and the corresponding number of patients in whom reinjection was required were as follows: First follow-up session, 2 cases in group A, 1 case in group B; Second follow-up session, 10 cases in group A, 7 cases in group B; Third follow-up session, no case in group A, 1 case in group B; Fourth follow-up session, 1 case in group A, 1 case in group B. Surgery was required to be done in none of our patients. Overall, the frequency of high Quinnell scales (scales 3 and 4) were reduced in all patients at the end of our study.

There is no significant difference between the patients with trigger finger who undergo intra-sheath corticosteroid injection and those with extra-sheath corticosteroid injection in their outcomes; thus, it will be postulated that the injected corticosteroid may sufficiently pass through the tendon sheath even though it is injected in an extra-sheath location. Given the fact that after injection under no ultrasound guidance, the injected corticosteroid may accumulate either in an intra- or extra-sheath location, the findings of our study suggest that blind injection might be as effective as ultrasound-guided intervention; albeit, at a lower cost burden.