Long-Term Effectiveness of Corticosteroid Injections for Trigger Finger and Thumb

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Purpose To analyze the long-term response to corticosteroid injection in the management of trigger digit.

Methods This was an observational study of a prospectively recruited series of patients with first-time diagnosis of trigger finger. Efficacy of the injections, comorbidities, digit injected, and related complications were compared and statistically analyzed.

Results A total of 71 digits were included in the study. The median (interquartile range) duration of follow-up was 8 years (range, 7.0−8.3 y). At final follow-up, complete remission of symptoms was obtained in 69% of cases. There were 37 trigger thumbs (52%), with a success rate of 81% compared with 56% in the other the digits. There were 11 patients with diabetes mellitus, and 16 fingers developed trigger finger after carpal tunnel syndrome surgery. We found no complications.

Conclusions Steroid injections were an effective first-line intervention for the treatment of trigger finger. At long-term follow-up, the success incidence may be as high as 69%. In this study, the efficacy of this treatment increases when treating the thumb compared with other digits. *(J Hand Surg Am. 2015;40(1):121−126. Copyright © 2015 by the American Society for Surgery of the Hand. All rights reserved.)*

Type of study/level of evidence Therapeutic IV.

Key words Thumb, digit, injection, trigger finger, corticosteroid.

TRIGGER FINGER IS A COMMON pathology in adults. It has a prevalence of up to 3%[1] and is more frequent in women.[2] In the vast majority of trigger fingers and thumbs, the site of obstruction is A1 pulley.

The goal of treatment is to reestablish smooth, painless, and full range of motion in the affected digit. Treatment options include orthoses,[3,4] corticosteroid injection,[5−13] percutaneous surgery,[4,14,15] and open surgery.[16,17] Operative therapies are effective but are associated with higher cost, longer absence from work, and the possibility of surgical complications.[18,19] Corticosteroid injection provides relief of symptoms in 47% to 92% of affected digits.[5,7−13,15] However, duration of follow-up is highly variable among the published studies, mainly ranging from 1 to 27 months.[20] The purpose of this study was to analyze the long-term response to corticosteroid injection in the management of trigger finger.

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MATERIALS AND METHODS

This was an observational study of a prospectively recruited series of patients with first-time diagnosis of trigger finger between April, 1998 and October, 2000. The inclusion criteria included age of 18 years or older, diagnosis of trigger finger of at least grade 2 according to the Quinnell classification,[21] duration

of symptoms of at least 3 months, and absence of previous treatment of the affected finger. All patients presenting with an allergy to any component of the injections or refusing treatment were excluded from the study. The diagnosis of trigger finger was made after we obtained a history of triggering and physical examination (pain over the flexor tendon, tenderness or nodule over the A1 pulley, stiffness, and reproducible locking or triggering).

All patients' fingers were infiltrated by the same surgeon following the same technique. Patients were injected with a mixture of 1.0 mL (20 mg) paramethasone acetate (derivate from dexamethasone) and 1.0 mL mepivacaine chlorhydrate 2%. The cost of a phial currently costs the hospital $0.92. Injections were performed through a palmar approach with a needle inserted parallel to the tendon fibbers at the A1 pulley level. The needle was introduced directly into the flexor tendon sheath only until slight resistance was felt. Then the patient was asked to wiggle the finger and slight grating could be felt at the end of the needle to ascertain its correct position. A paradoxical motion of the needle could be noticed if it was in the tendon. Then we injected the preparation, aspiring to place at least some portion of the solution within the sheath. No ultrasound or sonographic monitoring was used to confirm intrathecal placement. No adjuvant therapy or orthoses were applied and patients were instructed to resume normal activity. After the first injection, patients were reevaluated 2 weeks later to determine whether the injection had been successful for each individually treated finger. If they were asymptomatic, no further corticosteroid injections were applied. If trigger finger symptoms were still present, patients were offered a second corticosteroid injection. Patients who refused the second injection were referred for surgical release of the A1 pulley and were classified as failures. Two weeks after the second infiltration, patients were again evaluated. Those with trigger finger symptoms were referred for surgical release of the A1 pulley. Afterward, patients were reevaluated at 3, 12, and 36 months and at the final follow-up. Patients who did not attend final follow-up were contacted by telephone.

Variables recorded were age, sex, affected side and finger, comorbidities (including diabetes mellitus, carpal tunnel syndrome, hypothyroidism, and Dupuytren disease), number of injections performed, and follow-up. Success was defined as complete resolution of symptoms for the entirety of the follow-up period such that surgical intervention was not required. Failure was defined when the patient was referred for surgical release of the A1 pulley. Recurrence was defined when symptoms reappeared after a minimum of a 3-month symptom-free period or required additional injections, which were offered to this group of patients. Those who refuse the additional injection were also recorded as failures.

Continuous variables are expressed as mean and SD or median and interquartile range. We analyzed final outcome, defined as success or failure, according to the following variables: affected finger, diabetes mellitus, carpal tunnel syndrome, hypothyroidism, and Dupuytren disease. We compared variables using chi-square test or Fisher exact test when necessary. Statistical significance was set at the 95% confidence level ($P < .05$).

All patients signed informed consent agreeing to accept infiltration of corticosteroids. Because of the observational nature of the study, our institution did not require approval by the institutional review board.

RESULTS

A total of 72 patients met the inclusion criteria, 11 of whom were lost to follow-up (3 died and 8 did not attend the follow-up and could not be located via telephone). Thus, 61 patients (71 digits) were included in the study. Table 1 lists patients' age and sex, involved digit, and comorbidities.

At the 3-, 12-, and 36-month and final follow-up, complete remission of symptoms was obtained in 55 (77%), 52 (73%), 51 (72%), and 49 (69%) digits, respectively. Median (interquartile range) duration of the follow-up was 8 years (range, 7.0−8 y).

Forty-three digits were treated with a single injection and 28 with 2 injections. In the first group, the success incidence was 70%, whereas in the group that needed 2 injections the success incidence was 68%.There were no statistically significant differences between groups.

In 10 cases, symptoms recurred after a period ranging from the fourth to the 62nd month (mean, 17 mo) after treatment (Table 2). Of these 10 cases, 6 patients accepted an additional re-injection, 4 of whom achieved full remission of symptoms and 2 required surgery. In the other 4 cases that rejected a new infiltration, surgical release of the A1 pulley was performed. In all, the success incidence in the group of recurred trigger finger was 40%. Recurrences were more frequent in the group needing 2 injections (8 cases) compared with the group that received a single injection (2 cases).