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Some Observations on Corticosteroid Injection Therapy in Trigger Digit.

Dr. Mohd Rafeeq Wani[1], Dr. Imran Qayoom[2], Dr. Stanzin Sonam[3], Dr. Ghulam Nabi Dar[4]

[1]*Postgraduate scholar, Department of Orthopaedics, Government Medical College Srinagar.*
[2]*Postgraduate scholar, Department of Orthopaedics, Government Medical College Srinagar.*
[3]*Postgraduate scholar, Department of Orthopaedics, Government Medical College Srinagar.*
[4]*Consultant, Department of Orthopaedics, Government Medical College Srinagar.*

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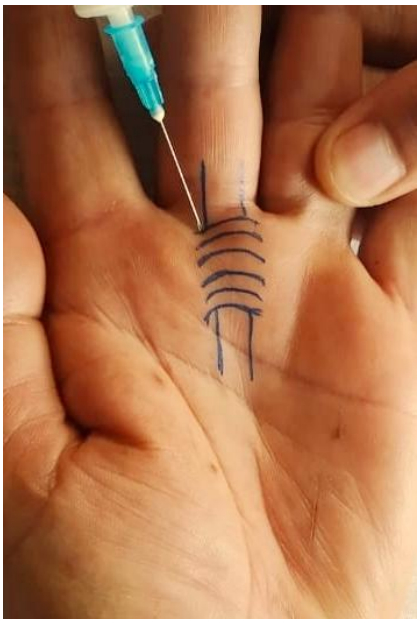
I. Introduction

Trigger digit is a common clinical entity affecting hand, encountered by orthopedicians in their daily practice. It can affect thumb or fingers. Trigger digit in adults, is stenosing tenosynovitis leading to inability to extend a flexed digit or flex an extended digit. This often produces a palpable ‘’triggering”. Thiscondition usually is seen in individuals older than 45 years of age.

The main pathology of trigger finger is a thickening of the first annular (A1) pulley because of occupational trauma, degenerative disorders or inflammation[(1,2)], leading to entrapment of the flexor tendon proximally to the pulley and making finger pain, swelling, extension difficult and a triggering sensation, all of which seriously affect the quality of life of patients[(3)].The nodule can be palpated by the examiner’s fingertip and moves with the tendon. The tendon nodule usually is just proximal to the annulus at the metacarpophalangeal joint level; however, in a rheumatoid patient, a nodule distal to this point may cause triggering.Trigger digit occurs more frequently in patients with diabetes mellitus, rheumatoid arthritis, carpal tunnel syndrome, Dupuytren's disease, hypothyroidism, mucopolysaccharide storage disorders, amyloidosis, and congestive heart failure[(4,5)]. Clinical presentation includes pain or discomfort over distal palm, locking or catching during movement of the affected digit, stiff digit, palpable nodule and tenderness over the A1 pulley. The diagnosis is made clinically.

Management of trigger digits include both nonoperative and operative methods. Nonoperative methods include stretching, night splinting, nonsteroidal anti-inflammatory medications, splinting, corticosteroid injections and combinations of heat and ice. Surgical treatment includes release of A1 pulley of the affected digit, either open or percutaneously. The mainstay of conservative treatment for trigger digit is local steroid injection into the tendon sheath. The merits if the local steroid injection arelow cost, minimal discomfort and easy to perform. Demerits include recurrence and need of multiple injections in some patients.The aim of our study was to determine the role ofcorticosteroid injections in the treatment of trigger digit, record of complications, particularly recurrence rate and the demographic profile of patients with trigger digits.



Materials and methods

The study consisted of a total of 25 cases presented at the hospital from February 2018 to march 2020 and was carried out in Hospital for Bone and Joint Surgery, Government Medical College Srinagar. Approval to carry out the study was obtained from Institutional ethical committee. Inclusion criteria were: patient with trigger digits with less than 3 digits affected in one hand and age >17 years. Maximum number of steroid injections given in the patients who were not cured after first injection was two. Patients who had already received corticosteroid injection and patients with uncontrolled blood sugar were excluded from the study. Preoperative fasting blood sugar levels were done in all the patients with diabetes mellitus. The area of the skin where injection was to be given, was cleansed with alcohol and the injection was given via a 23-gauge,

0.6-in. hypodermic needle. The syringe was filled with 0.2 mL (8 mg) of triamcinolone acetonide (tricort-40) and 0.6ml of 1% lignocaine forming total volume of 0.8 ml. The needle was inserted obliquely through the palmar skin at the A1 pulley region (shown in figure) and was advanced through the subcutaneous tissue, tendon sheath and tendon until bone was reached. Aspirate, then gently applying pressure to the plunger on the syringe, so that the infiltrate flows with ease into the flexor sheath. If resistance to flow was encountered, gently move the needle so that the tip is a fraction of a millimetre either deeper or more superficial to its initial position; when the lumen of the needle lies in the flexor sheath, the steroid will flow freely. After the injection, patients were followed up to a period of minimum 6 months. Patients were followed at 2 weeks, 4 weeks and final follow up was done at 6 month.

II. Results

There were total of 25 patients included in our study, with total of 32 digits affected. The average age of the patients was44.24% with a range of 25-62 years. The male to female ratio of the patients was 1: 2.75. Right hand was involved in 16(64%) patients. 18 of our patients had one finger involvement7 of our patients had two finger involvement. 5 of the patientswere diabetic, 1 patient had rheumatoid arthritis and 4 patients were hypothyroid. Out of 32 digits, 12(37.5%) had thumb involvement, 11(34.4%) had middle finger involvement, 5(15.6%) had ring finger, 3(9.4%) had index finger involvement and 1(3.15) had little finger involved.Out of 32 digits who received corticosteroid injection, 24(75%) were cured after the first injection. Of the 8 digits who were not cured after first injection, second injection was given after minimum of one month of the first injection. 4(50%) of these were cured with the second injection.At 6 months follow up, recurrence was seen in (17.8%)digits out of 28 digits who were cured. There was no case of infection or tendon rupture in any of our patients. Hypopigmentation at the injection site was seen at 2 injection sites.

Table 1: Results

Demography	Age group	25-62 years
	Males	28%
	Females	72%
	Male/female ratio	1/2.57
Comorbidities	Diabetes	20%
	Hypothyroidism	16%
	Rheumatoid arthritis	4%
Cure rate	First injection	75%
	Second injection	50%
Complications	Recurrence	17.8%
	hypopigmentation	6.25%
	Infection	0%
	Tendon rupture	0%

III. Discussion

Trigger digit is a common clinical entity that affects the quality of life of the patients negatively. Treatment options range from conservative methods to surgical release. Corticosteroid injection is successful practised method for the management of trigger digit. In our study, the affected population showed female predominance and was consistent with those of multiple other studies(6,7). Right hand was slightly more affected (64%). 20% of our patients were diabetic that may signify the association between trigger digit and diabetes. This finding was consistent with previous other studies(4,7).In our study,the efficacy of the first steroid injection was 75% which decreased to 50% forsecond steroid injection and the result is comparable to these studies in the literature(6,8). The recurrence rate in our study group was 17.8% at final followup.

IV. Conclusion

Based on the results of our study, we conclude that corticosteroid injection is a safe and effective method for the treatment of the trigger digit. It can be performed safely even at office setting. It is cost effective and has minimal complication rates. However, we are using a word of caution because of the small sample size of our study group, but looking on the various previous literature, it can be safely recommended.

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