

CLINICAL STUDY

Comparison of local steroid injection into carpal tunnel via proximal and distal approach in patients with carpal tunnel syndrome

Kamanli A¹, Bezgincan M², Kaya A²

Division of Rheumatology, Department of Physical Medicine and Rehabilitation, Firat University, School of Medicine, Elazig, Turkey. akamanli@hotmail.com

Abstract: *Objective:* Carpal tunnel syndrome (CTS) is the most common peripheral neuropathy presented to physicians. There are several non-surgical treatments methods, such as; splinting of wrist, physical therapy modalities, non-steroidal anti-inflammatory drugs (NSAIDs), injection of corticosteroids, etc. In this study, we aimed to compare the effects of proximal and distal approach to the carpal tunnel regarding the steroid injection application in patients with idiopathic CTS for confirmed nerve conduction studies (NCS).

Material and methods: A total of 19 bilateral CTS patients were enrolled in this study and randomly assigned into 1 of the 2 groups according to the local steroid injection (triamcinolone asetonide 20 mg), either via proximal (10 patients, 20 wrist, 1 M, 9 F) or distal (palmar) approach (9 patients, 18 wrist, 3M, 6 F) into the carpal tunnel. Clinical and NCS examination were done before and at 3 weeks and 3 months after the injection. Also, severity of night pain, muscle strength, disability by Boston carpal tunnel assessment score (BCTS), HAQ were assessed at baseline and at 3 weeks and 3 months after the injection. All patients were used hand-wrist splint during 3 weeks after injection.

Results: There were significant reductions in pain and disability scores between the baseline and follow-up periods. There was not a significant difference between the both groups. There were significant improvement in patients' global assessment in patients from the distal injection group. NCSs showed that electrophysiological improvement was slow.

Conclusion: This study showed that steroid injection from distal approach (palmar) into the carpal tunnel on patients with CTS is very comfortable, easy, effective and alternative (Tab. 3, Fig. 5, Ref. 11). Full Text in free PDF www.bmj.sk.
Key words: carpal tunnel syndrome, CTS, electrodiagnosis, steroid, local injection.

Carpal tunnel syndrome (CTS) is one of the most common peripheral neuropathy. It affects mainly middle aged women. CTS account for approximately 90 % of all entrapment neuropathies. It is due to an entrapment of the median nerve in the carpal tunnel at the wrist (1, 2). Neurophysiologic evaluations of the median nerve may be helpful in the diagnosis of CTS (3, 4).

There are several treatment options and they can be broadly categorized into surgical and non-surgical. Non-surgical methods are effective in patients with mild to moderate CTS. The various non-surgical methods include: splinting of the wrist, physical therapy, oral steroids, non-steroid anti-inflammatory drugs (NSAIDs), oral vitamin B6, local injection of corticosteroids with or without insulin and work place modifications etc (2).

Injection with corticosteroids is one of the many recommended treatments (1, 5). Established therapy has generally been decompression of the nerve, such as splinting and steroid injection into the carpal tunnel. These applications are frequently ef-

fective, although recurrences are common. In many studies it was reported that patients with CTS are first treated with corticosteroid injections proximal to the carpal tunnel before surgery is considered. Some of the techniques for such injection entail injection proximal to or not into the carpal tunnel (6, 7).

One of the common finding in the patients with CTS is that there is often a swelling at the volar side of the forearm, close to the carpal tunnel, which might contribute to the compression of the median nerve. Moreover, the risk of damaging the median nerve by injection into the narrow carpal tunnel is higher.

In this study, we aimed to compare the effects of proximal and distal approach into the carpal tunnel regarding the corticosteroid injection application in patients with idiopathic CTS.

Material and methods

Patients

The patients presented at the outpatient clinics of Firat University Hospital with a diagnosis of idiopathic CTS. A total of 19 bilateral CTS patients were enrolled in this study and randomly assigned into 1 of the 2 groups according to the local steroid injection (triamcinolone asetonide 20 mg), either via proximal (10 patients, 20 wrist, 1 M, 9 F) or distal (palmar) approach (9 patients, 18 wrist, 3 M, 6 F) into the carpal tunnel.

¹Division of Rheumatology, Department of Physical Medicine and Rehabilitation, Firat University, School of Medicine, Elazig, Turkey, and

²Clinic of Physical Medicine and Rehabilitation, State Hospital, Bingöl
Address for correspondence: A. Kamanli, MD, Firat Universitesi Hastanesi, FTR Klinigi, 23119 Elazig, Turkey.
Phone: +90.424.2333555, Fax: +90.424.2388096