



Effect of Taping on Pain and Functional Activities in Patients with Lateral Epicondylitis

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Abstract

Back Ground of the Study: Upper limb plays an important role in everyone's daily life and hand is the effector organ of the upper limb which supports it mechanically and allows it to adopt the optional position for any given action from the functional point of view. Lateral epicondylitis or tennis elbow is a common condition that usually affects patients between 35 and 55 years of age. It is proposed that the application of tape is a means, aims to alleviate pain, improve muscle function, and restore functional movements. Taping is not a substitute for treatment and rehabilitation, but is an adjunct to the total injury care program. The present study aims to find the effect of taping on tennis elbow patients.

Methodology: 30 acute stage lateral epicondylitis patients were randomly divided into two groups of each 10 participants. Experimental subjects were treated with McConnell's Y taping and both the group subjects received ultrasound therapy. The procedure is carried out on alternate days for a period of 2 weeks accounting for a total of 6 sessions for each participant. Pain and functional activities were measured by visual analog scale and patient rated tennis elbow evaluation questionnaire before the 1st session and at the end of 6th session.

Conclusion: It is concluded that McConnell's Y taping technique is an effective adjunct therapy to reduce pain and improve functional activities among acute stage lateral epicondylitis patients.

Key words: Lateral epicondylitis, Taping, Ultra sound therapy, Pain. Functional activities.

Introduction: Upper limb plays an important role in everyone's daily life and hand is the effector organ of the upper limb which supports it mechanically and allows it to adopt the optional position for any given action from the functional point of view¹. Lateral epicondylitis is a tendinopathy of the common extensor-supinator tendon of the elbow characterized by lateral peri-epicondylar pain².

Lateral epicondylitis is a painful condition affecting the tendinous tissue of the origin of the wrist extensor muscles at the lateral epicondyle of the humerus, leading to loss of function of the affected limb. Therefore, it can have a major impact on the patient's social and professional life³.

It is generally self-limiting, but in some patients it may continue to cause persistent symptoms, which can be refractory to treatment⁴. Epicondylitis is relatively common among working-age individuals in the general population. Physical load factors, smoking, and obesity are strong determinants of epicondylitis⁵.

In the study of rehabilitation, lateral epicondylitis is a frequently employed clinical model of musculoskeletal pain, treated by many physical therapists in a variety of clinical settings and the successful conservative treatment of lateral epicondylitis generally aims to relieve pain, control inflammation, promote healing, improve local and general fitness, and control force loads. It is proposed that the application of tape is a means, aims to alleviate pain, improve muscle function, and restore functional movements. Taping is not a substitute for treatment and rehabilitation but is an adjunct to the total injury care program⁶. In this study, the main objective is to compare the effectiveness of taping with ultrasound therapy and ultrasound alone on pain and functional activities among patients with lateral epicondylitis.

Methodology: 30 acute stage lateral epicondylitis patients fulfilled the criteria were selected for the study and randomly recruited into two groups (experimental and control) of each 10 participants through shuffled sealed envelopes. The participants were blinded to the group they were enrolled to. Both experimental and control group received ultrasound therapy, with pulsed duration of 1:4 and with an intensity of 0.8 Watts/Cm². Experimental group patients were applied taping along with ultrasound therapy. Taping technique is made more effective by Y stripping, the tape at distal end leaving room for index and middle finger. One end of Y is taken along the lateral aspect of the elbow, while the other end is curved towards the medial part. An anchoring tape is applied at the proximal end of the tape and another parallel band of tape is anchored for the muscle pull. Both the groups, received treatment for a period of 2 weeks on alternate days. Before starting the study process, all participants were familiarized with the study in general and the study aims and objectives. Outcome measures pain and functional activities were measured by visual analog scale (VAS) and patient-rated tennis elbow evaluation (PRTEE) respectively in the first and at the end of 6th session.

Data Analysis and Results:

The study aims to find and compare the effectiveness of taping with ultrasound and ultrasound alone on pain and functional activities in patients with acute stage lateral epicondylitis.

Table 1: Mean value, mean difference and paired 't' value of pain and functional activities in experimental and control groups

Variable	Groups	Pre test	Post test	Mean Difference	Paired 't' value
Pain	Experimental Group	6.9	1.5	5.4	8.05
	Control Group	6.8	3.9	2.9	6.56
Functional Activities	Experimental Group	54.25	15.7	38.55	12.78
	Control Group	53.05	26.35	26.7	9.34

Significant at 0.05 level

In experimental group for pain and functional activities the calculated paired 't' values are 8.05 and 12.78 respectively and the 't' table value is 2.145 at 0.005 level. Since all the calculated 't' values are more than the 't' table value, there is significant difference between pre and post test scores of pain and functional activities following McConnell's Y taping and ultrasound therapy among acute stage lateral epicondylitis patients.

In control group for pain and functional activities the calculated paired 't' values are 6.56 and 9.34 respectively and the 't' table value is 2.145 at 0.005 level. Since all the calculated 't' values are more than the 't' table value, there is significant difference between pre and post test scores of pain and functional activities following ultrasound therapy among acute stage lateral epicondylitis patients.

Table 2: Mean value, mean difference and un paired 't' value of pain and functional activities in experimental and control groups

Variable	Experimental Group Mean	Control Group Mean	Mean Difference	Un Paired 't' value
Pain	5.4	2.9	2.5	4.26
Functional Activities	38.55	26.7	11.85	10.25

Significant at 0.05 level

In the between group analysis the calculated unpaired 't' values for pain and functional activities are 4.26 and 10.25 respectively and the 't' table value is 2.048 at 0.005 level. Since all the calculated 't' values are more than the 't' table value there is significant difference between ultrasound therapy along with McConnell's Y taping and ultrasound therapy alone in reducing pain and improving functional activities among acute stage lateral epicondylitis patients. When comparing the mean values of both the groups, experimental group subjects treated with ultrasound therapy along with McConnell's Y taping showed more difference in the scores of pain and functional activities than control group subjects treated with ultrasound therapy alone.

Discussion: The aim of the current study was to find out the efficacy of taping in acute lateral epicondylitis. Mean differences were found between the control and study group, indicating the efficacy of this taping treatment technique.

The data of our study demonstrated positive changes in the pain scores compared with pre and post application of tape. According to the results, data of our study was compatible with the study by Alireza and Mohammad in which the authors reported that the application of tape resulted in positive changes in pressure pain threshold scores compared to a placebo or no tape controls⁷.

A possible model of the mechanism of action for taping in lateral epicondylitis may relay to its neurophysiologic effect on the nervous system, particularly the nociceptive system. In this neurophysiologic model, the tape may exert an effect on grip strength by primarily altering pain perception, either locally at the elbow by inhibiting nociceptors, facilitating large afferent fibres input into the spinal cord and/or possibly by stimulating endogenous process of pain inhibition⁸. The data suggested that this method of treatment may be useful in the management of this condition, when applied to the affected elbow.

Conclusion:

It is concluded that McConnell's Y taping technique along with ultrasound therapy is more effective than ultrasound therapy alone in the management of pain and functional activities among acute stage lateral epicondylitis patients.

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