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To study effect of Maitland mobilization and conventional treatment on management of tennis elbow

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ABSTRACT

Lateral epicondylitis is one of the commonest musculoskeletal conditions. The etiology of lateral epicondylitis is poorly understood. In spite of long duration for treatment protocol recurrence rate is common. Objective: The present study was undertaken to compare the effect of Maitland mobilization and conservative treatment in lateral epicondylitis. Method: 60 subjects diagnosed with lateral epicondylitis were included in the study. Functional status of patient was evaluated using upper extremity functional index scale. The data was collected by questionnaire form and was analyzed using SPSS 14.0 and graph pad 6.7 version. Correlation of pain and hand grip was done using Pearson correlation coefficient. Result: 80% of cases were in the age group between 30-40 years and 20% were more than 40 years. 33.33% was males and 66.66% females. The mean pain on was in group A was 3.43 and in group B it was 4.2 by the end of 9th week. Mean pain free grip strength improved in group A 19.96 as compared to group B 16.36 by end of 9th week. Mean upper extremity functional index showed significant improvement in group A as compared to group B. In occupation wise distribution 33.33% subjects were housewives, 20% were clerks. In hand dominance 91.66% were right-handed and 8.33% were left handed. Conclusion: From the present study it is concluded that Maitland mobilization combined with conservative treatment is effective in management of lateral epicondylitis as compared to only conservative treatment.

Keywords: Maitland mobilization, Conservative, Lateral, Epicondylitis.

1. INTRODUCTION

Lateral epicondylitis seen mainly in those whose work involves repetitive movements of forearm and hand; it is reported that 7.4% in industrial workers and 40% to 50% of tennis players are at some times are affected by it^[1]

Although the signs and symptoms of tennis elbow are clear and its diagnosis is easy, till date no ideal treatment has emerged. Cyriax and Cyriax^[2] claimed substantial success in treating tennis elbow using deep transverse friction in combination with mill's manipulation which is performed immediately after deep transverse friction. Though insufficient data are available in the literature on strengthening exercise of extensor group of muscle in the treatment of lateral epicondylitis Spogen^[3], strongly advocated the use of exercise to strengthen the extensor muscles for more long-term cure.

Although the most efficient management approaches remain controversial there is a growing proliferation of literature reporting the effects and underlying mechanism of joint manipulation directed at the elbow and wrist as well as at the cervical and thoracic pain and motor symptoms^[4].

More research is needed to discover the most effective treatment in patients with lateral epicondylitis.

Therefore the purpose of the study is to evaluate the effectiveness of Maitland mobilization with conservative therapy consisting of deep friction, ultrasound, static stretching and eccentric strengthening as compared to only conservative treatment consisting of deep friction massage, ultrasound, static stretching and eccentric strengthening in the management of lateral epicondylitis.

2. AIMS

- To study the effect of Maitland mobilization and convectional treatment on the management of tennis elbow
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3. MATERIAL AND METHODS

Design of the study: Randomized Controlled Trial.

Study setting: Musculoskeletal Department, Shri.K.R.Pandav College of Physiotherapy

Sample Size: 60 subjects

4. SAMPLING TECHNIQUE

Simple Random Sampling: Patients were recruited as per the inclusion criteria. They were divided into two groups Group A receiving Maitland mobilization, ultrasound, deep friction massage, stretching and strengthening and Group B receiving only ultrasound, deep friction massage, stretching and strengthening.

Subjects: Patients having the symptoms of tennis elbow in the age group of 30-60 years were included as the study samples.

Inclusion Criteria:

- The subjects in the age group of 30-60 Years.
- Willing to participate in the study
- Both males and females
- Diagnosed cases of lateral epicondylitis having:
- Presenting complaints past 6 weeks and not more than 6 months.

Exclusion Criteria:

- A history of previous surgery to the elbow
- A history of the previous fracture around the elbow
- Elbow pain due to neck or shoulder complaint
- A history of a corticosteroid injection

Information regarding age, sex, symptom description, duration of symptoms, mechanism of onset, history of recurrences, history of previous treatment, hand dominance, job duties, and sport or other leisure activities was obtained with the help of assessment proforma.

5. MATERIALS UTILISED

A) INSTRUMENTS

- Therapeutic Ultrasound.
- JAMAR hand dynamometer: To measure the grip strength of patients.
- Dumbbells: Resistance aid for strengthening exercises.
- Measuring Tape

6. METHODOLOGY

- Group A was study group with 30 subjects.
- Group B was control group with 30 subjects.

Group A: Patients received Maitland mobilization with standardized supervised exercise programme which consisted of static stretching of extensor carpi radialis brevis tendon and slow eccentric strengthening exercise, ultrasound, deep friction massage and home exercise programme.

Conservative Treatment The treatment consisted of self-stretching. The patient is asked to stand with the elbow extended, forearm pronated, and back of the hand against a wall (fingers pointing down). The patient is instructed to slide the back of the hand up the wall. For an additional stretch, the patient was asked to flex the fingers actively.

Group B: Received only conservative treatment in the form of ultrasound, deep friction massage, static stretching, eccentric strengthening and home exercise programme as described above in Group A patients.

All the patients were instructed to make use their arm during the course of the study but avoid activities that produces discomfort to the elbow and were not allowed to ingest anti-inflammatory medication throughout the study.

7. OUTCOME MEASURES

Pain severity, pain free grip strength, and functional status were evaluated before and after treatment. Each patient was evaluated at the baseline (week 0), at the end of (week 3), end of (week 6). Follow-up was at the end (week 9).

1) VAS PAIN SCALE (VISUAL ANALOGUE SCALE)

Pain severity was measured on visual analogue scale (VAS), where (0 cm) was ‘no pain imaginable’ and 10 (cm) was ‘worst pain imaginable’. VAS was used to measure the pain over the 24 hours before each evaluation. Same was used for both the groups and compared.

2) GRIP STRENGTH

Pain-free grip strength is defined as an amount of force each patient is able to generate with an isometric gripping action before eliciting pain. Grip force was measured in kilograms both pre and post interventions with A Jamar hand dynamometer.

3) UPPER EXTREMITY FUNCTIONAL INDEX

Functional status of the patient was evaluated by means Upper Extremity Functional Index Scale which is reliable and valid^[5,6]. It is self reported questionnaire developed to measure the disability associated with tennis elbow. Final score was recorded of each subject before and after interventions and was used for the statistical analysis.

8. DATA ANALYSIS

Data analysis was done by using SPSS 14.0 and Graph Pad 6.7 version. Pearson correlation coefficient was used to find out the correlation of pain with hand grip strength. Within-group comparison was done by using students paired t-test and between-group comparisons was done by using students unpaired t-test. All the calculations were done at 5% level of significance.

Observations

The mean age of the subjects in group A was 38.16 ± 3.87 and in group B it was 38.10 ± 3.65 (Table 1). There was no significant difference is found between the ages of both the group.

Table 2: Comparison of pain on VAS (in cms) in group A and B - Students unpaired t-test

	t-test for Equality of Means						
	t	df	p-value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
0th Week	0.176	58	0.861 NS,p>0.05	-0.03	0.18	-0.41	0.34
3rd Week	2.142	58	0.036 S,p<0.05	-0.6	0.28	-1.17	-0.03
6th Week	2.021	58	0.048 S,p<0.05	-0.54	0.27	-1.08	-0.005
9th Week	2.237	58	0.029 S,p<0.05	-0.76	0.34	-1.45	-0.08

Table 3: Correlation of VAS with grip strength. Pearsons Correlation coefficient

	Pain on VAS	Grip Strength	Correlation ‘r’	p-value
Group A	3.43±1.58	19.96±3.86	-0.74	0.000 S,p<0.05
Group B	4.20±1.01	16.36±4.86	-0.79	0.000

				S, p<0.05
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Table 3 shows co-relation of pain on VAS with grip strength in group A with group B. negative co-relation was found between pain on VAS and grip strength in group A ($r = -0.74$ and $p = 0.000$) and group B ($r = -0.79$ and $p = 0.000$) hence it is proved that as pain on VAS decrease grip strength increase significantly.

9. DISCUSSION

The occurrence of lateral epicondylitis reported by Kivi^[7] was mean age as 43 years; Geoffroy et al^[8] reported series of lateral epicondylitis between 30-50 years with mean age group 42 years. Our observations are more or less similar to above workers^[7,8]. The occurrence of the lateral epicondylitis in the adult and late age group between 40-60 years could be explained on the basis that physical activity like gripping, repetitive supination and pronation remains maximal and natural age-related changes start occurring in this age group.

In the present study (Table 2) analysis of pain on VAS in group A and B at 0th week did not show a significant difference by using students unpaired t-test significant change was found at 3rd week, 6th week and 9th week.

Struijs et al^[9] in their study of Maitland mobilization compared with conservative treatment reported that after 3 weeks of intervention there was no difference in the intensity of pain in both the groups. After 6 weeks of follow up the mean decrease in scores for pain in group 1 was 5.2(SD=2.4) compared with 3.2(SD=2.1) in group 2.

In the present study analysis of pain-free grip strength in group A at 0th week did not show a significant increase. By using students paired t-test significant increase is found at 3rd week, 6th week and 9th week.

Bisset et al^[12] in his study of mobilization with movement, exercise, cortico-steroid injection or wait and see reported that at 6 weeks cortico-steroid group was better than physiotherapy group and wait and see the group. Physiotherapy group was significantly better than wait and see the group at 6 weeks. The result suggested that physiotherapy treatment has a long-term effect as compared to another group.

Crosier Jaan-Louis et al^[15] studied 92 patients divided them into 2 groups eccentric trained group (n=46) and control group (n=46) age and sex matched. The control group underwent a passive standardized rehabilitation programme that excluded strengthening exercise. The trained group preferred eccentric exercises based on a repetitive lengthening of the active musculo tendinous unit. This exercises started with submaximal contraction intensity and slow speed movement. At the end of the programme, they reported that there was a significant reduction in pain, the absence of strength deficit on the involved side through bilateral comparison for forearm supinator and wrist extensor muscle, an improvement in tendon image and a marked improvement in disability status during the occupation and sports activities.

The present study shows the relation of pain on VAS with grip strength in group A and group B. Negative correlation was found between pain on VAS and grip strength in group A and in group B.

Struijs et al^[9] and Manchanda and Grover^[10] in their study showed that their subjects not only improved significantly in strength but also the improvement in functional scale, it can be attributed to the improved strength that helps in the performance of activities without pain.

Vicenzino and Wright^[18] in their study reported that treatment condition produced significant improvement in pressure pain threshold, pain free grip strength, neurodynamics and pain scores related to modalities of treatment between group ($p < 0.05$). They further opined that manipulative therapy is capable of eliciting a rapid hypoalgesia leads to better improvement and functional performance.

10. REFERENCES

- [1] Dimberg L- The prevalence and causation of tennis elbow. (lateral humoral epicondylitis) in a population of workers in an engineering industry. *Ergonomics* - 30:573-580:1987.
- [2] Cyriax H.J: Cyriax J.P;-Cyriax illustrated manual of Orthopedic medicine published by Oxford, Butter worth –Heinemann 1983.
- [3] Spogen D. Clinical commentary, Quoted by Beard J. Mark and Safranek, S.M. What treatment works best for tennis elbow. *Clinical Enquiries*, vol no. 58(No.3):159-161, 2009.
- [4] Vicenzino, B.; Joshua A. Cleland; LeanneBisset - Joint Manipulation in the management of Lateral Epiconyaglia. A clinical commentary. *Journal of Manual manipulative Ther*: 2007;15(1):50-56.
- [5] Razmjou.H, Bean.A,Osnabrugge.Varda Van, MacDermid. JC, Holtby R. Cross-sectional and longitudinal construct validity of Two Rotator Cuff Disease- Specific Outcome Measures. Information from industry Assesses clinically focused product information on Medscape published 2006.
- [6] Vaughan. B and DiVenuto.G, An introduction to the use of outcomes questionnaire in osteopathic practice. *Journal of Osteopathic Medicine*. 2004: 7(2);85-95.
- [7] Kivi P -The etiology and conservative treatment of humoral epicondylitis. *Scan J.Rehab Med* 15:37-41,1982.
- [8] Geoffroy.P; Yaffe.Mark.J;Rohan Ivan-Diagnosis and treating lateral epicondylitis *Canadian Family Physician* Vol 40:73-78:Jan 1994.

- [9] Struijs Peter AA; Pieter-Jan Damen, Eric WP Bakker;Leendert Blankevoort, Willem JJ Assendelft,C Neik van Dijk Manipulation of the Wrist for Management of Lateral Epicondylitis: A, Randomized Pilot Study Physical Therapy, volume 83.Number 7, 608-616,July 2003.
- [10] Manchanda,G; Grover, Deepak, Effectiveness of movement with Mobilisation compared with Manipulation of Wrist in case of lateral epicondylitis-Indian Journal of Physiotherapy and Occupational therapy, vol 2 No.1 (2008-01--2008-03).
- [11] Radpasand M.: Combination of manipulation exercise and Physical Therapy for the treatment of a 57 years old woman with lateral epicondylitis-J.manipulative PhysiolTher 32(2):166-72,2009.
- [12] Bisset L,BellerE, GwendolenJ, Brooks P.; Darnell R; . Vicenzino B: Mobilisation with movement and exercise, corticosteroid injection, or wait and see for tennis elbow: randomized trial. BMJ 333(no.4) 939, 2006.
- [13] Verhaar IAN, Walen Kamp.G.H.I.M; Mameren H. Van; Kester ADM Van der Linden A.J.. Local Corticosteroid injection Versus Cyriax Type Physiotherapy for Tennis Elbow .The Jr of Bone and Joint Surgery 78-B(1) page 128-131:1996.
- [14] Smidt N; Vander Windt DAWM; Assendelft W.J.J., Deville WLJM ,Korthals-de-Bos.IBC, Bouter IM, Corticosteroid injection, Physiotherapy or Wait and See Policy for Lateral Epicondylitis A randomized controlled trial: Lancet vol .359, 657-662, 2002.
- [15] Croisier, Jean-Louis; Foidart Dessalle, Marguerite; Titant France; Crielaard Jean – Michel; Forthomme Benedicte. An isokinetic eccentric programme for the management of Chr. Lateral Epicondylar tendinopathy. Brt Jr of Sports Medicine, 41(4): 269-275: 2007.
- [16] Sovernlov B;Adolfesson,L;-Non operative Regime including Eccentric training for Lateral humeral epicondylgia-Scandinavian Journal of Medicine and science in sports vol 11(6), 328-334, 2001.
- [17] Abbot J.H,Patla CE, Jenscen RH .The initial effect of an elbow mobilization with movement technique on Grip Strength in subjects with lateral epicondylgia, Manual Ther vol6(3) 163-169,2001.
- [18] Vincenzino B and Wright A-: Effect of a novel manipulative Physiotherapy technique of tennis elbow: –A single case study. Man Ther 1995;1:30-35.
- [19] Fillion P.L-Treatment of Lateral epicondylitis. American Jr of Occupational Therapy, Vol 45(4) 340-343:1991.
- [20] Howitt S.D. Lateral Epicondylosis : A case study of conservative care utilizing ART and Rehabilitation, J. Can. Chiropr Assoc, 50(3): 182-189: 2006.
- [21] Cleland J.A, Whiteman J.M and Fritz Julige M. Effectiveness of manual physical therapy to the cervical spine in the management of Lateral epicondylgia: A retrospective Analysis. Jr. Orthopedic and Sports Physical therapy: 34(II):713-723: 2004.
- [22] Wadsworth TG. Tennis Elbow-Conservative, Surgical and Manipulative Treatment. BMJ (Clin Res Ed) 294:621-4:1987.