

Management of Tennis Elbow by Exercise Treatment

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The etiopathogenesis of Tennis elbow is not understood very well and different causes have been enumerated. As a consequence various forms of treatment have been described which may be quite effective immediately but results are not long lasting and recurrence becomes a rule. In the present series 60 cases were given exercises for increasing the power, endurance and flexibility of the all extensor muscles of the wrist. They were followed up for adequate period and the results are presented here.

INTRODUCTION

Tennis elbow is widely regarded as a minor ailment, which causes a little more than an inconvenience to the patient, but a considerable loss of efficiency to manual workers, housewives and others involved in repeated arm movements, and forced extension of the wrist. Thus, it has an important socio-economic aspect where a worker is prevented from earning his livelihood.

Nirschl (1973) described that the prime etiological factor is a force overload at the aponeurosis of forearm extensors. There is a stress overload on the basis of disadvantage leverage force system, inadequate forearm extensor power and endurance to withstand moments of force placed against the forearm (intrinsic overload) and inadequate forearm extensor flexibility (extrinsic overload). On the basis of above mentioned concepts, the present study was carried out.

MATERIAL AND METHODS

Patients attending Out Patient Department

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of Rehabilitation Research Centre with a complaint of pain over lateral aspect of elbow were selected for this study. To confirm the diagnosis of Tennis elbow certain special tests were performed.

1. Wrist Extension Test

With elbow in extension and then wrist is dorsiflexed against resistance, then increased pain over the site of lesion.

2. Test for Radiohumeral Bursitis and Synovitis

Patient is not able to raise a heavy book with forearm pronated but able to do so when forearm is supinated.

3. Tests for radial nerve entrapment

(a) Resisted extension of middle finger with extended elbow, leads to pain in the common extensor origin.

(b) There is a local tenderness along the radial nerve and its branches in front of the radial head, which should be compared with other side because this region is often tender to deep pressure.

Following regime of treatment was followed for the selected group of patients suffering from Tennis elbow.

Patients with severe degree of pain were given injection Hydrocortisone locally and cases were examined one week after injection. Those patients in which pain was reduced to mild degree, were advised exercise regime. Injection Hydrocortisone was repeated in case pain was not reduced at weekly interval. Maximum three injections were given.

Those cases in which pain was of moderate degree, ultrasound was given over tender region for 10 minutes per day for 7-10 days and after relief of pain exercise regime was started. In some cases injection Hydrocortisone was also

used who had no relief after ultrasound therapy.

Patients with mild intensity of pain were advised exercise regime from the beginning but in some cases ultrasound was also used who complained of increased discomfort with exercises.

Some analgesics like aspirin, ibuprofen and local application were also used for relief of pain and inflammation. After relief of inflammation, exercise regime was started. The exercises were as follows :

1. Stretching of Forearm Extensors

Patients were asked to flex the elbow at 90 degree, pronate the forearm and hold the wrist at 90 degree flexion with pressure of the opposite hand. Then the wrist was flexed and the



Fig. 1

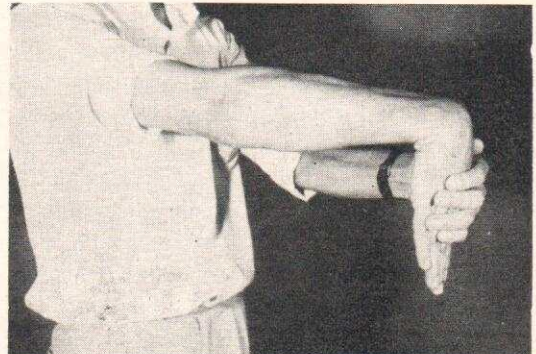


Fig. 2

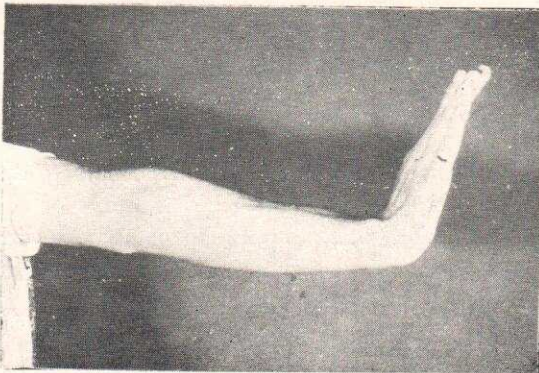


Fig. 3

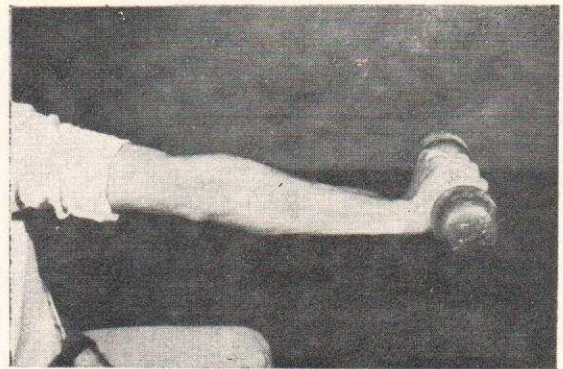


Fig. 4

elbow fully extended and held for 10 seconds. This was repeated 10 times daily in the morning and evening. (Fig. 1 & 2)

2. Strengthening Exercises

(a) Elbow was fully extended and pronated, maximum dorsiflexion of wrist and fingers was done for 10 seconds, 10 times daily in the morning and evening. (Fig. 3)

(b) Patients were asked to hold a 3-5 pounds forearm flexion extension curl with wrist in extension for 10 seconds, 10 times daily in the morning and evening. (Fig. 4)

The number of repetitions were reduced if patients complained of much pain in the beginning and then gradually increased. Patients in whom the pain persisted or was aggravated by their activities and those who were unable to withdraw from their activities were advised to use a non-elastic forearm band during their work.

OBSERVATIONS

Table I. Age & sex distribution of patients

Age group (in years)	Male	Female	Total	Percentage
31-40	8	16	24	40.00
41-50	10	21	31	51.67
51-60	3	2	5	8.33
Total	21	39	60	100.00

Most of the patients (92 percent) were in the age group of 31-50 years and females were more commonly affected than males.

Table II. Showing number of patients given different type of initial treatment

Treatment	Number of cases	Percentage
Exercise alone	18	30.00
Ultrasound therapy + Exercise	22	30.67
Hydrocortisone Inj. + Exercise	20	33.33
Total	60	100.00

The number of cases in different types of initial treatment were almost equal.

Table III. 20 relapsed cases included in the study

Number	Treatment taken	Duration of relief of pain in months	Duration of present symptoms in months
1.	Inj. Hydrocortisone	8	1
2.	Inj. Hydrocortisone	2½	1½
3.	Inj. Hydrocortisone	2½	1½
4.	Inj. Hydrocortisone	1	1
5.	Inj. Hydrocortisone	1	1½
6.	Inj. Hydrocortisone	2½	½
7.	Inj. Hydrocortisone	5	1
8.	Inj. Hydrocortisone	4	1
9.	Inj. Hydrocortisone	2	1½
10.	Inj. Hydrocortisone	5	½
11.	Inj. Hydrocortisone	2½	1
12.	Inj. Hydrocortisone	1	2
13.	Inj. Hydrocortisone	2½	1
14.	Inj. Hydrocortisone	4	½
15.	Inj. Hydrocortisone	3	½
16.	Inj. Hydrocortisone	2	1½
17.	Inj. Hydrocortisone	1	1½
18.	Inj. Hydrocortisone	2½	1
19.	Inj. Hydrocortisone	6	1
20.	Inj. Hydrocortisone	3	1½

Patients who were given injection hydrocortisone had recurrence in the period ranging from one to eight months with an average of three months.

Table IV. Results

Type of treatment	Results (Number of cases)					Total
	Excellent	Good	Fair	Poor	Worst	
Exercise alone	10	7	—	1	—	18
Ultrasound therapy plus Exercise	2	20	—	0	—	22
Inj. Hydrocortisone plus Exercise	0	3	10	7	—	20
Total	12	30	10	8	—	60

About 70 percent patients had excellent to good results, while 17 percent had fair results followed by poor results in 13 percent of cases.

DISCUSSION

In the present series maximum number of cases were in the 4th and 5th decades. Females were more commonly affected than males by a ratio of 1.9:1. These findings compare well with the findings of previous workers. In our country females are engaged in household activities which require repeated pronation and supination of forearm and strong grip in works like washing of clothes, cleaning utensils, cooking and cleaning the floors. Higher incidence in females can be further explained by their large carrying angle in comparison to males.

In the present series there were 20 cases out of 60, who were given injection hydrocortisone in the past. They had a recurrence in the period ranging from 1-8 months with an average of 3 months. Thus, relief after injection

Hydrocortisone was not long lasting and recurrence was a common problem.

In the present series 70 percent cases responded well and had good to excellent results. These cases were doing exercises regularly.

In 13 percent cases results were poor, since pain had recurred and the patients were having a mild disability after initial complete relief of symptoms. These were the cases who had stopped doing exercise after the initial complete relief of pain. In remaining 17 percent cases with fair results, mild degree of pain and disability persisted but were not aggravated after exercises.

Minimum followup period was 3 months and maximum 1 year with an average of 4½ months. Overall results were good with exercise regime in preventing recurrence of Tennis elbow.

Although the present series is quite small with short follow up period, it appears that if exercises were performed regularly, it could be an effective method of conservative treatment in preventing recurrence of Tennis elbow.

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