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The Role of Surgery in the Management of Resistent Tennis Elbow

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Abstract

The aim of this work is to evaluate the role of surgery in the management of prolonged disability in patients with tennis elbow not responding to conservative and physiotherapeutic measures. Thirty patients with pain and tenderness confined to the lateral epicondyle were selected. They were 21 males (70%) and 9 females (30%) whose mean age was 40.2 ± 5.9 years and mean duration of illness was 5.9 ± 1.2 months. A course of ultrasonic therapy for three weeks was started followed by steroid injection on weekly basis for another 3 weeks. Improvement of pain score was encountered in 80.7% of patients, while degree of tenderness was better in 83.4% and functional disability decreased in 83.4%. We were left with 6 patients with unfavourable outcome after 8 weeks of conservative therapy. Five cases of these patients were selected for surgical release of the common extensor origin with remarkable improvement encountered in all of them and they were able to resume their previous activities in a period ranging from 4-8 weeks.

Introduction

THE term tennis elbow designates a clinical syndrome characterized by pain and local tenderness in the region of the lateral aspect of the elbow[1]. It is the most common cause of elbow pain and disability[2].

Tennis elbow is caused by repeated stresses that exceed the physiological tolerance of teno-periosteal junction of the lateral epicondyle. This may lead to microscopic tears or degenerative changes within the origin of the common extensor tendon[3].

Evidently more than one pathology of nearby structures may coexist in patients suffering from pain at the lateral side of the elbow; traumatic synovitis of the radiohumeral joint, posterior interosseous nerve entrapment, orbicular ligament fibrosis and fibrillation of the head of the radius and cartilage malacia[4].

The condition may be a self-limiting disorder, with patients improving with or

without treatment within a year, but it may tend to persist and many methods of treatment are described [5].

Surgical intervention is reserved for recalcitrant cases not responding to conservative management after one or two years [6].

In the surgical treatment of tennis elbow, the literature offers several suggestions; nerve decompression [7], and denervation procedures [8], musculotendinous unit release or lengthening [6], excision of the fibrillation and cartilage malacia of the head of the radius [9] or excision of hypertrophied synovial fringes [10].

The aim of this study is to evaluate the role of surgery in the management of prolonged disability in patients with tennis elbow not responding to conservative and physiotherapeutic measures.

Material and Methods

Thrity patients complaining of a localized pain and tenderness over the lateral epicondyle of either upper limb were carefully examined and enrolled into the study. They were selected from the attendants of the out patient clinic of the rheumatology and Rehabilitation department of Benha University Hospitals. These patients had a history of episodic or repetitive stresses of the wrist and finger extensors with pain over thc lateral epicondyle aggrevated by stress of these extensors and accentuated by use. Full clinical and radiological examination revealed no abnormality.

These patients received a course of every other day session of ultrasonic therapy for 3 weeks. The apparatus used was a Siemens Sonostat 733 ultrasound generator. The treatment was given over the region of the lateral epicondyle using «Aquasonic 100» as a coupling medium with the micromassage technique and an intensity of 2 watt/cm^2 for 10 minutes.

Patients not responding to ultrasonic therapy were given a steroid injection (1 ml. of triamicnolone plus 1 ml. of xylocaine 1%) in the region of the lateral epicondyle localized to the most tender area on weekly basis for another 3 weeks.

During the whole period of physical therapy, the patients received a muscle strengthening and flexibility program applied to the wrist extensors.

These patietns were evaluated according to the following parameters :

1. Pain severity score : The patient's subjective impression of pain was graded according to Jaffe [11] from 0-3.
2. Tenderness to pressure score : Tenderness was graded according to Gunn [12] from 0-3.
3. Functional status score : Subjective assessment of functional disability was graded according to pain and difficulty encountered by the patient when performing activities such as : personal case, home chores and work chores, on a five points scale from 0-4 [13].

We scored the degree of pain, tenderness and functional status but we graded our patients according to their score as : mild, moderate or severe.

Patients showing persistance of their symptoms or progressive functional incapacitation were asked to rest their elbows using either forearm straps or back splints of plaster for another 2 weeks. Failure of response to this mesure resulted in advice for surgical intervention.

Patients selected for surgery were manual workers with pain and tenderness confined to the lateral epicondyle, and none of them had nocturnal pain.

The surgical procedure used was that described by Dobyns[4], under general aneasthesia. The principle of this procedure is the detatchment of the superficial fibres of the origin of the extensor carpi radialis brevis muscle. Postoperatively the limb is protected in an above elbow back splint of plaster of paris with the elbow at 90° flexion and the forearm in full supination. The splint is discarded after one week where muscle training and range of motion exercises are started.

Results

Our study group included 30 patients, 21 males (70%) and 9 females (30%), whose ages ranged between 33-62 years (mean 40.2 $\pm$ 5.9 years). The duration of illness ranged between 3-13 months (mean 5.9 $\pm$ 1.2 months).

Patients showing mild pain, mild tenderness and mild functional disability were not given steroid injections.

Six patients (20%) had unfavourable outcome. They were reviewed after 2 weeks of rest and only five of them accepted the surgical interference. Patients selected for surgical intervention were 4 males and one female. Two of the patients had a high pain score, the other 3 had severe functional disability. The mean duration of their illness was 12.9 months.

Satisfactory improvement was observed postoperatively yet relief of pain was incomplete in all the 5 patients. This residual pain may be due to stretching of post operative scar. Elbow instability was not encountered in any of the patients as well as any other relevant complication.

All the five patients returned to their previous activities in a period ranging from 4-8 weeks.

Discussion

Tennis elbow is a complaint which often affects people during their working years, thereby causing prolonged abscence from work[14].

The pathogenesis of tennis elbow had been subjected to much controversy[15]. With early and proper conservative treatment of tennis elbow, there rarely need for surgery[16].

Regarding our results a significant improvement was encountered in patients treated with ultra-sonic therapy as regard pain ($P < 0.001$), tenderness ($P < 0.001$) and functional disability ($P < 0.001$).

This agrees with the results of Binder and Hazleman[16] and Wadswoth[17], who reported excellent results of ultrasound on cases with tennis elbow but not

Table (1) : Percentage Evaluation of the Clinical Parameters of Patients Before and After Ultra-Sonic Therapy.

Grade	Pain		Tenderness		Functional disability	
	before	after	before	after	before	after
Severe	60%	10%	56.7%	23.3%	40%	13.3%
Moderate	40%	23.3%	43.3%	26.7%	26.7%	10%
Mild	—	66.7%	—	50%	33.3%	3.3%

Table (2) : Percentage Evaluation of the Clinical Parameters of Patients Before and After Steroid Injection.

Grade	Pain		Tenderness		Functional disability	
	before	after	before	after	before	after
Severe	10%	6.7%	23.3%	3.3%	13.3%	10%
Moderate	23.3%	10%	26.7%	13.3%	10%	6.7%

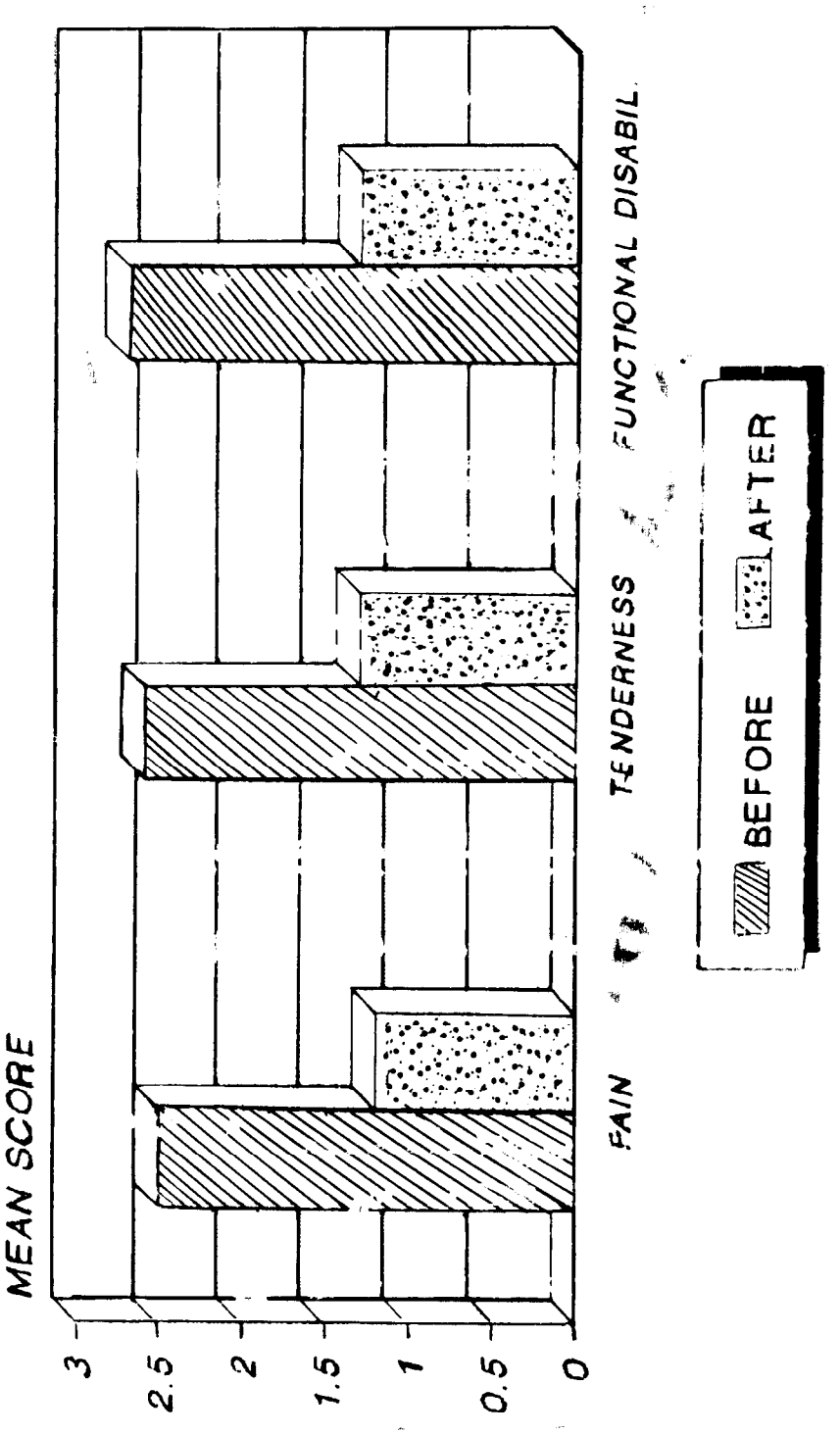

Fig. 1. The score value of pain, tenderness and functional disability before and after conservative management.

with those of Kottke and Lehmann[18], who reported that ultrasound therapy is not effective in the treatment of tennis elbow.

Currey[19], reported that repeated steroid injection is effective in about 75% of cases of tennis elbow. This was also confirmed in our study.

The surgical treatment of tennis elbow is confused by the multiplicity of reports [8,9,20].

Surgical treatment is seldom necessary if ample time can be allowed for recovery and if protection from aggrevation is possible. The difficulties of achieving rest and protection in certain industrial situations are great[6].

Most surgeries on tennis elbow claim excellent results and some claim no unsatisfactory results[17].

The results in our work are consistent with those of Dobyns[4], who reported remarkable satisfactory improvment.

From our study it is concluded that the role of conservative management is undoubtful in the treatment of tennis elbow. Surgical release of tennis elbow should not be a routine procedure, but it should be considered only after exhaution of proper conservative regimens.

Accurate diagnosis should be done with exclusion of other pathologies and in cases of doubt, other pathologies should be explored at surgery.

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