

## LATERAL EPICONDYLITIS OF THE ELBOW IN ATHLETES

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### Abstract

Lateral epicondylitis, or "tennis elbow," is a common musculotendinous degenerative disorder of the extensor origin at the lateral humeral epicondyle. Represents a cause of temporary or even long-term interruption of professional activity.

**Objectives.** Repetitive occupational or athletic activities involving wrist extension and supination are thought to be causative. The typical symptoms include lateral elbow pain, pain with wrist extension, and weakened grip strength. The diagnosis is made clinically through history and physical examination; however, a thorough understanding of the differential diagnosis is imperative to prevent unnecessary testing and therapies. Most patients improve with nonoperative measures, such as activity modification, physical therapy, and injections. A small percentage of patients will require surgical release of the extensor carpi radialis brevis tendon. Common methods of release may be performed via percutaneous, arthroscopic, or open approaches.

**Methods of research.** A number of 30 patients with this type of tendonitis were studied. The only detectable cause was overuse of the elbow joint by repeated pronosupinatory movements.

The initial treatment was exclusively through physical therapy and physical rest. After 14 days we found that 10 patients had complete remission of symptoms.

Injectable treatment was required for 18 patients corticosteroid infiltrates (betamethasone or triamcinolone acetonide) associated with PRP to 7 of them. Minimally invasive percutaneous surgery was required in 2 patients.

**Conclusions.** Early recognition of that condition followed by physical therapy/kinetotherapy can lead to complete remission of symptoms and rapid reintegration into sports or professional activity of the person. Delayed presentation to a specialist can lead to invasive treatments such as surgery, that can compromise the skills or even sports or professional performance of the patient.

**Key words:** epicondylitis, elbow, kinetotherapy.

### Introduction

Inflammation of the tendons at the elbow joint is called epicondylitis. Depending on the location of the pain and the way it is irradiated, two categories are identified, namely the lateral epicondylitis (or the tennis player's elbow) and the medial one (or the golfer's elbow). Represents a cause of temporary or even long-term interruption of professional activity (fig.1) (Eugen, D. Popescu, colab., 1997, Rheumatology, National Publishing House, Bucharest).

The cause of epicondylitis. From the point of view of the mechanism of occurrence, epicondylitis is caused by excessive overload of the elbow joint after playing a sport or even a profession, which leads to repeated microtraumas with localization in the tendons of the short radial extensor muscle, common finger extensor or pronosupinator.

**Symptoms.** There are 4 stages of epicondylitis that have been described in the literature:

- Thus, the first stage involves the appearance of inflammatory processes that are reversible.
- Stage II and III consist of irreversible changes in the muscles but also in the tendon structure of bone insertion
- Stage IV is characterized by fibrosis and calcifications

(Walter R. Frontera & colab., 2016, *Essentials of Physical Medicine and Rehabilitation – Musculoskeletal Disorders, Pain, and Rehabilitation*. Third edition, Elsevier Saunders).

Athletes who do repetitive movements (such as tennis players or golfers) have a higher risk of developing this condition. Moreover, amateur players who have not yet learned the exact technique of playing tennis are more likely to develop the annoying symptoms that characterize lateral epicondylitis. But also, the short-term sports effort, but of high intensity, as in the case of a sudden lifting of a weight (dumbbells) or the forceful throwing of the ball in handball, a movement that also involves the sudden pronosupination of the forearm. The condition is also common in occupational diseases in a wide range of activities: construction workers, drivers, car mechanics, accountants, IT workers, surgeons, violinists and even online school (V Wright, Ian Haslock/ 1973, *Rheumatism for nurses and remedial therapists*, X11:115-33).

The symptoms of this condition have a gradual onset. Externally localized pain that intensifies with elbow flexion is characteristic of lateral epicondylitis.

Epicondylitis regardless of location is manifested by pain that can radiate to the forearm or wrist, muscle weakness affecting the grip of the hand, the inability to hold a weight and the appearance of crackles, noises that occur when mobilizing bones. The pain is accentuated by activities that require grasping and squeezing movements (shaking the hand, opening a lid, holding a heavier object in the hand). Sometimes the patient cannot fully extend the elbow and cannot fully clench his fist due to the pain. Symptoms occur at the elbow on the dominant side (right elbow for right-handers and vice versa).

There are situations in which the chronic evolution of the inflammatory process can lead to the compression of the neighboring nerve at the level of the elbow. Manifested distally by decreased sensitivity and over time muscle atrophy in the efferent territory. Treatment and recommendations in epicondylitis. If the diagnosis of epicondylitis has been made, it is recommended to stop physical activities that involve the use of the elbow joint. Rest and use of medical orthoses for the elbow joint will reduce the intensity of symptoms.

Also, general anti-inflammatory or topical ointment treatment as well as analgesics (paracetamol, algocalminum, solpadeine, tramadol) are recommended. Other extremely useful therapeutic lines in the treatment of epicondylitis are shock wave therapy (ESWT), laser therapy, physiotherapy. A possible alternative for patients facing this problem is the injection of plasma enriched in platelets that aims to regenerate the affected tissue at the elbow joint.

I took the study a number of 30 patients with this type of tendonitis (June 2019 - December 2019, before the covid-19 pandemic). The only detectable cause was overuse of the elbow joint by repeated pronosupinatory movements.

The moment of presentation to the doctor is defining for a good functional recovery of the elbow (Șuțeanu, Șt. colab., 1977, Clinic and treatment of rheumatic diseases, Medical Publishing House, Bucharest).

Thus, only 10 patients out of the 30 studied were diagnosed in the first evolutionary stage of the disease, 15 in stage II and 5 patients presented to the orthopedic office after a long period of evolution of the inflammatory process of 3-6 months (table 1).

#### Treatment objectives:

- Relieving and even eliminating local pain,
- Preventing and combating local inflammation,
- Increased joint mobility through the progressive development of simple and complex movements of the upper limb,

- Improving the tone of the flexor, extensor, pronator and supinator muscles,
- Improving blood circulation and local trophicity,
- Stimulation of tissue regeneration,
- Increased muscle strength and endurance,
- Prevention of joint adhesions,
- Quick return to daily activities.

The initial treatment was exclusively by physical rest, immobilization in the elbow orthosis and physiotherapy from the 7th day (image 1.1). As the elbow joint is painful to mobilize, active exercises are less recommended, instead being recommended, self-passive exercises with light resistance (only outside the acute phase). The kinetic means will follow:

- Fighting the pain that is done by immobilizing the elbow in analgesic positions respecting the functional angles. Oral drug treatment with NSAIDs (dextetoprophenum or ketoprophenum, vimovo, arcoxia, celebrex, etc.) or topically with gels or ointments.

No exercise is recommended when the elbow is inflamed and sore; movement is allowed and even imposed on the adjacent joints (shoulder, fist, hand). Immobilization with adjustable elbow orthoses or postures in serial splints (at variable bending angles) with plaster or resin bandage is recommended. It should be noted that after the 7th day at the most, the immobilization will necessarily associate flexion-extension exercises.

- Restored mobility. Exercises for restoring mobility (self-passive exercises, passive-active and active exercises) begin in the subacute phase and continue all the time in the chronic phase. Serial splints that fix the elbow at different angles of flexion and deflection, changed at variable time intervals, are a good means of regaining mobility, moving from one angle of flexion to another by gentle movement without forcing.

As soon as the patient has gained a certain mobility through this means he can move on to self-passive and active exercises, performing flexion, extension, supination and pronation movements (flexion can be associated with supination, extension with pronation). Mobilization maneuvers are easy, gentle, slow, with frequent breaks, up to painful limits. After 14 days we found that 10 patients had complete remission of symptoms. For 18 patients, injectable treatment, corticosteroid infiltrations (betamethasone or triamcinolone acetonide, Figure 1.2) associated with 7 of them with platelet-enriched plasma PRP (Figure 1.3) were required. Minimally invasive surgery was required in 2 patients (Figure 1.4).

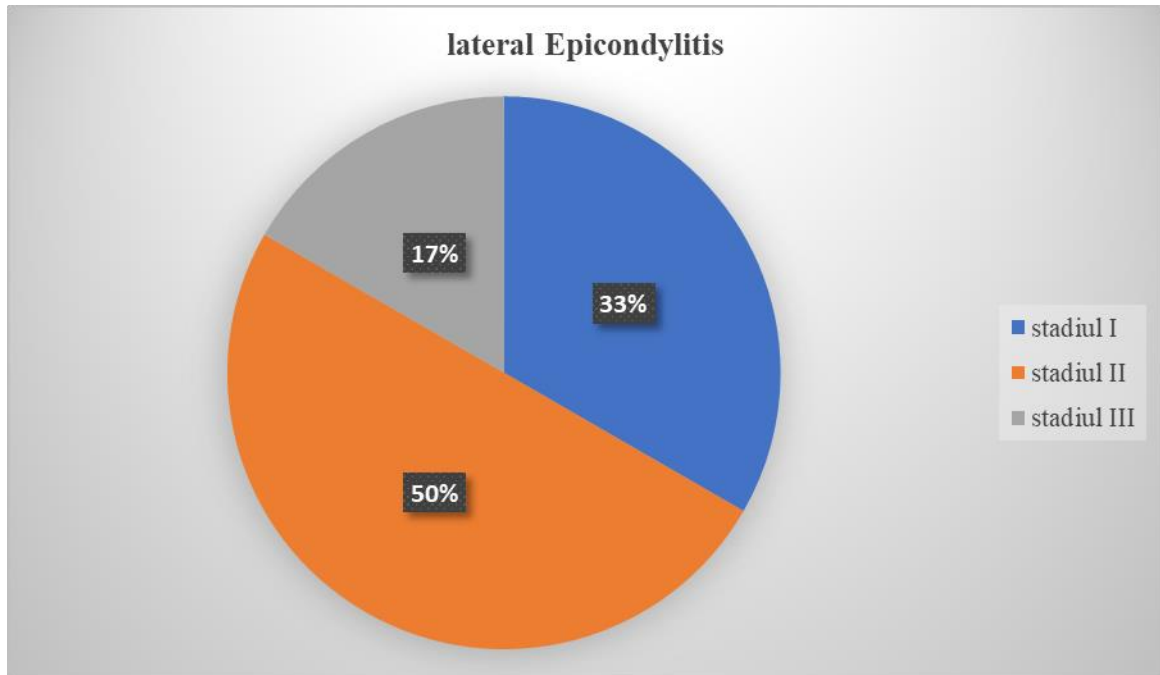


Table 1. Stage incidence of epicondylitis



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Fig. 1. Elbow lateral epicondylitis



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Fig.1.1. Physical rest and immobilization in the elbow orthosis.



- Fig.1.2. Local infiltrations with betemetazone.



- Fig.1.3. Local infiltrates with PRP- platelet-enriched plasma.



• Fig.1.4. Surgical treatment

### Conclusions

- Early diagnosis of epicondylitis followed by physical therapy can lead to complete remission of symptoms and rapid reintegration into sports or professional activity of the person. Delayed presentation to the specialist can lead to invasive treatments such as surgery that can compromise the skills or even sports or professional performance of the individual.
- Treatment with betamethasone infiltrates is very effective in remitting inflammation such as enthesitis or lateral epicondylitis of the elbow.
- While plasma treatment, PRP, has a recognized regenerative value of tendon and muscle tissue.

### References

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