

# The Role of Family Physician in Management of Tennis Elbow in PHC

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## Abstract

**Background:** Lateral epicondylitis is a common cause of pain in tennis players. Debate ensues on whether surgical or non-surgical modalities are best for pain control, retain function and recurrence prevention. The primary care physician should be alert to the signs and manage pain and restore functionality in the best approach possible. **Objectives:** We focus in this paper on lateral epicondylitis including conservative and surgical interventions, and only relevant studies would be discussed. **Methodology:** PubMed database was used for articles' selection, and accordingly, papers on lateral epicondylitis were obtained and reviewed. **Conclusion:** In summary, doctors should focus on alleviating pain, restoring function, and referring these patients to higher centers when required.

**Keywords:** Lateral epicondylitis, tennis elbow, Physician

## INTRODUCTION

Elbow pain is a common presentation in the primary health care center and the causes behind it are variable. However, lateral epicondylitis is commonly diagnosed in these patients due to its rather popular pathophysiology<sup>[1]</sup>. This disease can be easily seen in people who often overuse wrist and/or forearm, for example, cashiers and amateur tennis players. This reflects its prevalence in the primary health care setting with a reported incident of 1% to 3% of adults each year, mainly affecting people between the age of 35 and 55 years old<sup>[2,3]</sup>.

The current mainstay of management in lateral epicondylitis is non-operative therapy, the role of the family physician becomes more significant in providing the best treatment options to the patient. In this paper, we will review the pathophysiology, clinical features, diagnosis, and management aspect of this disease with a special focus on the primary physician setting.

## METHODOLOGY

PubMed database was used for articles selection and the following keywords were used in the MeSH: Lateral epicondylitis, Surgery, and Physiotherapy. With regard to the inclusion criteria, the articles were selected based on the inclusion of one of the following topics: lateral epicondylitis and surgery, maintenance, and other non-operative modalities of treatment and pain control. Exclusion criteria were all

other articles that did not have one of these topics as their primary endpoint.

## DISCUSSION

The lateral epicondyle is the insertion point of the wrist extensor muscles along the lateral part of the elbow. With minor and often unnoticed trauma that comes along, even with the repeated daily activities in certain patterns, some pathological changes contributing to the development of lateral epicondylitis happen. These changes involving micro-tears and inflammation in the acute phase can mainly be found in the tendon of the extensor carpi radialis brevis

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**How to cite this article:** Khalid Aldosari, H., Mohammed A. Alhaji, Z., Hassan Zahri, F., Masoud Alqahtani, J., Mohammad Al Khudair, A., Omar Bakhshwaen, S. The Role of Family Physician in Management of Tennis Elbow in PHC. Arch Pharma Pract 2019;10(3):77-80.

muscle, which is the most commonly affected muscle as well. However, the inflammation process from which this disease derives its name actually happens only in the acute phase, but degenerative tendinopathy that develops along with disproportionate collagen tissue has been associated further in the pathophysiology of the disease<sup>[4]</sup>. Hence, the classic approach of this disease is a wait and see approach, these degenerative angiofibroblasts usually tend to be broken down and disappear in a few months to a year in most patients<sup>[3]</sup>. This disease is mainly a disease of activity and overuse that has a larger prevalence in people doing certain activities such as tennis players, office workers, nurses, cashiers, and plumbers. The movements associated with the disease usually are repetitive wrist motion (supination and extension) or a power grip with or without weight, which are usually observed in the above-mentioned jobs and activities. Age is also considered as a risk factor in most patients being between 30 and 50 years old; however, anyone can have the disease, especially in case of having the previously-mentioned risk factors. Taking history is a major pillar in the overall management of this disease, due to the fact that identifying the risk factors and trying to avoid them has a major role in treating the disease<sup>[5]</sup>. A patient with this disease usually shows a mild or severe pain with or without weakness; generally notable more with specific activities such as playing tennis or even minor daily activities like drinking from a cup. Sensitivity to pressure on the lateral bony part of the elbow can be reported by the patient and/or elicited by the physician while examining. Nevertheless, the clinician shall never rule out any other differential diagnoses and it should be noted that in some cases, radial tunnel syndrome may coexist along with lateral epicondylitis<sup>[6, 7]</sup>. This is mainly due to the proximity of the posterior interosseous nerve, a branch of the radial nerve, to the radiocapitellar joint. Furthermore, this is therapeutically important as certain modalities rely on anatomical involvement such as the arthroscopic release of the extensor carpi radialis brevis tendon is a safe and reliable procedure in selected patients<sup>[8]</sup>. There are some specific pain-eliciting tests that can be used to narrow down the clinical differential diagnoses and be more certain of the cause of pain. The main tests that are used include Cozen's test in which the physician asks the patient to do a 90-degree elbow flexion with forearm pronation and Mill's test in which the physician has the patient in wrist dorsiflexion with an extended wrist, in both of these tests pains will be more pronounced<sup>[9]</sup>.

The disease has many implications with even interference in the daily life and work of the patients, rendering them with severe pain unable to perform daily activities. Therefore, it has major implications not only on the patient but also on the economy and the burden on the health care system. Diagnosis is mainly clinical in this disease; however, imaging is also done and it greatly helps in determining the proper therapeutic choice for specific patients, for example, MRI has a great impact on deciding extensive treatment modalities in epicondylitis cases<sup>[10]</sup>.

Pain control should be and indeed is the main objective of therapeutic management for the family physician since it is the main concern and disturbs the normal lifestyle in many patients<sup>[11, 12]</sup>. This can be achieved through various ways including non-pharmacological ones such as rest and physiotherapy and pharmacological ones such as analgesics and corticosteroids. Patient-based decision regarding treatment and follow-up are the cornerstone in the management of the disease. Furthermore, the physician has advanced options, for example, lateral epicondylitis retains its role as "the main indication for extracorporeal shock wave therapy"<sup>[13]</sup>. However, some shock therapy studies reported no significant benefit. Steroidal injections were more capable of reducing pain in comparison to the shock therapy<sup>[14]</sup>. Moreover, two older trials reported conflicting results with no significant reduction in pain<sup>[15]</sup>. Side effects are minimally liable to occur and include transient pain, exanthema, and nausea<sup>[14]</sup>. Another option is platelet-rich plasma injection, which significantly improves patients' chronic condition in terms of reducing pain and improving function<sup>[16]</sup>. This superiority of platelet-rich plasma injections over corticosteroids is evident in other studies as well<sup>[17]</sup>. One of the major options of treatment is botulinum toxin, which has a great outcome in improving the pain of lateral epicondylitis; however, it has a major risk of digital paresis and even paralysis<sup>[18]</sup>. But another trial reported contradicting results, where the participants failed to significantly benefit from these injections<sup>[19]</sup>.

Surgical approaches to tennis elbow can be grouped into open, percutaneous, and arthroscopic categories. As a family physician, it is important to convey the possibility of needing surgery if all other options failed and introduce the patient to the available said approaches. Nirschl's open surgery focuses on tendinosis and removal of the affected tissue. In modern times, a smaller incision is made with one bone penetration of the lateral condyle (also known as the mini-open Nirschl), and the affected limb is then well rested in immobilisation for approximately three months<sup>[20]</sup>. This modified technique has shown good benefits over a decade of follow-up<sup>[21]</sup>. Arthroscopic management of a recalcitrant epicondylitis is of great clinical importance; arthroscopy directly resects the affected tendinosis. Patients that undergo this surgery usually do not need any further surgery or repeated injections and show great outcome during follow-up<sup>[22]</sup>. While comparative studies on open and arthroscopic surgeries illustrated no statistical significance, arthroscopic release had patients retaining functionality earlier with reduced postoperative therapy<sup>[23]</sup>. Most patients suffering from epicondylitis choose closed treatment. It is necessary to secure the lateral collateral ligament, as it is prone to iatrogenic injury regardless of the rare complications in closed treatment<sup>[9]</sup>.

The systematic review conducted by Bateman *et al.* proposed no difference between the outcomes of surgical and nonsurgical modalities in treating tennis elbow<sup>[24]</sup>. Nevertheless, exercise has been reported to be helpful in the conservative management of lateral epicondylitis as pain was

significantly reduced in 12 weeks [25]. Passive modalities in managing epicondylitis include ice, taping, acupuncture, and electrotherapy. However, many of these modalities have not yet shown significant benefits in clinical trials. Green *et al.* demonstrated that the use of acupuncture remained inconclusive [26]. Furthermore, physiotherapy can still be beneficial especially in cases that are willing to consider a proper regimen and follow-up. The trial by Bisset *et al.* showed that physiotherapy and especially elbow manipulation combined with exercise were more beneficial than corticoid injections after six weeks. They also demonstrated how early superior benefit from steroid injections was reversed within six weeks with incremented recurrence [27]. However, other multiple studies confirmed the significant effectiveness of steroids within variable durations [28]. Other modalities, like imaging therapy by pulsed sonography demonstrated variable levels of improvement in patients mainly regarding their healing and pain improvement [29].

As a physician, communicating the expected prognosis and chances of recovering to the patient's normal daily routine is considered a good practice and the patient almost always asks about it. The general prognosis in this self-limiting disease is variable; however, people usually show a resolve of the symptoms within 6 months. With good conservative management and changing their lifestyle, especially the movements responsible for further stress on the elbow, patients reported up to 95% improvement and recovery rate. However, there is still a chance of needing a surgical intervention when conservative therapy is rendered ineffective (usually after 6-12 months post-treatment with no improvement), but this only happens in around 5% of patients. Fortunately, surgery has a good overall prognosis with 80 to 90% of patients undergoing surgery reporting pain relief and better performance and strength in their daily activities. However, a major point that many clinicians miss is that this disease has a chance of recurrence, and this is considered a new episode, not a continuation of the resolved one [30].

Recent studies have been done to show the efficacy of recent modalities of treatment. Extracorporeal shock-wave therapy (ECSW) is known to most clinicians with its usage in kidney stones management; however, it was proposed as a modality of treatment. Even though the mechanism is not fully clear, it has been proven to have positive results in the treatment of lateral epicondylitis. Another recently studied modality is the percutaneous radiofrequency thermal treatment that is suggested as a way to remove the pathological tissue via inducing thermal microtenotomy, and it showed good promise with positive outcomes [31]. Furthermore, low-level laser therapy is another modality that showed short-term promising findings due to their stimulating effect on collagen production especially for tendons, but the adequate dosage and wavelength selection is vital [32]. However, there are still some questionable findings in the study that may need more studies, such as no decrease in tendon size in radiofrequency

thermal therapy and the long-term efficacy of low-level laser therapy. Overall, the approach to the management of lateral epicondylitis is still not limited to an international guidelines or regime, even with these many available options. Thus, the family physician expertise and clinical judgment plays a vital role in reaching the main principles of the treatment [32].

## CONCLUSION

Elbow pain is one of the most common presentations in the primary health care setting, and lateral epicondylitis is one of its main causes in the general population. Furthermore, this disease is mainly diagnosed clinically; accordingly, the role of a family physician is crucial in identifying, diagnosing, and managing these patients. With multiple options regarding treatment, physicians need to stay updated with all pharmacological, non-pharmacological, and even surgical options of therapy. Even though there are many promising modalities for management, inconclusive evidence and large sample studies remain a major obstacle for merging them in protocols. However, this creates an opportunity for research to further prove or dispose of these new treatments' significance and confirm their clinical results. Family physicians have the major role in alleviating the pain and restoring the function in these patients and even referring these patients to a specialist at the proper time remains an important role in this disease.

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