

TENNIS ELBOW



Rogerio Da Silva, MD
Rua Carmelo Damato, 40
Planalto Paulista, Sao Paulo
04084-100
BRAZIL
Tel: +55 11 8171 6767
E-mail: rgtsilva@uol.com.br

Lateral The lateral epicondylitis of the elbow is a very common injury in the orthopedic sports medicine field. Although the pathoanatomy of what is now usually commonly referred to as tennis elbow is unclear, most agree that it commonly involves repetitive overuse of the common wrist extensors at their origin on the lateral epicondyle.^{1,2}

SPORT SPECIFIC ETIOLOGY

Etiology in Sports Field

The majority of tennis elbow sports active patients with tennis elbow play a racquet sport, and most of them are amateur tennis players. The most frequent main reason for developing the symptoms is an inappropriate technique of for the tennis strokes, mainly for the one-handed backhand stroke. Kelly et al reported a different muscle contraction pattern for tennis players who that had a tennis elbow injury compared with those who did and the ones that do not suffer from that condition. They, and pointed out that the players whom they that were examined with painful tennis elbow had and presented the pain activity a delayed activation pattern of their wrist little bit late the extensor muscles during the one-handed backhand stroke³. This delay causes a higher amount of vibration to be that is transmitted to for the forearm and elbow during the contact of the ball within the racquet strings, thus exposing leading the athlete to the risk of injury. Usually in those athletes the elbow is flexed during the contact of the ball within the racquet, and because of that the insertion of the extensor carpi radialis brevis (ECRB) has to support a high amount of stress during the backhand stroke.

CLINICAL AND PATHOLOGICAL FINDINGS

The majority of tennis elbow patients continue to play tennis with the mild symptoms and use various modalities non-physician recommendations after the first episode of treatment to manage the pain. The time between the onset of first pain at the elbow symptoms and the clinical consultation can vary from months to until years, and for this reason it is mostly chronic cases because of that present for treatment at the office we treat lots of chronic cases. During the clinical

assessment it is important to ask specific questions about tennis topics: the type of racquet that the athlete uses; whether or not, if he/she had changed the racquet before the beginning of the pain; the tension of the strings; the racquet weight; the type of backhand stroke (with one or two hands); with which kinds), and also if the pain is feeling during what kind of strokes (serve, backhand, forehand or volley) is the pain felt.). Also we should usually ask about pain during activities of daily living. A typical pain is reported at the lateral aspect of the elbow, directly at the lateral epicondyle. The Maudsley test is usually positive, and in some cases the strength of the forearm muscles (measured by the Jamar[®] dynamometer) is decreased.

RADIOLOGY ASSESSMENT

Radiographs of the elbow are usually normal, unless there is calcification present. a não ser que existam calcificações. A good ultrasound examination is usually sufficient to determine the injury. In some chronic cases, an MRI of is ordered to access the elbow joint is obtained (FIGURE 1), because therein some chronic cases the pain may be associated intra-articular chondral felt because of internal cartilage damage. This is In my opinion that's the only justification of condition that can justify the high cost of this investigation. exam.

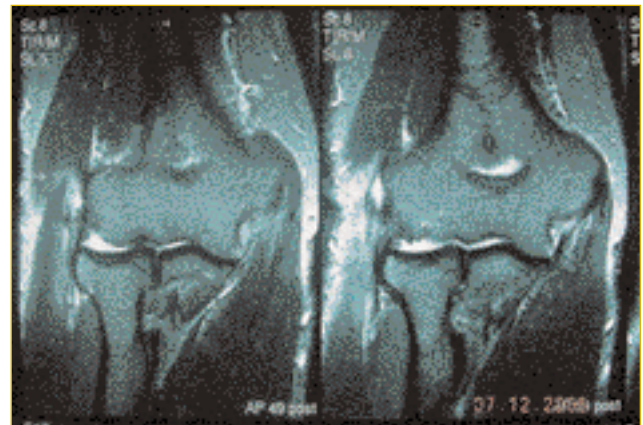


Figure 1: MRI of the right elbow of an amateur tennis player showing a tendon degeneration of the ECRB with a rupture.

TREATMENT

Non surgical modalities such as activity modification, coaching of better techniques orientations related to correct adequate tennis strokes, physical therapy, and corticosteroid injections are reported to have between 75 to 90% success rates. Despite of some good reports papers in the literature, my personal experience is that the corticoid injections just delay the surgical procedure in the active tennis players, because they will only relieve just relive the pain for on 2 or 3 months after the

TENNIS ELBOW *(cont.)*

injections. There are many research papers concerning this topic. We know that the corticoid injections cause the death of the tenocytes present within the tendon.⁴

In resistant cases, open surgical debridement of the extensor carpi radialis brevis (ECRB) has been the gold standard of treatment. The surgery aims to resect the degenerative tissue present in the ECRB tendon – it does not necessarily have to release the tendon insertion (FIGURE 2).



Figure 2: Degeneration of the tendon in a surgical case (tip of the knife).

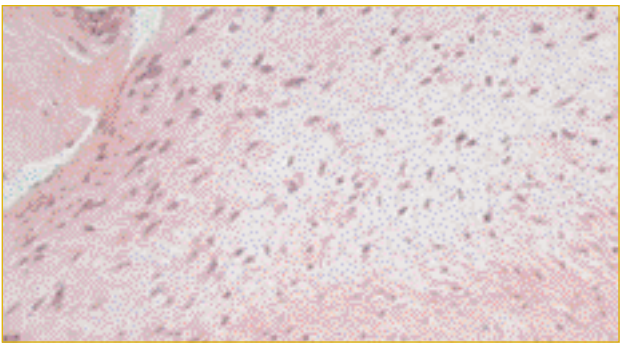


Figure 3: Microscopic exam of a surgical resected tendon showing the typical myxoid appearance with fibrotic tissue.

ADVANCES IN THE TREATMENT

Recently, alternative modalities such as ultrasound, laser treatment, botulinum injection, acupuncture, extra-corporeal shockwave therapy and autologous blood injection for resistant lateral epicondylitis have been investigated. A paper recently published by Mishra et al¹⁰ reported a good result in a cohort study (level 2 of evidence) among patients that were injected in the painful site with autologous platelet derived growth factors. We are using this method in our clinic, but at this stage since now we do not have a sufficient number of patients with an adequate follow-up to report here. However, the results so far are encouraging and we are continuing this study of this method in non-surgical and also in surgical patients, to improve the healing and to decrease the time away from tennis courts.

REFERENCES

1. Kraushaar B, Nirschl R. Current concepts review: tendinosis of the elbow (tennis elbow). *J Bone Joint Surg* 81-A:259–78, 1999
2. Kamien M. A rational management of tennis elbow. *J Sports Med* 9(3):173–91, 1990
3. Kelley JD, Lombardo SJ, Pink M, Perry J, Giangarra CE: Electromyographic and cinematographic analysis of elbow function in tennis players with lateral epicondylitis *Am J Sports Med* 22(3): 359-363, 1994
4. Newcomer KL, Laskowski ER, Idank DM, McLean TL, Egan KS. Corticosteroid Injection in Early Treatment of Lateral Epicondylitis. *Clinical Journal of Sport Medicine*, 11:214–222, 2001
5. Dunkow PB, Jatti M, Muddu BN. A comparison of open and percutaneous techniques in the surgical treatment of tennis elbow. *J Bone Joint Surg Br* 86(5): 701-704, 2004
6. Mullett H, Sprague M, Brown G, Hausman M: Arthroscopic treatment of lateral epicondylitis: clinical and cadaveric studies. *Clin Orthop Relat Res*. Oct;439:123-8, 2005
7. Jerosch J, Schunck J. Arthroscopic treatment of lateral epicondylitis: indication, technique and early results. *Knee Surg Sports Traumatol Arthrosc*. 2006 Apr;14(4):379-82. Epub 2005 Aug 3.
8. Regan W, Wold LE, Coonrad R, et al.: Microscopic histopathology of chronic refractory lateral epicondylitis. *Am J Sports Med* 20:746–749, 1992
9. Galliani I, Burattini S, Mariani AR, et al.: Morpho-functional changes in human tendon tissue. *Eur J Histochem* 46:3–12, 2002
10. Mishra A, Pavelko T: Treatment of Chronic Elbow Tendinosis With Buffered Platelet-Rich Plasma. *Am J Sports Med* 34(11): 1774-1778, 2006

Figs 1 & 2 do not clearly show the difference as the elbow appears to be extended in both.