

Treatment of patellar tendinopathy in sportsmen through In Percutaneous Intratendon Electrolysis (PIE)

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PURPOSE:

Patellar tendinopathy or "jumper's knee" is considered more a degenerative process than an "inflamed tendinitis" proper. Histopatological studies do not show the presence of the inflammatory cells, rather disruption of the collagen fibres, degeneration (deterioration) of the mixoide anoxic signs of tenocitos. The Intratendon Electrolysis Percutaneous (PIE) consists in the application of high intensity current through cathodic needles provoking an electro-chemical reaction in the region of the degenerated tendon. The disassociation of the water and salt molecules into their constitutional elements will cause, through ionic instability. The reaction organic produced under the active electrode or cathode needle will provoke very localised inflammation, only and exclusively, in the region we are treating, allowing fagocitosis and the healing of the tendon.

MATERIALS AND METHODS:

A survival analysis is done, using the Kaplan-Meier method according to the Victorian Institute of Sport Assessment (VISA) classification, on 34 sportsmen with patellar tendinopathy who have been treated with PIE.



Fig1: *patellar tendon anesthesia*

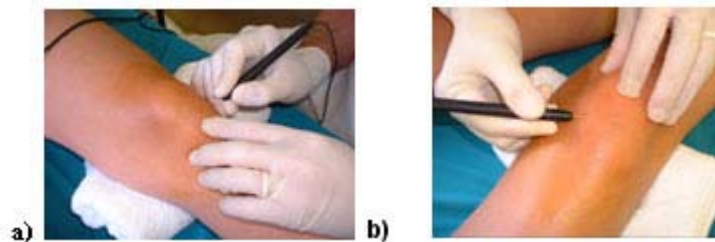
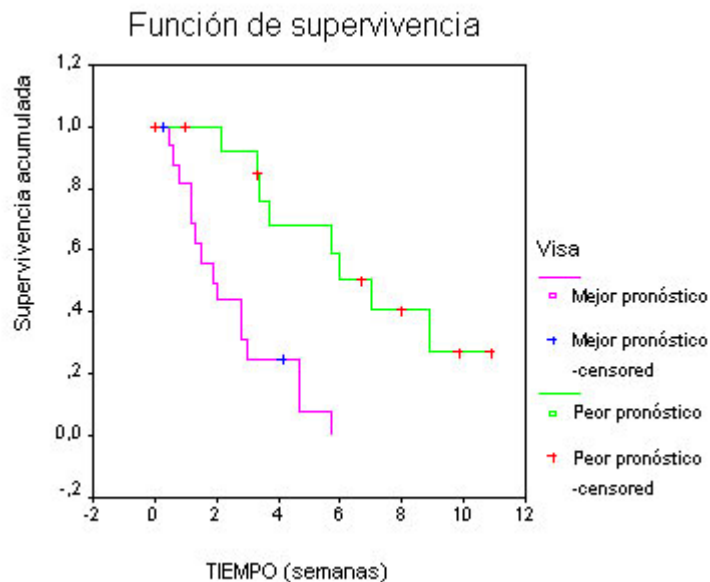
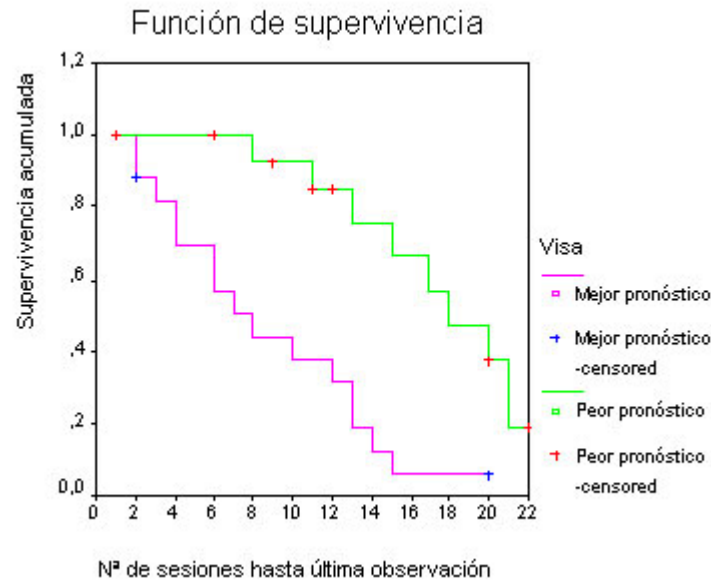


Fig. 3: *Sportsman with patellar tendonitis of a year of evolution, A) treatment with PIE in inferior border patellar. B) PIE in medial face of the patellar tendon (SánchezJM, 2002).*

The number of knees treated was 39 with an age range of 16 to 53 years (average 25.4 years). Of the 34 patients, 33 were diagnosed with entesopathy of the inferior pole of the patella and only one case presented entesopathy quadricepsital associated with entesopathy patellar. The range of clinical evolution was between 4 and 288 weeks (an average of 19,7 months) and the time of absence from sporting activity as a consequence of the tendinopathy covered a range of between 0 and 240 weeks (an average of 12.6 months). For their first observation they were passed (assessed) through the VISA scale and depending on the result obtained by each one of the 34 patients they were categorized into two groups: GROUP 1: (17 patients who during the primary observation had a VISA <50 = Patients with the worst prognosis) and GROUP 2 (17 patients who in the primary observation had a VISA >50 = Patients with the better prognosis) The patients were placed in supine decubitus with the knee in slight flexion (+ / - 20°) placing a pad in the popliteus area. They were carried out a shave, and disinfection of the region to try with polividona yodada (Betadine). The investigator used disposable sterile gloves in each intervention. To all the patients they were applied in each session EPI during a period of fifteen seconds three or four phases respectively, using an electroestimulador of two channels (Galvanic).

RESULTS:

of the 17 patients in GROUP 1, or the worse prognosis, 7 abandoned the treatment. By the 6th. week of treatment 50.2% of the remaining patients had been cured and by eight weeks the cure rate was 77%. 27% of the patients hadn't been cured by the 10th. week of treatment. The average time spent in treatment of those who were cured in group 1 was 6.8 weeks and the average number of sessions required was 17.4. Of the 17 patients in GROUP 2, 15 were cured and 1 abandoned the treatment. The percentage of patients cured was 88% and uncured 11.7% .The average timespan of the treatment was 2.45 weeks and the average number of sessions was 8.7. In the survival function with respect to the time in weeks from the first observation to the last for the group with the worse prognosis (VISA<50) and the group with the better prognosis(VISA<50) there are differences which are statistically significant (p=0,001). Likewise in the survival function with regard to the number of sessions of treatment undergone for group1 and group 2 there are statistically significant differences (p = 0,0006).



Graph A. Function survival regarding the number of sessions for the group of worse pronostic (VISA <50) and of the group of better pronostic (VISA> 50) being the statistical significance of p = 0,0006. Graph B.. Function survival regarding the time from the first observation to the last observation for the group of worse pronostic (VISA <50) and of the group of better pronostic (VISA> 50) with differences statistically significant being the value p = 0,0001

CONCLUSION : It can be seen that the PIE technique is highly effective in the treatment of patellar tendinopathy, independently of the duration of its clinical evolution and Blazina classification, 28 patients were in stage III (82.3%) and 6 were in stage II (17.6%). The patients with the better prognosis are the ones that in the first observation had a result of VISA >50, 100% of them being cured after 15 sessions of treatment and in an average of 2.45 weeks. The patients with the worse prognosis are those who have a result of the primary

observation <50. Even then, 50% were cured in 17 sessions of treatment and in a period of 6 weeks. The VISA scale is an effective instrument for the prognosis of patients with patellar tendinopathy to whom PIE is applied independently of the duration of clinical evolution.

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