

Extracorporeal Shockwave for Chronic Patellar Tendinopathy

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Abstract

Background: Chronic patellar tendinopathy is an overuse syndrome with pathologic changes similar to tendinopathies of the shoulder, elbow, and heel. Extracorporeal shockwave was shown effective in many tendinopathies.

Hypothesis: Extracorporeal shockwave therapy may be more effective than conservative treatment for chronic patellar tendinopathy.

Study Design: Randomized controlled clinical trial; Level of evidence, 2.

Methods: This study consisted of 27 patients (30 knees) in the study group and 23 patients (24 knees) in the control group. In the study group, patients were treated with 1500 impulses of extracorporeal shockwave at 14 KV (equivalent to 0.18 mJ/mm² energy flux density) to the affected knee at a single session. Patients in the control group were treated with conservative treatments including nonsteroidal anti-inflammatory drugs, physiotherapy, exercise program, and the use of a knee strap. The evaluation parameters included pain score, Victorian Institute of Sports Assessment score, and ultrasonographic examination at 1, 3, 6, and 12 months and then once a year.

Results: At the 2- to 3-year follow-up, the overall results for the study group were 43% excellent, 47% good, 10% fair, and none poor. For the control group, the results were none excellent, 50% good, 25% fair, and 25% poor. The mean Victorian Institute of Sports Assessment scores were 42.57 ± 10.22 and 39.25 ± 10.85 , respectively, before treatment ($P = .129$) and 92.0 ± 10.17 and 41.04 ± 10.96 , respectively, after treatment ($P < .001$). Satisfactory results were observed in 90% of the study group versus 50% of the control group ($P < .001$). Recurrence of symptoms occurred in 13% of the study group and 50% of the control group ($P = .014$). Ultrasonographic examination showed a significant increase in the vascularity of the patellar tendon and a trend of reduction in the patellar tendon thickness after shockwave treatment compared with conservative treatments. However, no significant difference in the appearance, arrangement, and homogeneity of tendon fibers was noted between the 2 groups. There were no systemic or local complications or device-related problems.

Conclusion: Extracorporeal shockwave therapy appeared to be more effective and safer than traditional conservative treatments in the management of patients with chronic patellar tendinopathy.