CHANGES IN STATIC AND DYNAMIC FORCE DEVELOPMENT AFTER TREATMENT OF MYOFASCIAL TRIGGER POINTS USING FOCUSED ESWT IN CASE OF SPORTS-RELATED SHOULDER PAIN.

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Problem
Myofascial trigger points are a frequent cause of performance-limiting shoulder pain in athletes. The study was designed to determine what improvements can be achieved by an exact trigger point therapy in active athletes suffering from acute or chronic shoulder pain with regard to their pain condition and force development.

Material and method
A randomized, controlled, prospective study with n = 60 athletes suffering from shoulder pain (30 treated / 30 not treated, average age = 34.6 years), was carried out. The examinations were performed over a period of 6 weeks with four treatments (one treatment per week). As a therapy, piezoelectrically generated focused extracorporeal shock waves (fESWT) were applied to myofascial trigger points (MTrps) according to the principles of trigger point therapy using a Richard Wolf Piezoson 100 plus. The treatment was carried out exclusively in the low-energy range (max. 0.28 mJ/mm³).

A sport-specific case history, a clinical examination as well as an evaluation of the pain symptoms were performed by means of a VAS score and the subjective rating by means of the Simple Shoulder Score (SSS). The sensomotorics were tested by means of the angle reproduction test, the isokinetic and isometric rates of force development using a CYBEX Norm.

Results
After direct trigger point treatment in 30 patients using fESWT, regarding the pain condition a significant reduction in pain was found. In correlation with all examinations and tests carried out, both in the SSS and in the angle reproduction test an improvement trend could be measured. Regarding isokinetic force development for ABD/ADD and IRO/ARO a significant increase could be revealed. Isokinetic measurements (60°/sec.) also yielded a significantly higher maximum torque as well as a significantly higher total work for both ABD/ADD and IRO/ARO.

In the control group no significant changes were found.

Conclusion
The treatment of myofascial trigger points using fESWT significantly improves the pain symptoms as well as the performance of athletes suffering from acute or chronic shoulder pain.

Keywords: Shock Waves, Skeletal Muscle, Shoulder

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