

Original Algorithm of Rehabilitation Protocol with Use of Ultrasound - Study Based on Achilles Tendon Reconstruction Cases

Agnieszka Barbara Rosińska¹, Beata Ciszowska-Łysoń¹, Robert Śmigieński¹

¹Carolina Medical Center, Warsaw, POLAND

Objectives: The study was conducted in order to indicate the usefulness of an ultrasound examination in physiotherapy of patients who underwent Achilles tendon reconstruction. The aim was to eliminate the risk of the procedure's common complication, i.e.: the formation of adhesions between surrounding tissues and the tendon.

Methods: This study analyses 10 cases of anatomical reconstruction of the Achilles tendon. In all cases the surgeon, the physical therapist and the rehabilitation protocol were the same. The algorithm: 1. The weekly protocol included: • the evaluation of: ROM, gliding, tissues swelling, tendon ripple, bursa and fat body movement, possible gaps, and vascularity; • medical examination including: observation, palpation, and ultrasound examination. 2. Every PT session was precluded by an examination including: observation, palpation, and ultrasound evaluation. 3. The US examination was performed to evaluate the functioning of tissues in regard to the tendon's healing stage. • 2-3 weeks after the surgery: the assessment of gliding during passive plantar flexion, the examination included the use of modified Thompson's test; • after 3 weeks: the assessment of tendon tension and the isometric plantar flexion strength of the medial gastrocnemius muscle; • 3rd and 6th week: the assessment of swelling, vascularity (before and after the PT session including the cooling of the tendon), Kager's triangle fat body assessment, and active gliding evaluation, testing the gastrocnemius muscle strength during active movement, • from 6th week until the end of physiotherapy: the evaluation of tendon gliding and gastrocnemius' strength (body weight bearing); • the final US examination performed by the radiology specialist in the 12th week after the surgery, the assessment of gliding and muscle strength.

Results: During the final medical examination performed by the doctor in 12th week after the surgery, there were no tendon adhesions between the tendon and surrounding tissues that would limit the tendon's gliding within its sheath. The weekly US examination helped while choosing appropriate physical therapy methods that increased the functional recovery of the Achilles tendon.

Conclusion: 1. The use of ultrasound device during each PT session enables the therapist to choose appropriate methods in order to optimise the rehabilitation process depending on the current condition of the patient. This approach creates good conditions for the optimal functional recovery. 2. The ultrasound works like a biofeedback.

The Orthopaedic Journal of Sports Medicine, 2(11)(suppl 3)

DOI: 10.1177/2325967114S00167

©The Author(s) 2014