

Original Functional Rehabilitation Programme Based on Healing Physiology After Reconstruction of Articular Cartilage in Knee Joint

Volodymyr Guliyani¹, Marcin Plenzler¹, Dariusz Straszewski¹, Marcin Pańnik¹, Olga Korbolewska¹, Wojciech Suszczyński¹, Robert Śmigielski¹

¹Carolina Medical Center, Warsaw, POLAND

Objectives: The evaluation of the quality of articular cartilage remodelling by means of arthroscopy findings and MRI imaging in a patient, who completed the original rehabilitation program.

Methods: The rehabilitation program was conducted according to the Carolina Medical Center rehabilitation protocol. The patient was a 46 years old woman with fourth-degree cartilage damage (Outerbridge classification) located on the right medial femoral condyle of the following size: 1.5x2cm and 1x1.5cm. An arthroscopic micro-fracture repair of the cartilage was performed on the medial femoral condyle of the right knee. After the surgery the original rehabilitation program has been divided into 4 stages based on biological aspects of the physiology of cartilage tissue healing and biomechanics of the knee joint. 18 months after the reconstruction and a complete rehabilitation program, the patient underwent another right knee arthroscopy. During the surgery cartilage was been reevaluated in vivo. A pre-operative MRI was made, as well as a post-operative one after the second arthroscopy. The aim of the MRI examination was to objectify the treatment's results.

Results: The applied surgical treatment and following rehabilitation resulted in the remodelling of the cartilage-like tissue, which was observed in, both, the arthroscopy and the MRI imaging. The MRI evaluation of the quality of the cartilage tissue 18 months after the reconstruction gave very good results according to the MOCART scale (magnetic resonance observation of cartilage repair tissue).

Conclusion: The positive results of the cartilage remodelling process recorded after the application of the original rehabilitation programme encourages to continue the study on a larger group of patients.

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