ABSTRACT

Title: The influence of ACL plastic surgery in relation to the knee joint stability by female handball players and the possibility to influence this topic during training sessions

The concept of the problem: One of the most common injuries of lower extremities during a handball game is the tear of the anterior cruciate ligament (ACL) often leading to instability and early offset of degeneration of the knee joint. In order to be able to continue the athletic career, the patient may require surgery of the cruciate ligament. Usually 6-8 months after the operation, the patient should be able to return to her full extend of the athletic competition. Never-the-less, functional deficit of the operated knee is not uncommon. Often times, patients post ACL surgery experience secondary injuries such as the injury of the opposite knee joint or recurring defects of the prior injured ACL.

Objectives: To evaluate the conditions of knee joints by female players (2-5 years) post ACL plastic surgery and to attest the effectivity of the exercise program for improving knee joint stability by those players.

Methods: The theoretical part follows up the given issue as a research and theoretical overview of the current findings based on czech and also foreign literature. The practical part is dedicated to the application of an exercise program. It was put together for the purpose of this theses, for a specific group of probands during a three month period following the program 2x a week. Overall 10 female probands participated at this research, all of which were 2-5 years post ACL surgery and have been competing in handball at the professional level.

Results: The initial examination proved a difference between the healthy lower extremity and the lower extremity post ACL surgery by all probands. The designed exercise program was followed exactly by 60% of probands, whose results by the final testing proved the betterment of the knee joint stability and function. The other 40% of probands exercised irregularly, 30% of those did not reach any betterment. The remaining 10% reached improved results despite of the erratic approach to the exercise program.

Keywords: handball, ACL surgery, knee joint stability