World Academy of Science, Engineering and Technology
International Journal of Sport and Health Sciences
Vol:17, No:07, 2023

Higher-Level Return to Female Karate Competition Following Multiple Patella Dislocations

Authors : A. Maso, C. Bellissimo, G. Facchinetti, N. Milani, D. Panzin, D. Pogliana, L. Garlaschelli, L. Rivaroli, S. Rivaroli, M. Zurek, J. Konin

Abstract : 15 year-old female karate athlete experienced two unilateral patella dislocations: one contact and one non-contact. This challenged her from competing as planned at the regional and national competitions as a result of her inability to perform at a high level. Despite these injuries and other complicated factors, she was able to modify her training timeline and successfully perform, winning third at the National Cup. Initial pain numeric rating scale 8/10 during karate training isometric figures, taking the stairs, long walking, a positive rasp test, palpation pain on the lateral patella joint 9/10, pain performing open kinetic chain 0°-45° and close kinetic chain 30°-90°, tensor fascia lata, vastus lateralis, psoas muscles retraction/stiffness. Foot hyper pronation, internally rotated femur, and knee flexion 15° were the postural findings. Exercise prescription for three days/week for three weeks to include exercise-based rehabilitation and soft tissue mobilization with massage and foam rolling. After three weeks, the pain was improved during activity daily living 5/10, and soft tissue stiffness decreased. An additional four weeks of exercise-based rehabilitation was continued. At this time, axial x-rays and TA-GT TAC were taken, and an orthopaedic medical check was recommended to continue conservative treatment. At week seven, she performed 2/4 karate position technique without pain and 2/4 with pain. An isokinetic test was performed at week 12, demonstrating a 10% strength deficit and 6% resistance deficit both to the left hamstrings. Moreover, an 8% strength and resistance surplus to the left quadriceps was found. No pain was present during activity, daily living and sports activity, allowing a return to play training to begin. A plan for the return to play framework collaborated with her trainer, her father, a physiotherapist, a sports scientist, an osteopath, and a nutritionist. Within 4 and 5 months, both non-athlete and athlete movement quality analysis tests were performed. The plan agreed to establish a return to play goal of 7 months and the highest level return to competition goal of 9 months from the start of rehabilitation. This included three days/week of training and repeated testing of movement quality before return to competition with detectable improvements from 77% to 93%. Beginning goals of the rehabilitation plan included the importance of a team approach. The patient's father and trainer were important to collaborate with to assure a safe and timely return to competition. The possibility of achieving the goals was strongly related to orthopaedic decision-making and progress during the first weeks of rehabilitation. Without complications or setbacks, the patient can successfully return to her highest level of competition. The patient returned to participation after five months of rehabilitation and training, and then she returned to competition at the national level in nine months. The successful return was the result of a team approach and a compliant patient with clear goals.

Keywords : karate, knee, performance, rehabilitation
Conference Title : ICSMPTBE 2023 : International Conference on Sports Medicine, Physical Therapy and Biomedical Engineering
Conference Location : Copenhagen, Denmark
Conference Dates : July 10-11, 2023