Function of the knee joint during walking before and after the meniscus resection

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Introduction. Injuries of meniscus are one of the most frequent traumas of the knee joint (KJ). The functional investigation of the KJ may be at one part of way how to get more data for clinical decision making.
Purpose of this study was to investigate clinical and biomechanical data of meniscus pathology.
Methods. We have studied 47 patients with traumatic and degenerative tears of the KJ menisci and 20 healthy adults. Group 1 included 10 patients before and after the surgical treatment, Group 2 included 22 patients before treatment only, Group 3 included 15 patients after the surgical treatment only. We studied the biomechanics of walking and the function of the knee and hip joints.
Results. The temporal characteristics of the gait cycle did not exhibit any differences from the normal state in all the groups. For the first group, after the surgery we found a significant increase of the amplitude of the hip joint extension, both legs. In the first group prior to the treatment the KJ kinematics at the affected side did not differ from that at the intact side. After the treatment, the magnitude of the phase of the basic KJ flexion amplitude at the operated side statistically significantly decreased. The amplitude itself increased, but the difference did not reach a statistical significance due to high data dispersion. The second and third groups also had a statistically significant difference by the phase of the basic flexion with the same magnitude at the intact side. The abduction-adduction motions were decreased at the intact side after the surgery in the first group. In the joint of the intact side, a reduction in the abduction-adduction motions occurs after the treatment.
Conclusion. Thus, the meniscus injury results in slight disordering of the walking and biomechanics of KJ which is successfully compensated.