

Increased Knee Laxity with Medial Meniscus Resection; A Prospective Study of 4497 Patients with ACL Reconstruction

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Summary:

Medial meniscus resection increases and medial meniscus suture preserves anterior knee laxity after ACL reconstruction.

Abstract:

Purpose

The purpose of this study was to determine the effects on knee laxity of resection or repair of medial meniscus (MM) or lateral meniscus (LM), in the anterior cruciate ligament (ACL) reconstructed knee.

Methods

Our local database, at Capio Arthro Clinic, was used to review instrumented laxity measurements for a total of 4497 patients with primary Hamstring Tendons (HT) ACL reconstructions. The KT-1000 arthrometer, with an anterior tibial load of 134-N, was used to evaluate knee laxity pre-operatively and at 6-months post-operative follow-up. Patients with isolated anterior cruciate ligament reconstruction (ACLR) and ACLR with additional MM resection, MM repair, LM resection, LM repair or MM plus LM resection were compared, using the isolated ACLR group as a control group.

Results

All patients showed a significant reduction of knee laxity from pre-operatively to post-operatively. A statistically significant increased laxity was found in the ACLR+MM resection and ACLR+MM+LM resection groups compared to the isolated ACLR group, at follow-up. ACLR+MM repair group showed comparable laxity of isolated ACLR group with intact menisci. No significant differences were seen between the isolated ACLR group and the ACLR+LM resection and ACLR+LM repair groups.

Conclusions

In the setting of ACL reconstruction, additional resection of the medial meniscus increased laxity whereas repair of the medial meniscus was able to reduce it to values comparable to the ACL reconstructed knee with intact menisci. Both resection and repair of the lateral meniscus did not show a significant impact on anterior knee laxity. The medial meniscus functions as a critical secondary stabilizer in the ACL reconstructed knee. Surgeons should make every effort to repair the meniscus whenever possible, in the setting of ACL reconstruction, to restore the optimal kinematics of the knee joint.