

Paper #5

Increased Risk of ACL Revision with Non-Surgical Treatment of a Concomitant Medial Collateral Ligament Injury: A Cohort Study from the Swedish National Knee Ligament Registry

Eleonor Svantesson, MD, SWEDEN

Eric H. Senorski, PT, PhD, MSc, SWEDEN

Eduard Alentorn-Geli, MD, PhD, MSc, FEBOT, FACGME, SPAIN

Olof Westin, MD, SWEDEN

David S. Sundemo, MD, SWEDEN

Alberto Grassi, MD, ITALY

Svemir Custovic, MD, PhD, BOSNIA AND HERZEGOVINA

Kristian Samuelsson, MD, PhD, MSc, Prof., SWEDEN

Department of Orthopedics, Institute of Clinical Sciences, The Sahlgrenska Academy, University of Gothenburg
Gothenburg, SWEDEN

Summary:

There is sparse evidence on how concomitant collateral ligament injuries in the setting of an anterior cruciate ligament (ACL) rupture affects outcome after ACL reconstruction. This national registry study investigates how presence and treatment of a collateral ligament injury influence the risk of ACL revision and patient-reported outcome after primary ACL reconstruction.

Abstract:

Background

There is sparse evidence on how the treatment of concomitant medial collateral ligament (MCL) or lateral collateral ligament (LCL) injuries in the setting of an anterior cruciate ligament (ACL) rupture affects outcome after ACL reconstruction.

Purpose

To determine how concomitant MCL and LCL injuries affect outcome after ACL reconstruction.

Study Design:
Cohort study, Level III

Methods

Patients aged > 15 years who were registered in the Swedish National Knee Ligament Registry for primary ACL reconstruction between 2005 to 2016 were eligible for inclusion. One isolated ACL reconstruction group was created and six groups were stratified according to treatment of a concomitant MCL or LCL injury (non-surgical, repair or reconstruction). The outcomes were ACL revision and the two-year Knee Injury and Osteoarthritis Outcome Score (KOOS). Univariable and adjusted multivariable Cox regression were used to determine the proportional hazards of ACL revision, and the KOOS was compared using an analysis of covariance.

Results

Paper #5

A total of 19,457 patients (mean age 27.9 years, 59.4% males) met the inclusion criteria. An isolated ACL reconstruction implied a lower risk of ACL revision compared with presence of a non-surgically treated MCL injury (HR=0.61 [95% CI 0.41-0.89], $p=0.0097$), but not compared with MCL suture repair or reconstruction. The risk of ACL revision did not differ between isolated ACL reconstruction and patients with a concomitant LCL injury. A concomitant MCL or LCL injury was associated with a worse two-year KOOS compared with an isolated ACL injury. The largest difference was found in the sports and recreation subscale across all groups, with MCL reconstruction resulting in the largest difference (14.1 points [95% CI 4.3-23.9], $p=0.005$).

Conclusion

Non-surgical treatment of a concomitant MCL injury in the setting of an ACL reconstruction may increase the risk of ACL revision. However, surgical treatment of an MCL injury was associated with a worse two-year patient-reported knee function. A concomitant LCL injury does not impact the risk of ACL revision compared with an isolated ACL reconstruction.