

Increased Risk of ACL Revision After Anteromedial Compared to Transtibial Technique for Femoral Drillhole Placement During ACL Reconstruction. Result from the Danish Registry of Knee Ligament Reconstruction

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Summary:

Increased risk of revision after primary ACL surgery using anteromedial technique for femoral drilling.

Abstract:

OBJECTIVES:

The concept of anatomical ACL reconstruction (ACLR) has led to an increasing use of the anteromedial portal for femoral drill hole placement due to better ability to reach the anatomical ACL footprint. The anteromedial drilling technique is more challenging which potentially could impact outcome and failure rate. The Danish registry of Knee ligament reconstruction (DKRR) has monitored the quality and development in ACLr since 2005 and has registered femoral drilling technique since 2007.

The objective of this study is to report revision rates and clinical outcome with the transtibial and anteromedial approach for femoral drilling during ACLr.

METHODS:

Our prospective cohort investigated was 10,901 primary ACL reconstruction procedures from the DKRR in the period from 2005 to 2011. The survival of the two different femoral drilling techniques was determined using revision ACLr as primary endpoint. For statistical analysis Kaplan Meier and cox regression analysis were used. Instrumented knee laxity measurements, KOOS and Tegner scores were used as functional and patient reported outcome measures. →

RESULTS:

The use of anteromedial approach in Denmark increased from 13% in 2007 to 66% in 2011. The cumulative revision rate after 2 years using anteromedial femoral drilling and transtibial femoral drilling was 1.8% and 3.2%, respectively. Anteromedial technique was associated with an increased risk of revision of 1.77 (CI: 1.34-2.33). Furthermore, we observed that the patients with AM technique for drill-hole placement had an increased risk of having positive pivot shift test compared to the TT group with a risk ratio of 1,54 (1,33;1,77), $p < 0.01$. One year postoperatively the KOOS and Tegner scores were comparable between the two groups.

CONCLUSION:

The introduction of anteromedial technique femoral drilling for ACLr has in Denmark resulted in an increased risk of revision compared to transtibial technique. The risk of revision is generally low (5 % within 5 years) A slight increase in technical failures due to the introduction of a new and more complex technique may explain the presented findings. Ongoing monitoring of the results with anatomical ACLr is therefore necessary and exemplifies the importance of a national registry.