

## Computer Assisted Surgery is Not More Accurate Than Conventional Arthroscopic Anterior Cruciate Ligament Reconstruction: A Prospective Randomized Clinical Trial

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### Summary:

There is no significant difference in accuracy or in precision of the tunnel placement between conventional and CAS ACL reconstruction.

### Abstract:

Background:

Accurate and precise tunnel placement is critical to the success of anterior cruciate ligament (ACL) reconstruction. A new development has been computer assisted surgery (CAS), aiding in the ACL bone tunnel placement during surgery. Our hypothesis is that CAS will allow for more accurate and precise tunnel placement in ACL reconstruction as compared to conventional surgery.

Methods:

This study is set up as a prospective double-blinded randomized clinical study. 100 patients eligible for ACL reconstruction were stratified per surgeon and randomized for either conventional or CAS. 3-dimensional CT measurement of the femoral and tibial tunnel placement was used as primary outcome to compare conventional ACL surgery to CAS.

Results:

No difference in placement of the femoral tunnel for the conventional group was seen compared to the CAS group (respective mean 39.7% versus 39.0% on the proximal-distal intracondylar axis ( $P = 0.70$ )). The anterior-posterior placement of the tibial tunnel was not significantly different, 38.9% in the conventional group and 38.2% in the CAS group ( $P = 0.58$ ). There was no significant difference in variance of either the femoral or the tibial placement in the two groups.

Conclusions:

There is no significant difference in accuracy or in precision of the tunnel placement between conventional and CAS ACL reconstruction.

Level of Evidence: Level 1