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## Fourteen-Year Prospective Results of a High-Density Polyethylene Prosthetic Anterior Cruciate Ligament Reconstruction

### Abstract

Our experience with an ultrahigh molecular weight polyethylene (UHMWPE) braided graft indicates that this prosthetic anterior cruciate ligament (ACL) is not associated with the complications of other prosthetic ligaments and has equivalent results compared to an autograft.

Nine patients underwent ACL reconstruction with the UHMWPE prosthetic graft, and seven patients received a bone-patellar-bone autograft. Each patient completed a questionnaire regarding their symptoms, a Tegner score, and a Lysholm Score. Objective results included a physical examination and KT1000 measurement. Noninferiority statistical methods were utilized to calculate a power to detect a clinically relevant difference between the groups. Six individuals from the prosthetic group and six of the controls have been followed an average of 14.1 years. In the prosthetic group, one graft failed at 9.5 years after the reconstruction.

There were no sterile effusions. There were no graft failures or sterile effusions in the controls. Tegner scores were equivalent (control = 5.5, prosthetic = 5.0) as were the Lysholm scores (control = 82, prosthetic = 80.5). KT1000 testing for the prosthetic group (mean side-to-side difference in maximal displacement = 1.75mm) was not inferior to the control group (2.0mm). In this prospective study with 14 years of follow-up, the subjective and objective results of a prosthetic ACL compares favorably to an autograft, suggesting reconsideration of a prosthetic graft options as a viable option.

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