

ANALYSIS OF OUTCOMES IN ACL RECONSTRUCTION USING THE CAYENNE MEDICAL APERFIX® SYSTEM

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BACKGROUND:

The Cayenne Medical AperFix (Scottsdale, AZ) anterior cruciate ligament reconstruction system is a novel polyether-ether ketone (PEEK) device for soft-tissue ACL reconstruction. AperFix is hypothesized to provide superior aperture fixation for anterior cruciate ligament allograft and autograft tissue with comparable, if not superior, outcomes to other devices. There are also theorized decreased surgical time and complication rates.

HYPOTHESIS:

ACL reconstruction with the AperFix system allows for improved surgical time, decreased bone tunnel widening, and excellent clinical outcomes.

DESIGN:

Prospective, single-surgeon, single-center, non-blinded.

METHODS:

Fifty consecutive patients diagnosed with complete anterior cruciate ligament rupture, with planned soft-tissue allograft or autograft reconstruction, underwent the procedure utilizing the AperFix device. Patients were analyzed pre-operatively and at six month post-operative intervals for demographics, tourniquet time, IKDC scores, return to desired level of activity, KT-1000, Pivot shift testing, Single-Leg hop test, and radiographic tunnel width. Patients were also monitored for participation in workers compensation programs, complications, and other extenuating circumstances.

RESULTS:

The patient demographics in the study were as follows: 30 males, 20 females, 25 right knees, 25 left knees, 35.6 average years of age, 13.8 months average follow up time, average tourniquet time of 60.1 minutes (compared to 81.6 minutes in the previous 100 patients undergoing soft tissue ACL reconstruction). Patients experienced an average improvement in IKDC score from 43.75 to 93.38 objectively. Pre-operatively there were 6 patients with an IKDC of D, 44 with C. Post-operatively this improved to 4 scores of B and 45 scores of A. One patient was lost to follow-up. Average KT-1000 measurement was .89 mm, well within standard deviation of normal. There was no significant tunnel widening on follow-up radiographs. Single-leg hop test improved to 94.7 % of normal on average. All results include outcomes for workers compensation patients. 7 of 50 patients did not return to the desired level of activity at the time of this study: 3 of these were in the workers compensation population, the remaining four were in the 6 month follow-up period.

CONCLUSION:

Soft-tissue ACL reconstruction utilizing the AperFix system provides comparable if not superior results to previously studied constructs.