

In Vivo comparison of isometricity between navigated and conventional technique ACL reconstruction

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Purpose

The aim of study was to evaluate the isometricity between navigational technique and conventional technique during anterior cruciate ligament (ACL) reconstruction before fixation of graft.

Materials and Methods

Fifteen patients with ACL insufficiency were enrolled in this study. After finishing tibial tunnel drilling, femoral site was created using navigation (Orthopilot) and conventional technique. Isometric tests using specially designed device were performed each time with full range of motion of the knee.

Results

The mean isometricity was 3.1 and 4.7 millimeters in navigated and conventional technique. Isometricity of navigated technique was significantly better than that of conventional technique ($p < 0.05$). Navigated isometric point was usually 1 to 4 mm anterior to the point of conventional technique. Only in 3 cases, the isometric point was same in both techniques.

Conclusion

In vivo isometric test proved that the navigation system provides better isometricity in ACL reconstruction compared with conventional technique.