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**MEMORIAL**

# **Comparative Results of Anterior Cruciate Ligament Reconstruction with Full Tibial Tunnel: Quadrupled Semitendinosus Suspensory Femoral and Tibial Fixation versus Quadrupled Semitendinosus and Gracilis Suspensory Femoral and Tibial Screw and Staple Fixation**

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## **Introduction**

This study compared the clinical outcomes of patients treated with described “modified all-inside” anterior cruciate ligament reconstruction (ACLR) technique with those of patients treated with suspensory femoral fixation and a bioabsorbable tibial interference screw with the ACLR technique.

## **Material and Methods**

This study comprised 98 patients who underwent ACLR surgery by two surgeons using one of the two procedures between 2017 and 2019. Patients in Group 1 were treated with the “modified all-inside” ACLR technique. Only the semitendinosus tendon was harvested as a 4 quadrupled graft and fixed to the femur and tibia (larger button) with suspensory buttons in this technique. In Group 2, semitendinosus and gracilis tendons were harvested as two-folded (4 strands) and fixed to the femur using suspensory femoral buttons, and to the tibia with bioabsorbable tibial interference screws and staples.

For Group 1, while the graft preparation method was the same as the “all-inside technique”, tunnel preparation methods were the same as in Group 2.

There were no need for special retro-drilling and gracilis tendon harvesting in Group 1.

Patients’ functional outcomes were evaluated by the Lysholm score, Tegner activity scale, and International Knee Documentation Committee (IKDC) subjective score. Postoperative knee stability of the patients was evaluated using the Lachman test and the pivot shift test.

## Results

The mean ages of the patients were 31.1 (16–55) and 28.7 (18–48) years in Group 1 and 2, respectively. The mean durations of follow-up for both groups were 26 (20-30) and 25.9 (22-30) months. There was no significant difference in age, BMI, and follow-up duration between the two groups ( $p>0.05$ ).

In group 1, preoperative Lysholm's, Tegner's activity, and IKDC subjective scores were 72.9 (54–92), 5.7 (3–10), and 51.1 (32–66), respectively. In group 2, preoperative Lysholm's, Tegner's activity, and IKDC subjective scores were 71.5 (47–84), 5.8 (4–9), and 50.6 (36–67), respectively. There was no significant difference between the preoperative and postoperative Lysholm score, Tegner activity score, and IKDC subjective score of Group 1 and Group 2. There were no major complications or re-ruptures in either group.

(Figure 1-2)

## Results

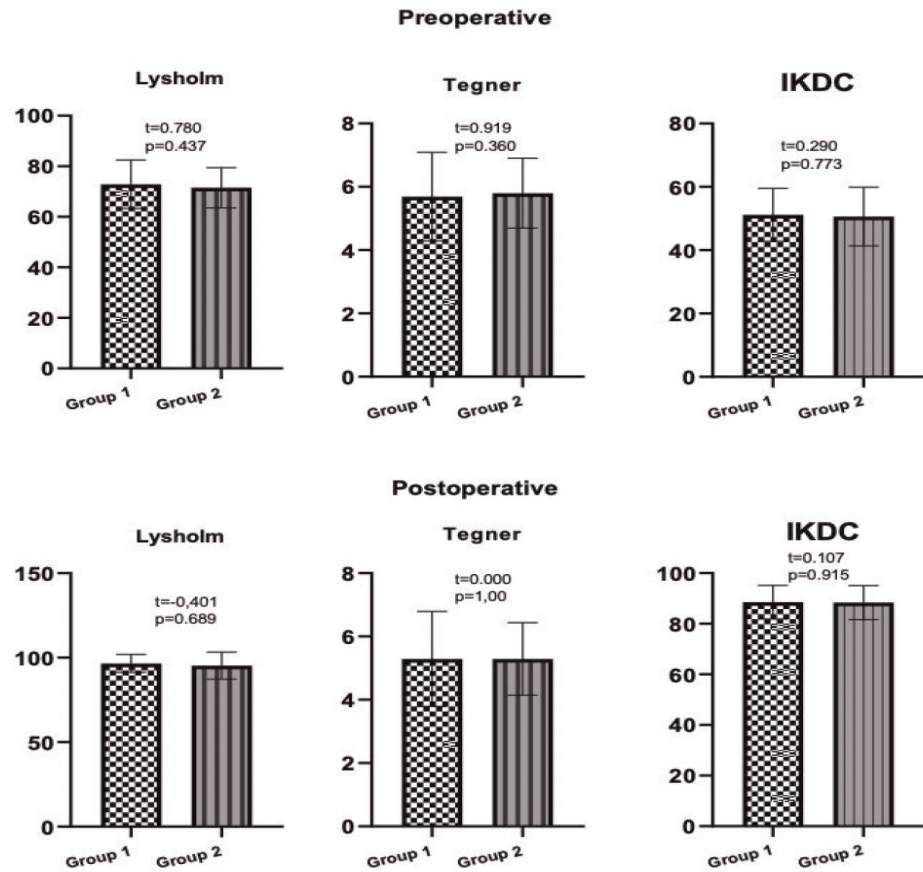


Figure 1. Comparison of groups 1 and 2 patients with preoperative and postoperative Lysholm's, Tegner's activity, and IKDC subjective scores. IKDC, International Knee Documentation Committee.

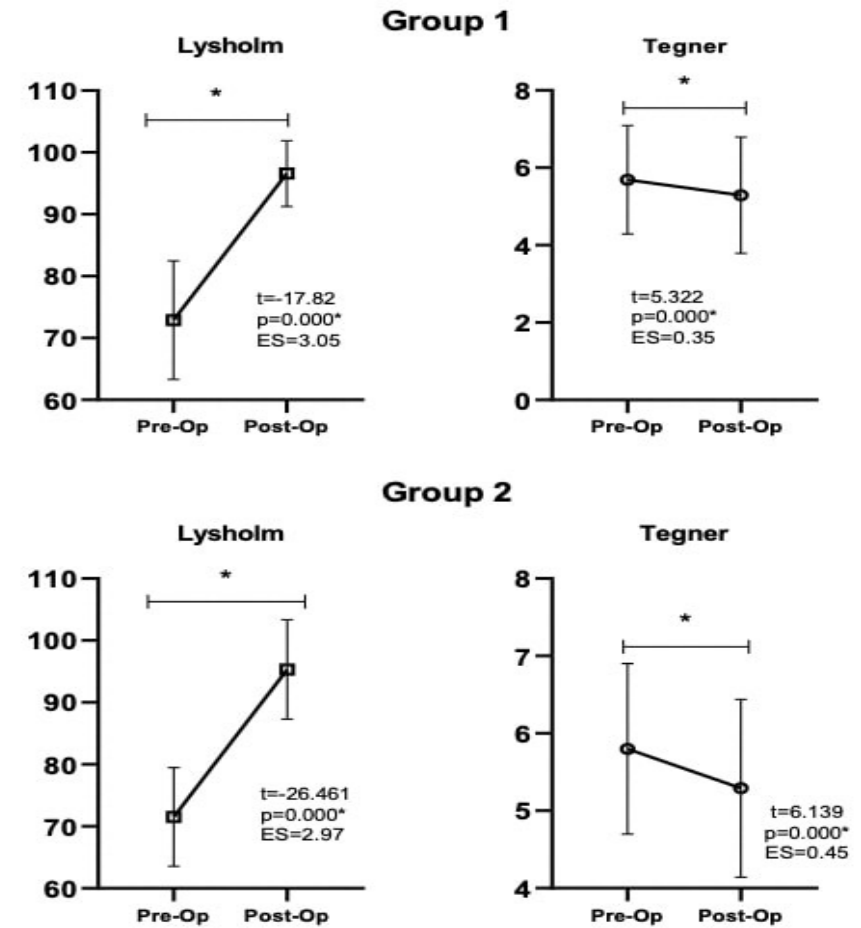


Figure 2. Comparison preoperative and postoperative of the Lysholm's, Tegner's activity, and IKDC subjective scores in groups 1 and 2 patients. \* signifies  $p < 0.01$ . IKDC, International Knee Documentation Committee; Post-op, postoperative; Pre-op, preoperative.

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# Conclusion

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ACLR using the “modified all-inside” ACL reconstruction technique described here produced significant clinical results compared to ACLR using suspensory femoral fixation and a bioabsorbable tibial interference screw.

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