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Medium-Term (Least 5 Years) Comparative Outcomes in Anterior Cruciate Ligament Reconstruction Using 4SHG, Allograft, and LARS Ligament.

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Abstract

OBJECTIVE: To compare the clinical efficacy of anterior cruciate ligament (ACL) reconstruction with 4-strand hamstring tendon autograft (4SHG), allograft and the Ligament Advanced Reinforcement System (LARS) ligament, and to find the causes of cumulative failure or nonreturn to sport.

DESIGN: Retrospective case series.

SETTING: Department of Orthopedic Surgery, the second affiliated hospital of Soochow University, Suzhou, Jiangsu, China.

PATIENTS: Three hundred six patients with isolated ACL deficiency were included. Two hundred twenty-nine patients met the inclusion/exclusion criteria, and finally, 185 of these patients participated in this study.

INTERVENTIONS: Anterior cruciate ligament reconstruction using 4SHG, allograft, and LARS.

MAIN OUTCOME MEASURES: Objective knee function, subjective knee function, and information regarding return to sport, cumulative failure, and complications. Secondary: distribution of tunnel position and tunnel enlargement.

RESULTS: There were no statistically significant differences between the 3 groups regarding all the clinical objective and subjective results, return to sport, complications, or cumulative failures ($P > 0.05$). One hundred twenty-eight patients (69.2%, 128/185) returned to sport. Preoperative (after injury) Tegner scores were inferior to postoperative Tegner scores, and postoperative Tegner scores were inferior to preinjury Tegner scores ($P < 0.01$). The femoral tunnel malposition was significantly associated with cumulative failure ($P < 0.05$).

CONCLUSIONS: There were no statistically significant differences among the 4SHG, allograft, and LARS ligament in terms of the clinical outcomes after ACL reconstruction (ACLR) at 5-years follow-up. Interestingly, ACLR could improve the functional and motorial level of the knee, but patients had great difficulty in regaining the level of preinjury movement. In addition, the malposition of the femoral tunnel was an important cause of cumulative failure. This is an open-