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Anterior Cruciate Ligament Reconstruction with Bone-Patellar Tendon-Bone Autograft Versus Allograft in Young Patients

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Objectives: Traditionally, bone-patella tendon-bone (BTB) autograft has been the gold standard graft choice for younger, athletic patients requiring ACL reconstruction. However, donor site morbidity, post-operative patella fracture, and increased operative time have led many surgeons to choose BTB allograft for their reconstructions. Opponents of allografts feel that slower healing time, higher rate of graft failure, and potential for disease transmission makes them undesirable graft choices in athletic patients. The purpose of this study is to evaluate the clinical outcomes, both subjective and objective, of young patients that who have undergone either BTB autograft or allograft reconstructions with a minimum of 2-year follow-up.

Methods: One hundred and twenty patients (60 autograft, 60 allograft), age 25 and below at time of surgery, were contacted after being retrospectively identified as patients having an ACL reconstruction with either a BTB allograft or autograft by one senior surgeon. Patients were administered the Lysholm Knee Scoring Scale and IKDC Subjective Knee Evaluation questionnaires. Fifty (25 BTB autograft and 25 BTB allograft) of the 120 returned for physical examination as well as completion of a single leg hop test and laxity evaluation using a KT-1000 arthrometer evaluation. Of the 120 patients contacted, there were a total of 7 failures (5.8%) requiring revision, 6 in the allograft group (86%) and 1 in the autograft group (14%).

Results: The average Lysholm scores were 89.0 and 89.56 and the average IKDC scores were 90.8 and 92.1 in the autograft and allograft groups respectively. The differences in the Lysholm scores and the IKDC scores were not significant. The single leg hop and KT-1000 scores were also not significantly different. One autograft patient had a minor motion deficit. Three allograft patients had a grade 1 Lachman and pivot glide. One autograft patient and two allograft patients had mild patellafemoral crepitus. There was no significant difference in anterior knee pain between the two groups

Conclusion: There is no significant difference in patient-rated outcome between ACL reconstructions using BTB autografts versus allografts. However, the overall study group did reveal an increased failure rate requiring revision in the allograft group.

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