THE CHALLENGES OF TREATING FEMALE SOCCER PLAYERS WITH ACL INJURIES: IS THERE A BEST GRAFT CHOICE?

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Introduction: While Anterior Cruciate Ligament (ACL) injuries are common in female soccer players, the optimal graft option is currently unclear.

Purpose: The purpose of this study was to compare outcomes of female soccer players undergoing an ACL reconstruction with either hamstring tendon autograft versus bone-patellar tendon-bone (BTB) autograft.

Methods: A retrospective review of all skeletally mature adolescent female soccer players who underwent a primary ACL reconstruction with either hamstring tendon or BTB autograft between 2013 and 2016 was performed. Patients who had a multi-ligamentous reconstruction, a prior ACL injury, or had follow-up less than 2 years were excluded. Demographic, injury, and surgical variables were documented. Outcome measures included the Lysholm, Single Assessment Numerical Evaluation (SANE), Tegner activity, visual analog pain, and satisfaction scores. Ability to return soccer as well as their pre-injury level of play and any reason that they could not return was documented.

Results: Ninety-three female soccer players met the inclusion criteria of which 76% (41 BTB and 30 hamstring) were available for a minimum 2 year follow-up or had a documented graft failure prior to this time. The mean age of the cohort was 15.4±1.3 years. The BBT group had a Body Mass Index (BMI) that was significantly lower than the hamstring group (23±3 vs 25±4; p=0.02). There were no other differences in demographic, injury, or surgical variables between groups. Patient reported outcomes demonstrated that most patients did well with a mean Lysholm, SANE, Satisfaction, and pain scores of 92, 88, 8.9, and 1.1 respectively with no differences between groups. The BBT autograft group did achieve a significantly higher Tegner score (6.0 vs 4.3; p=0.004). Although not reaching significance, the BBT group had a greater percentage return to pre-injury level of play (44% vs 30%; p=0.31), or return to any level of soccer play (71% vs 53%; p=0.21) and. Of the patients that returned to soccer, 30% sustained another ACL injury (retear or contralateral tear) with no differences identified based on graft selection.
Conclusion: Adolescent female soccer players undergoing an ACL reconstruction have relatively high satisfaction and outcome scores independent of autograft choice. Patients and families, however, need to be counseled that less than half of patients will return to their pre-injury level of sport and if an athlete attempts to return there is a high risk of further ACL injury.