Anterior Cruciate Ligament Reconstruction in 107 Competitive Wrestlers: Outcomes, Reoperations, and Return to Play at 6 years Mean Follow Up

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INTRODUCTION: Wrestling is a physically demanding sport with young athletes prone to anterior cruciate ligament (ACL) injuries. However, there is a paucity of data evaluating the results of ACL reconstruction (ACLR) in this cohort. The purpose of this study was to assess return to play (RTP), patient-reported outcomes, reoperation rates, and graft survival following ACLR in a large cohort of competitive wrestlers at mid-term follow up.

METHODS: All competitive wrestlers (high school, collegiate, or professional) with a history of an ACLR at a single institution between 2000 and 2019 were retrospectively identified. Graft failure was defined as a re-tear determined by clinical or advanced imaging evaluation, and/or revision ACL reconstruction. All patients were contacted for determination of reinjury rates, current sport status, visual analog scale (VAS), International Knee Documentation Committee (IKDC) and Tegner activity scores.

RESULTS: 107 knees in 103 wrestlers were included at a median follow-up time of 5.9 years (IQR: 3.9 – 10.3). The median age was 17 years (15 – 18), with 106 (99%) males, and the distribution of bone-patellar tendon-bone (BTB) and hamstring tendon (HT) autografts were 64 (60%) and 43 (40%), respectively. At final follow-up, 80% of athletes were able to RTP at a median of 280 days (IQR: 212 – 381). Graft failure occurred in 14 (13%) wrestlers at a median time of 1.8 years (IQR: 0.7 – 5.3) after the index ACLR. BTB autograft demonstrated a lower failure rate compared to HT autograft (8% vs. 21%; $P = 0.044$). BTB autograft was associated with better survival than HT autograft up to 15 years after the index ACLR (90.4% vs. 76.3%; $P = 0.030$). When specifically compared by graft diameter, HT autografts ≥ 7.5 mm were not associated with a lower graft failure than BTB constructs of all sizes.

DISCUSSION AND CONCLUSION: Return to competitive wrestling was observed in 80% of athletes after ACLR, with 14% of wrestlers experiencing graft failure. BTB autograft reconstruction may serve as a more durable graft for competitive wrestlers with lower rates of failure when compared to HT autograft even up to 15 years after surgery.