Clinical Outcomes After Proximal Hamstring Repair with Allograft Augmentation or Interposition for Chronic Tears: A Multicenter Propensity-Matched Analysis

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INTRODUCTION:
Chronic hamstring tears can result in muscle atrophy, scar tissue, and significant retraction making it difficult to perform a surgical repair. Allografts may be used to augment the repair; however, there is limited clinical evidence supporting their use. The purpose of this study was to evaluate clinical outcomes of patients who underwent proximal hamstring repair with allograft augmentation or interposition and compare them to matched controls who underwent primary hamstring repair.
METHODS:
A total of 117 patients who underwent proximal hamstring repair were included in this study including 19 allograft augmentations, 20 allograft interpositions, and 78 primary repairs. The allograft augmentation and interposition cohorts were each propensity-matched in a 1:2 ratio based on age, sex, and body mass index (BMI) to those who underwent primary repair. Postoperative outcomes including Lower Extremity Functional Scale (LEFS), Tegner Activity Scale, pain with sitting, pain with activity, presence of muscle spasms, and subsequent reoperations were obtained at final follow-up.
RESULTS:
The average age, BMI, and percentage of females for the augmentation cohort was 53.5 ± 10.2, 27.3 ± 5.6, and 78.9% respectively, while for the interposition cohort it was 47.1 ± 13.2, 29.9 ± 6.4, and 40.0%, respectively. The mean follow-up was 3.7 ± 2.5 years. Forty-two percent of the augmentation cohort underwent prior surgery in comparison to 5.0% of the interposition cohort. The median time from injury to surgery for the augmentation cohort was 6.4 months while for the matched primary repair cohort it was 1.3 months ($p < 0.001$). The median time from injury to surgery for the interposition cohort was 17.8 months while for the matched primary repair group it was 1.0 month ($p < 0.001$). Functional outcomes including Tegner Activity Scale (3.0 vs. 3.8), pain with activity (47.4% vs. 23.7%), and muscle spasms (36.8 vs. 26.3%) were not significantly different between the augmentation and primary repair cohorts at final follow-up. The augmentation cohort had a significantly lower LEFS score (57.7 vs. 71.1, $p = 0.001$), and were more likely to have pain with sitting (52.6% vs. 21.1%, $p = 0.034$) than the primary repair cohort. There was no significant difference in clinical outcomes between the interposition and primary repair cohorts (LEFS: 64.3 vs. 69.0, $p = 0.239$; Tegner Activity Scale: 3.1 vs. 4.5, $p = 0.117$; pain with sitting: 30.0% vs. 27.5%; pain with activity: 46.0% vs. 30.0%; muscle spasms: 30.0% vs. 30.0%). Revision rates were not different between any cohorts ($p \geq 0.255$).
DISCUSSION AND CONCLUSION:
Proximal hamstring repair for chronic tears with allograft augmentation or interposition are reproducible procedures that result in satisfactory clinical outcomes and low reoperation rates and should be considered in patients with chronic tears that are not amendable to primary repair.