AB073. SOH21AS010. Body mass index an unexplored predictor of hamstring tendon autograft length in anterior cruciate ligament reconstruction

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Background: Body mass index (BMI) is an unexplored predictor of hamstring tendon autograft size in anterior cruciate reconstruction. Our results show that BMI is a significant predictor of autograft length in 199 patients. These results provide preliminary evidence for the use of BMI in preoperative planning and prediction of adequately sized quadrupled hamstring tendon autograft.
Methods: A retrospective data analysis of BMI and (ACL Anterior Cruciate) Ligament autograft length and diameter was conducted in 199 patients. Perioperative measurements were ascertained on patients who underwent ACL reconstruction using a quadrupled hamstring tendon graft over a 3-year period at the Galway Clinic Ireland. The data obtained was analysed using correlation coefficients (Pearson r) and stepwise multiple linear regression analysis. Independent sample tests were used to compare the length and diameter of hamstring autografts between genders.
Results: The mean length of quadrupled hamstring autografts was 27.2 mm and the mean diameter was 7.6 mm. In both males and females, positive correlations were found between length and diameter of autografts (r=0.16). Multiple regression analysis found that BMI and diameter of graft were statistically significant predictors of length of graft (R^2=0.04, P<0.001). Linear regression analysis showed that BMI was a statistically significant predictor of length of graft but not diameter (R^2=0.04, P<0.01). BMI of greater than 25 kg/m^2 correlated with longer lengths and larger diameter grafts. However, BMI of less than 18.5 kg/m^2 did not correlate with shorter length and smaller diameter of less than 7 mm. There was no significant difference between men and women's BMI, length and diameter of grafts (P>0.05).
Conclusions: This study demonstrated that BMI is a statistically significant predictor of hamstring autograft length in ACL reconstruction. These results provide preliminary evidence for the use of BMI in preoperative planning and prediction of adequately sized quadrupled hamstring tendon autograft length used in ACL reconstruction.
Keywords: Orthopaedic surgery; anterior cruciate reconstruction; body mass index (BMI); ACL Autograft; perioperative planning

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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