DISCUSSION:
These data suggest that the goat model can be used to determine the effects of initial graft tension on A-P knee laxity. Increases in initial graft tension produced decreases in A-P laxity values. Thus, initial tension conditions can be selected that, over-constrain the joint, reproduce normal knee laxity, and under-constrain the joint. How these initial graft tension and A-P laxity values will change during healing requires a longitudinal study in vivo. There are two potential problems that should be considered when using the goat model. The high variability observed across specimens suggests that the optimal initial tension condition varied across specimens. An intra-operative method that accurately documents A-P laxity will enable the investigator to iteratively select the appropriate initial tension condition. Second, it was not possible to select an initial tension condition that restored normal A-P laxity values at all knee flexion angles. This problem may be due to variations in tunnel placement, differences in graft morphometry, and differences in material properties as compared to the ACL, factors that most likely occur in humans also.

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