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Titel des Beitrags: An Anatomic and Biomechanical Comparison of Bankart Repair Configurations.

Abstract: Suture anchor repair for anterior shoulder instability can be performed using a number of different repair techniques, but none has been proven superior in terms of anatomic and biomechanical properties. Purpose/Hypothesis: The purpose was to compare the anatomic footprint coverage and biomechanical characteristics of 4 different Bankart repair techniques: (1) single row with simple sutures, (2) single row with horizontal mattress sutures, (3) double row with sutures, and (4) double row with labral tape. The hypotheses were as follows: (1) double-row techniques would improve the footprint coverage and biomechanical properties compared with single-row techniques, (2) horizontal mattress sutures would increase the footprint coverage compared with simple sutures, and (3) repair techniques with labral tape and sutures would not show different biomechanical properties. Controlled laboratory study. Twenty-four fresh-frozen cadaveric specimens were dissected. The native labrum was removed and the footprint marked and measured. Repair for each of the 4 groups was performed, and the uncovered footprint was measured using a 3-dimensional digitizer. The strength of the repair sites was assessed using a servohydraulic testing machine and a digital video system to record load to failure, cyclic displacement, and stiffness. The double-row repair techniques with
sutures and labral tape covered 73.4% and 77.0% of the footprint, respectively. These percentages were significantly higher than the footprint coverage achieved by single-row repair techniques using simple sutures (38.1%) and horizontal mattress sutures (32.8%) (P < .001). The footprint coverage of the simple suture and horizontal mattress suture groups was not significantly different (P = .44). There were no significant differences in load to failure, cyclic displacement, or stiffness between the single-row and double-row groups or between the simple suture and horizontal mattress suture techniques. Likewise, there was no difference in the biomechanical properties of the double-row repair techniques with sutures versus labral tape. Double-row repair techniques provided better coverage of the native footprint of the labrum but did not provide superior biomechanical properties compared with single-row repair techniques. There was no difference in footprint coverage or biomechanical strength between the simple suture and horizontal mattress suture repair techniques. Although the double-row repair techniques had no difference in initial strength, they may improve healing in high-risk patients by improving the footprint coverage.

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