Fibrin glue augmentation for flexor tendon repair increases friction compared with epitendinous suture.

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Abstract:

Purpose To compare the gliding resistance, repair gapping, and ultimate strength of a common suture construct with a modified construct with fibrin glue augmentation. Methods Twelve human cadaveric flexor digitorum profundus tendons were transected and repaired with a 4-strand core suture. Specimens were divided into 2 groups and augmented with epitendinous suture (n = 6) or fibrin glue (n = 6). We compared gliding resistance, 2-mm gapping, and ultimate strength of the repaired tendon between groups. Results The linear stiffness, force to produce a 2-mm gap, and ultimate failure were similar in both repair methods. However, the 4-strand suture repair with fibrin glue augmentation displayed significantly higher gliding resistance compared with the 4-strand suture with a running epitendinous suture. Conclusions The significantly increased gliding resistance associated with fibrin glue raises questions regarding the use of this material for flexor tendon repair augmentation. Clinical relevance In a human cadaveric study, fibrin glue augmentation to zone II flexor tendon repairs significantly increased friction in the tendon sheath compared with an epitendinous suture.