Dynamic versus static splinting of simple zone V and zone VI extensor tendon repairs: a prospective, randomized, controlled study.

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Abstract

The authors present the first prospective, randomized, controlled study comparing postoperative dynamic versus static splinting outcomes of patients following extensor tendon repair. Patients who incurred simple and complete lacerations of their extensor tendons in zones V and VI were enrolled into the study and underwent either static splinting (n = 17) or dynamic splinting (n = 17) following primary acute repair of tendons. Total active motion was improved in the dynamic group when compared with the static group in the injured digits at 4 weeks (180.5 +/- 4 degrees versus 131.3 +/- 61 degrees; p = 0.006), at 6 weeks (239 +/- 21.9 degrees versus 205.5 +/- 53.4 degrees; p = 0.048), and at 8 weeks (247 +/- 19.8 degrees versus 216.3 +/- 36 degrees; p = 0.051), but not at 6 months (253.1 +/- 18.8 degrees versus 250.5 +/- 32 degrees; p = 0.562). Similarly, total active motion averaged for all digits (injured and noninjured) of the involved hand was improved in the dynamic group over the static group at 4 weeks (209.8 +/- 31.3 degrees versus 140 +/- 58.2 degrees; p < 0.001) and at 6 weeks (241.5 +/- 17.2 degrees versus 217.1 +/- 42.4 degrees; p = 0.024), but not at 8 weeks (249.6 +/- 16 degrees versus 234.8 +/- 24.5 degrees; p = 0.215) or 6 months (252.3 +/- 14 degrees versus 249.1 +/- 31 degrees; p = 0.450). Grip strength outcomes demonstrated improved grip force for the dynamic group when compared with the static group at 8 weeks (81.3 +/- 18.0 percent versus 59.2 +/- 20.4 percent; p = 0.004) but not at 6 months (89.6 +/- 5.6 percent versus 82.1 +/- 22.0 percent; p = 0.595). Patients demonstrated forceful grip greater than or equal to 80 percent of the noninjured hand in 55 percent of patients in the dynamic group versus 15 percent of patients in the static group at 8 weeks. Patients demonstrated forceful grip greater than or equal to 80 percent of the noninjured hand in 100 percent of patients in the dynamic group versus 73 percent of patients in the static group at 6 months. The authors' findings suggest that dynamic splinting of simple, complete lacerations of the extensor tendons in zones V and VI provides improved functional outcomes at 4, 6, and 8 weeks but not by 6 months when compared with static splinting. Therefore, they recommend dynamic splinting of
simple, complete extensor tendon lacerations in zones V and VI only to select patients who are motivated and desire earlier return to full functional capacity.

PMID: 15692354 [PubMed - indexed for MEDLINE]