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### Early, Continuous, Passive Motion Following Flexor Tendon Repair in Zone-II: Using an Originally Invented Passive Motion Device

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#### Abstract

**Objective:** To evaluate the invented device for early continuous passive motion with the rehabilitation program of fingers following flexor tendon repair in zone-II and to determine whether early motion of the affected finger can occur without increasing the rates of subsequent tendon rupture.

**Material and Method:** A quazi experimental study was done between January 2011 and August 2011 by selecting 5 cases with both, flexor digitorum superficialis (FDS) and flexor digitorum profundus (FDP) injured in zone II of a finger using standard exclusion criteria. The operation was performed by a single surgeon using a standard four-strand repair suture technique and postoperative care consisted of a rehabilitation program with early, continuous, passive motion using and original device. The program was started 1 week post operatively with duration of 4 months. The authors evaluated the total active motion (TAM) by means of the Strickland-Glogovac formula and calculated results by using the Strickland's original classification system. The ratio of efficiency (E1/E2) was analyzed.

**Results:** In evaluation of the TAM, there were 2 cases with excellent results and good results in 3 cases. The range of motion obtained was nearly full motion in all 5 of the cases without subsequent tendon rupture. The ratio of efficiency (E1/E2) was 85/100 (85 of Baktir/100 of the present study) and higher than standard (80/80). As the total number of cases and the selection of cases were different (76 cases of Baktir/5 cases of the present study).

**Conclusion:** Early continuous passive motion using this originally invented device provides excellent long-term outcomes in the management of injured flexor tendon in zone II. Further studies should be done to compare our results with other continuous passive motion protocols with the inclusion of long term follow-up and measurements of grip strength.

**Keywords:** Continuous passive motion (CPM), Early motion, Original device for CPM, Finger motion

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