Prospective Evaluation of Patients Undergoing Carpal Tunnel Release and the Development of Pillar Pain

Ross J. Feller, Kalpit N. Shah, Joseph A. Gil, Heather Gotha, Arnold-Peter C. Weiss, Ed Akelman

Department of Orthopaedic Surgery, Warren Alpert School of Medicine, Brown University, Providence, RI

The authors have no relevant disclosures

Introduction: Pillar pain is a known complication following carpal tunnel release and can be debilitating, causing a decrease in strength and delayed return to work/recreational activities. It is defined as pain and tenderness localized to the prominences of the trapezial ridge, scaphoid tubercle, pisiform or hook of the hamate. Pillar pain has a reported incidence between 6 and 36% and has no known etiology or natural course. It has been noted to last about 4-6 months. The goal of this study was to prospectively observe the rate of development and duration of pillar pain in patients undergoing carpal tunnel release, as well as assess their functional outcomes score using QuickDASH.

Methods: Patients planning to undergo carpal tunnel release were prospectively enrolled by the senior authors (EA, APCW). Patients filled out a QuickDASH and were objectively evaluated for pillar pain at their pre-operative visit and post-operatively at 2 weeks, 1 month, 3 months and 6 months. Because some patients had painful pillars prior to the surgery, we evaluated the average number of painful pillars at the various time points.

Results: We enrolled 34 patients (9 males (26.5%) and 25 females (73.5%)). Average age was 60 yrs and duration of symptoms 31 mo. Pillar pain was present in 14 patients (41%) prior to surgery, 20 patients (59%) at 2 wk, 15 patients (45%) by 1 mo, 10 patients (30%) by 3 mo and 6 patients (32%) by 6 mo post operatively. Average pillar pain, calculated as the sum of the number of pillars with tenderness (0 – 4, 1 point each pillar) was 0.67 pre-operatively, 1.4 at 2 wk post-operatively, 0.9 at 1 mo, 0.4 at 3 mo and 0.58 at 6 mo. (Figure 1) Significantly more painful pillars were observed post-op compared to pre-op (P = 0.01). By the 3 and 6 mo visit, the average number of painful pillars significantly decreased compared 2 wk post op (0.42 vs 1.41, P = 0.002; 0.58 vs 1.41, P = 0.02, respectively). By the 6 mo visit, there was no statistical difference in the number of painful pillars compared to the pre-op visit (P=0.29).

Average QuickDASH scores were statistically significant between the pre-op and 3 and 6 mo visit (31.1 pre-op vs 18.6 at 3 mo; 10.7 at 6 mo; P<0.001).

Discussion: There was an increase in the average number of pillars that are painful after carpal tunnel surgery. By 3 to 6 mo, these averages essentially returned to the preoperative state. Up to 59% had some level of pillar pain by the first post-operative visit, which decreased over the subsequent study period. QuickDASH results demonstrated an improvement in the scores that were significant by the 3 and 6 mo visits.

Significance: This study quantifies the incidence of pillar pain in patients undergoing carpal tunnel surgery and outlines its natural history.