Carpal tunnel syndrome associated with volar locking plate fixation for the distal radius fractures

Takahara M¹, Toyono S¹,², Kondo M¹, Satake H², Takagi M²
1; Center for Hand, Elbow and Sports Medicine, Izumi Orthopaedic Hospital
2; Department of Orthopaedic Surgery, Yamagata University Faculty of Medicine

Aim: Carpal tunnel syndrome (CTS) is a common complication following distal radius fracture (DRF). To investigate CTS onset and course following DRF.

Materials and Methods: 101 cases (above 18 years old, preoperative distal latency (DL) of the median nerve, volar locking plate (VLP)) were selected among 130 surgical cases who underwent volar locking plate fixation. The mean follow up period was 6.7 months.

Results: Preoperative diagnosis for CTS, concomitant ECTR, delayed ECTR, outcome
P) Past CTS: numbness before fracture, 2 cases → concomitant ECTR → releaf
A) Acute CTS: numbness after fracture, 15 cases
   6 cases → concomitant ECTR → releaf
   9 cases → no ECTR → 8 cases → releaf
   → 1 cases → severe numbness
   (Figure) → ECTR

S) Subclinical CTS: no numbness, with delayed DL (> 4.0 msec)
   17 cases
   1 cases → concomitant ECTR → releaf
   16 cases → no ECTR → no numbness

N) No CTS: no numbness or delayed DL, 65 cases
   63 cases → no ECTR → no numbness
   2 cases → delayed CTS → ECTR

Discussion: We found the following three onsets of symptomatic CTS following volar locking plate fixation for DRF: past (2%), acute (15%), and delayed (2%). Our indications for concomitant ECTR was 1) past CTS, 2) acute CTS with DL of 4.0 msec and more, and 3) subclinical CTS with DL of 6.0 msec and more. After these treatments, three (3%) patients needed delayed ECTR. The fact that the incidence of delayed ECTR after volar locking plate fixation was only 3% suggested that preoperative diagnosis for CTS was helpful.