

## **First Dorsal Compartment Release during Distal Radius Open Reduction Internal Fixation for Antecedent Radial-Sided Wrist Pain**

Michael Polmear, James Jordan, Fernando Herrera<sup>1</sup>, Gil Gontre<sup>2</sup>

<sup>1</sup>MUSC, <sup>2</sup>Ortho Dept

### **INTRODUCTION:**

The incidence of De Quervain's disease after operative management of distal radius fractures is up to 2%. Purpose was to determine whether releasing the first dorsal compartment (FDC) during an extended flexor carpi radialis (eFCR) approach in patients with radial-sided wrist symptomatology without surgical intervention prior to distal radius fracture (DRF) would have decreased incidence of postoperative De Quervain's disease.

### **METHODS:**

A prospective, randomized cohort study was performed from January 1, 2017 to December 31, 2019 where patients with DRF and persistent FDC symptomatology within the last 12 months underwent open reduction and internal fixation (ORIF) with volar locked plating. Surgery was performed by a single hand surgeon at a Level I trauma center. Patients were randomized to FDC release or no additional release beyond standard approach, in accordance with a power analysis with 23 patients per group. Patients were evaluated at 3-weeks, 3-months, 6-months, 9-months, and 12-months postoperatively for lateral pinch strength, sensitivity to Finkelstein's maneuver, and response of persistent FDC symptomatology to occupational therapy, corticosteroid injection, and FDC release as a revision surgery.

### **RESULTS:**

A total of 211 patients underwent distal radius ORIF during the study period. Forty-seven (22.3%) patients were included in the study, and 24 underwent FDC release (release group) and 23 underwent no additional release (control group) beyond standard approach followed by volar locked plating. There were 26 males and 21 females with mean age 58.4 years (SD 7.8, range 38-71 years). Lateral pinch strength at 3-months and 6-months were significantly greater in the release group, and there was no difference at 12-months. Similarly, history and sensitivity to Finkelstein's maneuver were significantly asymptomatic at 3-months and 6-months in the release group, and there was no difference at 12-months after interval interventions. Two patients in the control group who had suboptimal relief with occupational therapy and corticosteroid injection underwent a second surgery to release the FDC and had relief of symptoms.

**DISCUSSION AND CONCLUSION:** Release of FDC alongside eFCR approach for ORIF of DRF in patients with recent radial wrist symptomatology was associated with earlier radial wrist symptom relief and increased lateral pinch strength. This approach merits consideration for patients with FDC symptomatology preceding DRF.