

## **Risk Factors and Complications Associated with Prolonged Opioid Use Following Surgical Management of Thumb Carpometacarpal Arthritis**

Avi D. Goodman, MD<sup>1</sup>; Neill Y. Li, MD<sup>1</sup>; Greg F. Elia, MD<sup>1</sup>; Kalpit N. Shah MD<sup>1</sup>; Edward Akelman, MD<sup>1</sup>; Alan H. Daniels, MD<sup>1</sup>

<sup>1</sup>Department of Orthopaedics, Alpert Medical School of Brown University / Rhode Island Hospital, Providence RI

### **Abstract**

**Purpose:** Opioid use and abuse are growing problems in the post-operative surgery period. The risk factors for prolonged use following surgery for thumb carpometacarpal (CMC) arthritis, or any associated complications, have not previously been investigated in detail.

**Methods:** A national, de-identified large insurance database was queried for patients undergoing surgical management of CMC arthritis and separated into four cohorts based on the treatment received: LRTI (Ligamentous Reconstruction Tendon Interposition), trapeziectomy, CMC fusion, and CMC prosthesis. Preoperative and postoperative narcotic prescriptions were queried for each cohort. In addition, demographics, comorbidities, and social characteristics were analyzed for risk of prolonged narcotic use (ongoing use at 3 months post-operatively). Narcotic use was further analyzed for risk of postoperative complications including infection, revision procedures, and CRPS.

**Results:** The incidence of prolonged opioid use was similar between trapeziectomy (18.2%), LRTI (16.8%), and CMC prosthesis (16.6%), but increased in the CMC fusion cohort (25.9%). For all procedure types, preoperative narcotic use was associated with a 7.4- to 8.3-fold increased risk of prolonged postoperative narcotic use. Other comorbidities, such as depression and back pain/lumbago, were significantly associated with prolonged opioid use. Prolonged opioid use was also associated with an increased incidence of infection requiring revision surgery and chronic regional pain syndrome.

**Conclusion:** Prolonged opioid use is common after CMC surgery (highest after CMC fusion procedures), and plateaus by three months post-operatively. Patients and surgeons may benefit from modifying pertinent risk factors, especially preoperative opioid use and education, before choosing to proceed with surgery and may use this information to improve patient counseling prior to surgery.

**Level of Evidence: Therapeutic Level III**