

### **Risk Factors of MCP/PIP Arthroplasty on Postoperative Outcomes: An ACS-NSQIP Analysis**

**Introduction:** The purpose of this study is to evaluate the rate and potential risk factors for 30-day post-operative outcomes in patients undergoing metacarpophalangeal joint (MCP) or proximal interphalangeal joint (PIP) arthroplasty which has not been well researched. **Methods:** The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database was retrospectively analyzed between 2008 and 2016. Patients undergoing a single MCP or PIP arthroplasty were isolated. Patients were stratified according to BMI, age ( $<50$  or  $>50$ ), smoking status, rheumatoid arthritis, and osteoarthritis. Patient demographics, operation details, and post-operative outcomes were assessed. **Results:** 1232 MCP/PIP arthroplasty patients were identified. Chi-squared analyses showed patients with bleeding disorders had a significantly higher rate of adverse events ( $p=0.014$ ). Presence of an open wound/infection and history of COPD had significantly higher rates of adverse events (all,  $p<0.05$ ). Independent samples t-tests showed that steroid use for chronic condition and open wound/infection had higher mean length of stay (all,  $p<0.05$ ) and that steroid use for chronic condition, anemia, osteoarthritis, and rheumatoid arthritis had significantly longer mean operation times (all,  $p<0.05$ ). Binary logistic regression analysis resulted in open wound/infection having a significantly higher risk of adverse events (OR 6.3 [1.6 - 25.3],  $p=0.010$ ). Bleeding disorders trended towards having significantly higher risk (OR 3.5 [0.8-14.8],  $p=0.088$ ). All other comorbidities in these statistical models had no significant effect on adverse events, mean length of hospital stay and mean operation time (all,  $p>0.05$ ). **Discussion and Conclusion:** The rate of any adverse events was relatively low overall at 2.6%. Bleeding disorders and open wound/infections were the comorbidity variables that were most significant for higher rates of adverse outcomes for MCP/PIP arthroplasty patients.