

The Use of Tourniquet Does Not Negatively Influence Outcomes in Total Knee Arthroplasty: A Randomized Controlled Trial

Jorge Padilla, MD, Jonathan Gabor, BS, Alex Tang, BS, Erik A. Schnaser, MD, Morteza Meftah, MD, **Ran Schwarzkopf, MD**

Introduction: Intraoperative tourniquet use in total knee arthroplasty (TKA) is a common practice which may improve visualization of the surgical field and reduce blood loss. However, the safety and efficacy associated with tourniquet use continues to be the subject of debate among orthopaedic surgeons. The primary purpose of this study is to evaluate the effects of tourniquet use on pain, opioid consumption and patient-reported outcomes (PROs) following TKA.

Methods: This is a multicenter randomized controlled trial among patients undergoing TKA. Patients were randomized preoperatively to undergo TKA with or without the use of an intraoperative tourniquet. Frequency distributions, means, and standard deviations were used to describe baseline patient demographics (age, gender, race, BMI, ASA score, smoking status), length of stay (LOS), surgical factors, 90-day readmissions, visual analogue scale (VAS) pain scores, PROs (VR-12 MCS and PCS, KOOS, JR.), physical therapy score (Boston University AM-PAC Basic Mobility Inpatient Short Form), and opioid consumption in morphine milligram equivalents (MME). T-tests were used to test for significant differences between continuous variables and χ^2 for categorical variables. A p-value threshold of <0.05 was considered statistically significant.

Results: In total, 70 patients were included in this study, with 37 patients undergoing TKA without tourniquet and 33 patients with tourniquet. No statistically significant differences were found in surgical time (124.3 vs. 121.5 minutes; p=0.80), LOS (2.4 vs. 2.4 days; p=0.98), pain scores (2.0 vs. 2.2; p=0.76), inpatient opioid consumption (32.2 vs. 36.6 MMEs; p=0.65), outpatient opioid consumption (28.1 vs. 25.4 MMEs; p=0.81), KOOS, JR. scores (63.5 vs. 53.9; p=0.17), AM-PAC (21.1 vs. 21.1; p=0.97), VR-12 PCS scores (38.5 vs. 44.0; p=0.39), and VR-12 MCS (52.3 vs. 47.6; p=0.55) scores between the tourniquet-less and tourniquet cohorts, respectively. There were no readmissions in either cohort during the 90-day episode of care.

Conclusions: Utilization of a tourniquet during TKA does not negatively impact postoperative pain scores or opioid consumption. Furthermore, use of a tourniquet does not appear to affect patient satisfaction or outcomes.