No Increased Risk of Deep Vein Thrombosis and Pulmonary Embolism for Total Knee and Hip Arthroplasty Patients with a History of Breast or Prostate Cancer

Sagar Sham Telang, Alexandra Lynne Hohmann[1], Ryan Christopher Palmer[2], Yale Fillingham, Jay R Lieberman[3], Nathanael D Heckmann

[1]Rothman Orthopaedic Institute, [2]Department of Orthopaedic Surgery, [3]Keck School of Medicine of USC

INTRODUCTION: Patients with active breast or prostate cancer are known to be pro-coagulopathic. However, whether this heightened risk persists after disease treatment and remission remains unclear. This study aimed to determine if patients with a history of breast or prostate cancer have an increased risk of postoperative thromboembolic complications following elective total joint arthroplasty (TJA).

METHODS: The Premier Healthcare Database (PHD) was used to identify all patients who underwent primary total knee or hip arthroplasty between 2016-2021. Patients with a history of breast or prostate cancer were matched in a 1:6 ratio by age and sex to patients with no history of cancer. Differences in patient demographics, comorbidities, postoperative chemoprophylactic agents, and cancer hormone therapy at time of surgery were compared between cohorts. Multivariable analyses assessed 90-day complications including deep vein thrombosis (DVT) and pulmonary embolism (PE).

RESULTS: In total, 46,681 TJA patients with a history of breast cancer were matched to 280,086 TJA patients without a history of cancer and 30,424 patients with a history of prostate cancer were matched to 182,544 patients with no history of cancer. Multivariable analyses showed that patients with a history of breast cancer had no increased risk of DVT (adjusted odds ratio [aOR] 1.04, 95%-confidence interval [CI] 0.93-1.17, p=0.500), PE (aOR 1.11, 95%-CI: 0.96-1.28, p=0.155) or aggregate thromboembolic complications (aOR 1.04, 95%-CI: 0.94-1.14, p=0.441) relative to controls. Similarly, patients with a history of prostate cancer had no increased risk of DVT (aOR 1.08, 95%-CI: 0.96-1.22, p=0.209), PE (aOR 1.09, 95%-CI: 0.92-1.29, p=0.308), or aggregate thromboembolic complications (aOR 1.05, 95%-CI: 0.95-1.18, p=0.338).

DISCUSSION AND CONCLUSION: Patients with a history of breast and prostate cancer have similar thromboembolic risk compared to patients with no history of cancer. Arthroplasty surgeons may consider standard postoperative thromboprophylaxis among these patient populations.