Prior Non-arthroplasty Surgery Increases Risk of Complication in Primary Total Knee Arthroplasty

Background: Certain surgical procedures prior to total knee arthroplasty (TKA) increase the risk for post-operative complications. It remains unclear if the extent of surgery affects those risks disparately. The purpose of this study is to evaluate prior ipsilateral non-arthroplasty knee surgery as a potential risk factor for complications following TKA and to determine if the invasiveness of the procedure (bony (BP) vs. soft tissue only (STP) procedure) affects those risks discordantly.

Methods: Primary TKA patients with prior ipsilateral knee surgery were identified using a national Medicare database. Control groups of patients who did not undergo prior knee surgery were matched 5:1. Rates of postoperative medical and surgical complications were calculated in addition to hospital-associated charges and reimbursements. Study patients were compared to controls using a logistic regression analysis to control for confounding factors.

Results: 835 BP patients were compared to 4,175 controls and had increased risk of readmission (58.6% vs 45.3%, OR 1.72, 95% CI 1.59-1.85, $p<0.001$) and ER (emergency room) visits (14.5% vs 10.4%, OR 1.44, 95% CI 1.29-1.61, $p=0.001$). 6,766 STP patients were compared to 33,830 controls and had increased risk of readmission (58.1% vs 45.2%, OR 1.69, 95% CI 1.64-1.73, $p<0.001$), ER visits (12.6% vs 0.7%, OR 1.33, 1.28-1.39, $p<0.001$), revision (1.8% vs 1.4%, OR 1.33, 95% CI 1.21-1.47, $p=0.006$), CVA (cerebrovascular accident) (2.3% vs 1.7%, OR 1.33, 95% CI 1.22-1.46, $p=0.002$) and VTE (venothromboembolism) (3.8% vs 3.2%, OR 1.21, 95% CI 1.13-1.29, $p=0.009$). Patients who had undergone prior ipsilateral knee surgery were also found to have significantly increased hospital-associated charges.

Conclusion: Prior ipsilateral knee surgery is associated with significantly increased risks of postoperative complications following primary TKA. Interestingly, previous STP but not BP increased the risk of short-term revision and VTE.