Paper #4

Is Conversion TKA a Primary or a Revision? Complication Risks Approximate Revision TKA

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Introduction: Conversion total knee arthroplasty (convTKA) is associated with increased resource utilization and costs compared to primary TKA. The purpose of this study is to compare 1) surgical time, 2) complications, 3) hospitalization length (LOS), 4) surgical site infection, and 5) readmissions/reoperations in patients undergoing convTKA to both primary TKA and revision TKA patients.

Methods: The American College of Surgeons National Surgical Quality Improvement Project (ACS-NSQIP) database was queried from 2008-2018. Patients undergoing convTKA (n=1,666, 0.5%) were defined by selecting those with CPT codes 27447 (TKA) and 20680 (removal of deep implant). Patients were excluded if they carried the diagnosis codes for fracture, tumor, or non-elective surgery. We compared the outcomes of interest to patients undergoing primary TKA (CPT 27447) (n=348,624) and to patients undergoing aseptic revision TKA (CPT 27487, excluding infection and fracture) (n=8,213). Univariate and multivariate logistic regression was performed to identify the relative risk of postoperative complications among these 3 patient groups.

Results: Compared to patients undergoing primary TKA, convTKA patients were younger ($p<0.001$), had lower BMI ($p<0.001$), and were less likely to be ASA class III/IV ($p<0.001$). Notwithstanding, these patients had significantly longer operative times (122.6 vs. 90.3 min, $p<0.001$), increased LOS ($p<0.001$), increased risks for any complication (OR 1.94), surgical site infection (OR 1.84), reoperation (OR 2.18) and readmissions (OR 1.60) after controlling for confounders. Compared to aseptic revision TKA patients, operative times were shorter (122.6 vs. 148.2 min, $p< 0.001$), but LOS (2.91 vs. 2.95 days, $p=0.698$) was similar. Furthermore, adjusted relative risk for any complication ($p=0.350$), surgical site infection ($p=0.964$), reoperation ($p=0.296$), and readmissions ($p=0.844$) did not significantly differ.

Conclusions: Conversion TKA procedures share more similarities with revision TKA rather than primary TKA procedures. Without a distinct procedural code and DRG, there are financial disincentives to care for these complex patients.

Notes