Not so Fast! Feasibility and Safety of Ambulatory Revision Total Knee Arthroplasty

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INTRODUCTION:
As total knee arthroplasty (TKA) transitions to the ambulatory setting, its revision procedures are expected to follow. However, the greater complexity and patient stress imposed by revisions necessitate further investigation into the necessity for postoperative inpatient monitoring. This study aims to evaluate: (1) the number of patients meeting discharge criteria within 24 hours following revision total knee arthroplasty (rTKA); (2) the proportion of patients meeting these criteria after isolated polyethylene exchange compared to any component revision; and (3) the factors contributing to successful discharge within 24 hours post-revision knee arthroplasty.
METHODS:
3150 rTKA surgeries between 2017-2023 were reviewed, of which 1185 (37.6%) were included in the final analysis. 357 (30.1%) polyethylene exchanges +/- patella resurfacing and 828 (69.9%) any or full component revisions. Septic revisions and patients who stayed in the hospital > 72 hours were excluded. The mean age was (66.1 +/- 8.9), BMI (30.8 +/- 5.7) and there were 563 (47.5%) men and 622 (52.5%) women. Patients were split into two cohorts: (1) those discharged within 24 hours and (2) those who stayed in the hospital between 24 to 72 hours. Factors including age, sex, comorbidities, procedure type, surgical time, time to achieving PT milestones and estimated blood loss were compared between those successfully discharged within 24 hours compared to those who required inpatient stay in the hospital for more than 24 hours but less than 72. Descriptive statistics were performed to determine incidence rates. T-tests and chi-squared test was used to evaluate the differences between groups. A chi-squared test was used to examine the association between component type and same day discharge. Significant associations were assessed in a multivariable logistic regression.
RESULTS:
242/1185 (20.4%) patients were discharged within 24 hours following rTKA. 136/357 (38.1%) patients were discharged within 24 hours following polyethylene exchange vs. 106/828 (12.8%) following any component revision, [OR=3.9; 95% CI (2.9-5.2); p<0.0001]. After adjusting for all variables, regression analysis confirmed that if the rTKA procedure was polyethylene exchange only, there was increased odds of same day discharge [OR=1.8; 95% CI 91.06-3.071); p=0.029]. Medical complications that required intervention occurred in 107 (30%) patients undergoing poly exchange compared to 404 (48.8%) patients undergoing any component revision [OR=0.513; 95% CI (0.31-0.848); p<0.0001]. There were no significant differences in patient comorbidities between cohorts, but patients undergoing any component revision were had greater estimated blood loss, more complications, and a longer time to PT clearance, 25.9 hours in the polyethylene exchange cohort compared to 36.6 hours in the any component revision cohort [OR=0.73; 95% CI (0.69-0.78); p<0.0001].
DISCUSSION AND CONCLUSION:
Despite modern enhanced recovery protocols, discharge within 24 hours following aseptic rTKA remains uncommon. Medical complications requiring active management occurred in nearly 50% of patients. Even patients undergoing polyethylene exchange with or without patellar resurfacing experienced medical complications and required more than one PT session prior to meeting discharge criteria. The strongest predictors of same day discharge were having a polyethylene exchange alone, shorter time to achieving PT milestones, and the absence of perioperative complications.