

Does Patellar Resurfacing Increase the Risk of Extensor Mechanism Injury after Primary Total Knee Arthroplasty?

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INTRODUCTION:

Extensor mechanism injury (EMI) following total knee arthroplasty (TKA) is a catastrophic complication and may lead to significant morbidity or need for revision arthroplasty with additional reconstructive procedures, such as implantation of extensor mechanism allograft or polypropylene mesh. Patella resurfacing (PR), while commonly performed during TKA, reduces overall patella bone stock and may increase the risk of EMI after TKA. The purpose of this study was to assess if PR in elderly patients raises the risk for subsequent EMI.

METHODS:

The American Joint Replacement Registry (AJRR) was queried to identify patients [≥]65 years old undergoing TKA for osteoarthritis between January 2012 and March 2020. Patient age, sex, and Charlson Comorbidity Index (CCI) were collected. Records were merged with CMS claims records and evaluated for the occurrence of patella fracture, quadriceps tendon rupture, or patellar tendon rupture based on ICD-9/10 diagnosis codes within 2 years of TKA. Patients were stratified based on whether PR occurred or not (NR). Logistic regression was used to determine association between PR and EMI.

RESULTS:

A total of 453,828 TKA were eligible for inclusion and 428,644 (94.45%) underwent PR. Patients undergoing PR were more often female (60.9% vs. 58.5%; $p < 0.001$), had a lower mean CCI (3.09 vs. 3.16; $p < 0.001$), and PR decreased between 2012 (96.06%) and 2022 (92.35%) ($p < 0.001$). Odds for EMI did not differ based on whether PR was performed (OR=0.85; $p = 0.2246$) (Table 1). Increasing age (OR=1.057, $p < 0.0001$) and CCI (OR=1.063, $p = 0.001$) were associated with EMI. The proportion of NR patients increased from 3.9% in 2012 to 7.7% in 2020 ($p < 0.001$).

DISCUSSION AND CONCLUSION:

PR is commonly performed during TKA in the United States and was not found to increase odds for EMI within 2 years of TKA in patients [≥]65 years old. Increased age and medical comorbidity were associated with higher odds for subsequent EMI. The incidence of patella NR nearly doubled from 2012-2020.