

## **The Hidden Burden of Referred Revision Total Knee Arthroplasty at an Academic Institution**

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**INTRODUCTION:** Referrals for failed total knee arthroplasty (TKA) is part of the revision burden at academic institutions. While revision TKA procedures may appear similar from a billing standpoint, we hypothesized that referred revision cases carry a higher risk of complications, failures and cost due to underlying surgical and patient complexity. This study's purpose was to compare revision TKA outcomes at an academic center between referred patients and the institution's own patients.

**METHODS:** This was a retrospective cohort study of patients undergoing aseptic revision TKA at one academic center from 2015-2019 with minimum two-year follow-up. Patients with prior revisions were excluded. Revisions of TKAs originally performed at an outside center (OC) were compared to revisions of TKAs performed at our same center (SC). Failures requiring re-revision, non-revision reoperations, length-of-stay, 90-day medical readmissions and inpatient-costs were compared.

### **RESULTS:**

71 SC and 138 OC patients with mean age ( $67.2 \pm 8.6$  years), sex (36.2% female) and body-mass-index ( $31.4 \pm 6.7$  kg/m<sup>2</sup>) were included. There were no differences in patient characteristics. Rates of full femoral/tibial component revisions (FCR) were similar (SC 42.2% vs. OC 57.9%,  $p=0.111$ ). Outside center revisions had a significantly higher rate of re-revision, (SC 2.8% vs. OC 10.9%,  $p=0.044$ ). There were no differences in non-revision reoperations (SC 14.1% vs. OC 15.2%,  $p=0.827$ ), 90-day medical readmissions (SC 4.2% vs. OC 7.2%,  $p=0.392$ ), or length-of-stay (SC  $2.5 \pm 1.3$  vs. OC  $3.0 \pm 2.6$ ,  $p=0.117$ ). OC FCR had 15% greater total inpatient costs compared to SC FCR ( $P=0.018$ ). There were no cost differences for liner exchanges ( $p=0.778$ ).

**DISCUSSION AND CONCLUSION:** Patients referred to an academic center for aseptic revision TKA have higher rates of re-revision relative to non-referred revisions and referred all-component revisions also have greater costs. These findings may speak to the hidden complexity of these cases and further studies are needed to better understand this potential burden to academic centers.