

Paper #16

Predictors of Outcomes Following Revision Surgery for Flexion Instability in Total Knee Arthroplasty

Payton K. Arnold, MS, Joseph A. Madden, BS, Mary Ziemba-Davis, BA, R. Michael Meneghini, MD

Introduction: Flexion instability remains a poorly understood cause of total knee arthroplasty (TKA) failure, sometimes referred to as a “wastebasket” diagnosis for unexplained pain. It remains a challenging diagnosis, with less predictable outcomes following revision surgery. This study identified predictors of successful outcomes following revision for flexion instability.

Methods: 115 consecutive TKAs revised for flexion instability at a single center were retrospectively reviewed. Diagnosis and treatment were according to established clinical criteria and surgical principles. Activity level, walking and stair pain, whether the knee feels normal, and knee satisfaction were prospectively obtained preoperatively and at minimum one-year follow-up. Multiple potential predictors of outcomes were collected including presenting symptoms, patient demographics, and medical comorbidities. Multivariate analyses were utilized with $p < 0.05$ significant.

Results: The sample was 63% female with mean age of 65 ± 10 and BMI of 33 ± 6 kg/m². Moderate to large knee effusions increased preoperative pain while walking on a level surface ($p = 0.007$). Revision of a CR implant was associated with increased walking pain postoperatively ($p = 0.026$). For males, increasing age was associated with a reduction in preoperative pain while climbing stairs ($p < 0.001$). Postoperatively, patients who felt their knee was unstable preoperatively were 5.7 times less likely to report that their knee always feels normal ($p = 0.028$) and 2.9 times less likely to be satisfied or very satisfied with revision surgery ($p = 0.040$).

Conclusions: Instability is one of the most common reasons for TKA failure leading to revision surgery. To our knowledge, this is the largest flexion instability cohort analyzed to date and reveals certain patient demographic variables are predictive of outcomes. These findings suggest that many factors related to outcomes may be beyond the control of the arthroplasty surgeon.

Notes
