

Unicompartmental knee arthroplasty patients had lower joint awareness and higher function at 5 years compared total knee replacements: A matched comparison

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Introduction: Patients are being offered a total knee arthroplasty (TKA) or a unicompartmental knee arthroplasty (UKA) as surgical options for medial compartment osteoarthritis (OA). The purpose of this study is to evaluate postoperative outcomes at minimum 5 year follow up in patients following UKA compared to a matched cohort of TKA patients.

Methods: We retrospectively identified 286 patients (300 surgeries) with primarily medial compartment OA on radiographs meeting criteria for a medial UKA who underwent a TKA (150) or medial UKA (150) between 2014 and 2015 at our institution. Patients were matched one-to-one based on age (± 5 years), exact sex, and BMI (± 3 kg/m²). Patients underwent unilateral TKA or UKA per their surgeon's standard surgical procedure. Forgotten Joint Score (FJS, range [1,100]), Knee Society Score (KSS, range [1,100]), Numerical Pain Rating Score (NPRS, range [0,10]), and patient satisfaction (range [0,40]) were assessed by serial questionnaires via phone.

Results: At a minimum 5 year follow up, 127 UKA patients and 118 TKA patients were available. Mean (\pm standard deviation) age was 69 ± 10 years and 71 ± 9 years in the UKA and TKA groups respectively ($p=0.09$). At five years postoperatively, patients who underwent UKA had significantly higher mean (\pm SD) FJS scores (86 ± 20 vs. 59 ± 34 , $p<0.001$); higher KSS (88 ± 14 vs. 75 ± 21 , $p<0.001$); lower NPRS scores (0.8 ± 1.5 vs. 1.9 ± 2.2 , $p<0.001$); and higher satisfaction (37 ± 6 vs. 33 ± 10 , $p<0.001$). Survivorship free from revision was 97% (95% CI=95-100%) and 98% (95% CI=96-100%) at 5 years for TKA and UKA, respectively ($p=0.6$). There were two both component revisions in the TKA group and no revisions in the UKA group.

Conclusions: Patients with primarily medial compartment OA who underwent UKA had significantly lower joint awareness, higher function, decreased pain, and higher satisfaction compared to a matched group who underwent TKA at a minimum of 5 year follow up. Excellent survivorship of 97% in the TKA group and 98% in the UKA group was demonstrated with no difference in revision rates between the two groups at 5 years. Unicompartmental knee arthroplasty should continue to be considered in patients with isolated medial compartment osteoarthritis.

Keywords: unicompartmental arthroplasty; total knee arthroplasty; mid-term follow up postoperative outcomes; Forgotten Joint Score

Level of Evidence: III