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Abstract Title: A Comparison Between Unilateral Unicompartmental Knee Arthroplasty (UKA) and Total Knee Arthroplasty (TKA) Patient and Clinical Reported Outcomes

Background
Previous research commonly encourages the use of unicompartmental knee arthroplasty (UKA) over total knee arthroplasty (TKA), as it is a less invasive technique leading to a faster recovery. However, patient reported outcomes and functional recovery have rarely been evaluated within the first post-operative year. Therefore, the purpose of this study was to compare functional recovery within one year and improvement in patient reported outcomes at three months and one year between unilateral UKA and TKA patients.

Methods
This prospective review included 167 patients that have undergone unilateral UKA (N=71) or TKA (N=96). Knee Society Knee (KSK) and Function (KSF) were collected prior to and at one year post-arthroplasty and patient reported outcomes (KOOS JR) were collected prior to and at three months and at one year post-arthroplasty. Parametric statistical tests were performed to evaluate differences between UKA and TKA patient demographics and outcomes. One year post-operative outcomes were compared with a pre-operative controlled univariate analysis, while a repeated measures analysis evaluated changes in KOOS Jr outcomes over time.

Results
Patient demographics were not significantly different aside from UKA patients being more frequently male (UKA=53.5%; TKA=38.5%; p=0.039). Pre-operatively, KOOS Jr scores were significantly higher in UKA patients (53.8±10.4) compared to TKA (48.7±12.6; p=0.006), with no differences in KSK (p=0.414) or KSF (p=0.351). Post-operatively, three month KOOS Jr score was significantly higher in UKA patients (72.0±11.6) compared to TKA (66.1±12.2; p=0.002) but was not significantly different at one year (p=0.442). One year post-operatively, KSF was significantly higher in UKA patients (76.6±17.9) compared to TKA (70.8±17.4; p=0.038), with no significant difference in KSK (p=0.854). Over time, KOOS JR significantly increased for both UKA and TKA patients ($p<0.001$) but there was no interaction for procedure (p=0.252). While the improvement in KSK was similar between UKA and TKA patients from pre- to one year post-operation, UKA patients had significantly greater improvement in KSF (19.6±20.6) compared to TKA (10.8±22.3; p=0.001).

Conclusion
While no difference was found in the recovery of KSK between UKA and TKA patients, KSF had a greater improvement in UKA patients. These improvements, however, were not translated into improvements in patient reported outcomes, as the increase in KOOS JR was similar between UKA and TKA groups and could indicate a difference in patient expectations following surgery.

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