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Abstract Title: The Influence of Patellar Erosion on Knee Range of Motion Following Unicompartmental Knee Arthroplasty

Abstract

Background

The presence of significant patellofemoral (PF) arthritis remains controversial regarding indications for unicompartmental knee arthroplasty (UKA), as this has previously been shown to negatively influence post-operative knee range of motion (ROM) and function. Therefore, the purpose of this study was to determine if the extent of PF arthritis impacted post-UKA knee range of motion.

Methods

This retrospective review evaluated 323 unilateral and bilateral UKA patients (418 knees) from 2015 to 2019, with a minimum of 6-month follow-up required. Patients were grouped by PF arthritis, including mild PF arthritis (Group 1), extensive PF arthritis (Group 2) and PF arthritis with lateral compartment bone on bone contact (Group 3). Group differences were evaluated with Kruskal-Wallis or Chi-Square tests for continuous and categorical variables, respectively. Univariate logistic regressions were performed to determine influential variables for post-operative knee flexion $\leq 120^\circ$, with significant variables further evaluated in a multivariate logistic regression and presented as odds ratios (OR) and 95% confidence intervals (CI).

Results

Group totals were: 266 knees in Group 1, 101 knees in Group 2 and 51 knees in Group 3. Pre-operative flexion was significantly lower in Group 3 ($p=0.010$), with 17.6% of patients having flexion $\leq 120^\circ$. Post-operatively, flexion was significantly lower in Group 3 ($119.1^\circ \pm 8.4^\circ$, $p=0.003$), with 19.6% patients having flexion $\leq 120^\circ$ compared to 9.8% and 8.9% in Groups 1 and 2, respectively. Post-operative Knee Society Function score was not significantly different between the groups ($p=0.223$). Group was not a significant contributor to post-operative flexion, however, age (OR:1.089, CI:1.036-1.144; $p=0.001$), body mass index (OR:1.082, CI:1.006-1.163; $p=0.034$) and pre-operative flexion (OR:0.949, CI:0.921-0.978; $p=0.001$) were significant.

Conclusions

As PF arthritis did not appear to directly contribute to post-operative knee flexion or function, UKA may be considered with patients presenting with significant PF arthritis.