Comparison of Aseptic Partial and Full Component Revision Total Knee Arthroplasty

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INTRODUCTION:

Revision total knee arthroplasty (rTKA) can be performed with isolated tibial, isolated femoral, and combined tibial and femoral component exchange for different indications. Replacement of only one fixed component in rTKA leads to shorter operative times and decreased complexity. We sought to compare functional outcomes and rates of re-revision in patients undergoing partial and full rTKA.

METHODS:

This retrospective study examined all aseptic rTKA patients with a minimum follow-up of two years at a single orthopedic specialty hospital between 2013-2019. Patients were divided into two groups: full rTKA (F-rTKA) if the both components (femoral and tibial) were revised, and partial rTKA (P-rTKA) if only one component was revised. Subgroup analysis was performed for the two most common indications: aseptic loosening and instability.

RESULTS:

A total of 293 patients (P-rTKA=76, F-rTKA=217) were included. P-rTKA patients had a lower 90-day readmission rate (1.3% vs. 12.4%, p=0.005). At a mean follow-up of 4.18±1.96 years, re-revision rates did not significantly differ between groups (11.8% vs. 16.1%, p=0.358). Improvements in functional outcomes were similar as well. Freedom from re-revision was similar at two years (94.7% vs. 90.3%, p=0.244). For patients undergoing rTKA due to aseptic loosening, freedom from re-revision due to aseptic loosening was similar between groups (100.0% vs. 97.8%, p=0.321). For patients undergoing rTKA due to instability, freedom from re-revision due to instability did not significantly differ as well (100.0% vs. 98.1%, p=0.683). In the P-rTKA cohort, freedom from all-cause and aseptic revision of preserved components was 96.1% and 98.7% at 2-year follow-up**.**

DISCUSSION AND CONCLUSION:

Compared to full revision of fixated components in rTKA, partial revision yielded similar functional outcomes and implant survivorship albeit with shorter surgical time. Surgeons can expect good outcomes when performing partial rTKA, when indications and component compatibility allow for such a procedure.