## The Fate of the Patella in Two-Stage Exchange Arthroplasty for Knee PJI: 20-Year Experience

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INTRODUCTION: The optimal treatment of the patella at the time of reimplantation during a two-stage exchange arthroplasty for periprosthetic joint infection (PJI) of knee is not well defined. The purpose of this study was to review the implant survivorship, radiographic results, and clinical outcomes of un-resurfaced and resurfaced patellae at the time of reimplantation of a total knee arthroplasty (TKA).

METHODS: We identified 992 patients between 2000 and 2020 who underwent a two-stage exchange arthroplasty for PJI of the knee. 50% were left un-resurfaced, 44% were resurfaced, and the remaining 6% had an extensor mechanism reconstruction (2.6%), patellectomy (1.7%), or patellar bone grafting (1.8%). Outcomes included survivorship free of patella-related revisions, reoperations and complications, radiographic patellar thickness, and clinical outcomes via Knee Society scores (KSS). Mean age was 66 years, 46% were female, and the mean BMI was 34 kg/m<sup>2</sup>. Mean follow up was 6 years.

RESULTS: The 10-year cumulative incidence of any revision was 33% and 24% for the un-resurfaced and resurfaced groups, respectively. The 10-year cumulative incidence of revision for a patella related complication was 2% for both groups. There was no significant difference in patella-related reoperations (p=0.43) or complications (p=0.07) between the two groups. The mean pre-reimplantation patellar thickness was 12 mm in the resurfaced group vs 9 mm in the un-resurfaced group. There was no significant difference in patellar-related complications in the radiographically thin (<10mm) vs standard (>10mm) patellae regardless of treatment method (p=0.72) There was a significant and similar improvement in KSSs between groups.

DISCUSSION AND CONCLUSION: Patients selected for either patellar resurfacing or non-resurfacing at the time of reimplantation during a two-stage exchange arthroplasty for PJI demonstrated similar overall and patella-specific rates of revision and reoperation. Baseline differences in the two treatment groups leading to each treatment are acknowledged and should be recognized.