

Outcomes of Distal Femur Replacement With or Without Patellar Resurfacing After Resection of The Distal Femur

Background: The necessity for patellar resurfacing after arthroplasty remains controversial. To date, few studies have specifically examined the effect of patellar resurfacing on outcomes after resection and megaprosthesis reconstruction of the distal femoral tumor resection.

Objectives: Compare the outcomes of megaprosthesis reconstructions of the distal femur with or without patellar resurfacing after resection of femoral tumors.

Methods: An IRB approved retrospective review of the tumor registry and orthopedic oncology database was performed. The clinical records of patients who underwent distal femur resection and endoprosthetic reconstruction for femoral tumors between 1993 and 2013 at our institution were identified. We excluded patients who had extra-articular knee resection, patellectomy, revisions, expandable prostheses, and proximal tibia replacement associated with the distal femur replacement. We compared demographic characteristics; surgical variables, including the use or not of patellar resurfacing, type of implant, amount of femur resected, surgical approach; and functional outcomes, including anterior knee pain (AKP), range of motion (ROM), extension lag (EXL), feeling of instability, patellar subluxation/dislocation, Insall-Salvati ratio, Insall-Salvati patellar tendon insertion ratio, impingement, patellar degenerative disease, additional patellar procedures, prosthesis complications and ISOLS/MSTS score.

Results: One hundred eight patients were included in the study, 60 without patellar resurfacing and 48 with patellar resurfacing. Mean age was 33.9 years (range, 12 to 75 yrs), 54 men and 54 women, with a mean follow-up of 4.5 years (range, 0.7 to 20 yrs). There was no significant difference in incidence of AKP between groups ($p=0.51$). AKP did not significantly affect ROM,

EXL, or complication rates. Patellar degenerative disease occurred in 48% of the non-resurfacing group but was not associated with pain ($p=0.35$). Complication rates were similar in both groups, although patellar calcification was significantly more common in the resurfacing group (19% vs. 2%; $p=0.005$). Six additional patellar procedures were done in non-resurfacing group and three in resurfacing group ($p=0.72$), including three patellar resurfacing in non-resurfacing group. No patient from resurfacing group underwent patellar component revision. ISOLS/MSTS score from 62 patients were 81% in non-resurfacing and 71% in resurfacing ($p=0.34$).

Conclusions: We observed no statistical difference in AKP, ROM, EXL or ISOLS/MSTS score between patients undergoing distal femur replacement with or without patellar resurfacing. There were no incidences of patella loosening or revision. Thus we feel that in light of the similar outcomes in both groups the decision to resurface should be left up to the individual surgeon, taking into account status of the patella at time of resection.