A New High-Flexion Design Total Knee Prosthesis: A Nine to Eleven-Year Follow-Up Study.

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INTRODUCTION:

The purpose of this study was to investigate the long term follow-up outcomes and survivorship of total knee arthroplasty (TKA) performed using a new high-flexion design prosthesis, the LOSPA knee system.

METHODS: From September 2011 to March 2013, 504 TKAs (369 patients) with a follow-up period of 9-11 years were analyzed. For radiographic analysis, positions of femoral and tibial implants as α , β , γ , and δ angles, hip knee ankle (HKA) angle, and radiolucent lines were used. The patients were assessed clinically using range of motion (ROM) of the knee, the Knee Society scoring system (KSS) and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). The endpoint of survival was revision of implant.

RESULTS: The mean ROM was $116.7^{\circ}\pm 14.5^{\circ}$ preoperatively and $128.1^{\circ}\pm 7.6^{\circ}$ at the last follow-up (p<0.001). Both the mean KSS and WOMAC scores showed significant improvement after surgery compared to preoperatively (all p<0.001). A non-progressive radiolucent line less than 2 mm was observed in 23 cases (4.7%). A total of 9 patients underwent revision surgery on the knee during the follow-up period. Of these, 4 patients underwent surgery for deep infection and 5 patients for aseptic loosening. In addition, 2 patients had deep infection, but their symptoms improved after synovectomy and polyethylene change. Two patients underwent surgery for a periprosthetic fracture of the femur and patella. The survival rate of at least 9 years was 99.0% for aseptic causes and 98.2% for any reasons.

DISCUSSION AND CONCLUSION:

A new high-flexion design total knee prosthesis, the LOSPA knee system, showed excellent long-term survivorship and improvements in clinical outcomes at 9- to 11-year follow-up.