

COMPARISON OF ARTICULATING VERSUS STATIC ANTIBIOTIC LADEN CEMENT SPACERS IN TWO-STAGED KNEE REVISION ARTHROPLASTY FOR SEPSIS

Jagiello, J. M.; Sheshappanavar, G.; Davis, W.; Pollock, R.; Carrington, R.; Skinner, J.; Cannon, S.; Briggs, T.

Introduction: Infection following primary total knee replacement surgery is a devastating complication and remains an important cause of prosthesis failure. For the staged management of infected total knee arthroplasty (TKA), antibiotic laden polymethylmethacrylate (PMMA) spacers have been recommended. We report a series of 60 knees with infected total knee replacements managed by the use of articulating and static antibiotic laden cement spacers and short term antibiotic therapy in the post operative period. Proposed advantages of articulating devices include improvement of soft tissue healing, prevention of soft tissue contractures, facilitation of definitive re-implant surgery, and improvement of patient range of movement. In this study, we compare the results of three different techniques. The first is a static block spacer made from cement intra-operatively. The second is the Spacer K, an articulating spacer sold by Ortho Dynamics in the United Kingdom. Lastly, we have also looked at the results of massive be-spoke spacer endoprosthesis (Stanmore Implants).

Patient and Methods: This was a retrospective study over a 5-year period, of 59 consecutive patients (60 knees) (27 females and 32males) who had undergone revision of an infected TKA with a two- stage component exchange procedure. Analysis included the use of case notes, hospital databases, microbiological and clinical reviews, combined with contemporary functional outcome assessments using the Oxford Knee Score (OKS).

Results: The mean age at the time of the operation was 63.2 years (range 19 to 81). Mean Follow up was 33.2 months (7-65 months) and mean time to revision surgery was 46.2 months (3.9yr). The average duration of antibiotics post 1st stage was 8.5wks (2-26). Infection was successfully eradicated in 54 of the 60 cases (90%). 6 patients (10%) had persistent growth at or after the 2nd stage. The infection rate in the articulating spacer K group was 1/30 (3.3%). The infection rate in the static cement spacer group was 4/20 (20%) and in the bespoke endoprosthetic group was 1/10 (10%). Results showed that the patients with articulating spacers had a significantly improved range of movement when comparing pre-operative measurements with those at follow-up (74.5°pre operative flexion-92.7° post operative flexion; p value=0.0003) to those who had a static spacer (76.2°- 83.3°). Comparison of functional outcomes measured using the OKS demonstrated no statistical difference between the groups.

Conclusions We conclude that articulating spacers seem to facilitate two-stage re-implantation surgery

following infected total knee arthroplasty with reduced risk of persistent infection. Articulating spacers offered a functional advantage in terms of range of movement achieved at follow up over static spacers in this study group.

