

10727- The use of modular Megasystem C LINK implant in massive bone loss after periprosthetic infection

Authors: D. Donati, M.DePaolis, M. Romantini, C.Romagnoli, F.Mariotti, T.Frisoni.

Istitution: Istituto Ortopedico Rizzoli, III Clinica a prevalente indirizzo oncologico, Bologna, Italy

Introduction:

Secondary bone loss due to periprosthetic joint infection (PJI) can be a devastating problem in conventional arthroplasty and even more in megaprosthesis due to bone tumor treatment. PJI incidence around the knee is reported between 1 and 4% in conventional joint replacement while between 3 and 29% in primary oncologic implants, reaching 43% in oncologic implants revision surgery. In literature, two-stage revision is considered the gold standard procedure for treatment of chronic megaprosthesis infection, with a success rate of 72-76%. Amputation rate was reported between 14% and 21%. Revision surgery need a prosthetic system able to face every type of bone and joint replacement. On the other hand in cases with multiple previous surgeries the system need to protect the patients from a possible new infection.

Purpose:

The aim of this study is to report our experience about the use of LINK MEGASYSTEM-C[®] implants showing its wide range of versatility and new silver coating process that seems to be able to reduce infection risk.

Methods:

From January 2009, 19 patients with chronic PJI underwent two-stage revision surgery performed with LINK MEGASYSTEM-C[®] in all cases. In 17 cases the final device was a silver coated prosthesis. Population included 4 males and 15 females with mean age of 53 yrs (range 22 - 85). Primary implant included 12 oncological cases and 7 TKA performed 3 in the proximal femur and the other around the knee. The time elapsed from the original implant to the first revision surgery was a mean of 86 months (range 2 - 274). Average number of spacer implanted was 1,7 (from 1 to 5), while the average bone gap at the reimplantation was 18,8 cm (from 8 to 40cm). In 2 patients bone loss interested the entire femur. Functional evaluation was performed with MSTS score.

Results:

A mobile prosthesis was implanted in 13 patients, while the other 6, due to the magnification of bone loss, were treated with arthrodesis. Reimplantation, was performed at a mean time of 12 months from the explant (range 2 -65 months). Major complications requiring surgical treatment were 4 reinfection and 1 patellar dislocation. All infections occurred within 2 months after the reimplantation with sign of wound related problems. Two patients were treated with immediate debridement and wound management, while 2 refused further surgery. One patient healed, while the other 3 developed a chronic infection (high RCP) without sinus. In our series, two-stage revision successfully eradicated the infection in 84% (16/19). At a mean follow up of 11 months (8-56) no amputation were performed. No local argyria were observed in all 17 patients with silver coated implant. Mean MSTS score was 22 (15-29).

Conclusion:

Two-stage revision with LINK[®] MEGASYSTEM-C[®] is a viable option for treating PJI in massive bone loss due to repeated surgeries in conventional arthroplasty as well as in tumour cases. In this series this system has been demonstrated as a reliable way to face every type of reconstruction saving the limb in extreme cases. The use of silver coated implants seems to provide a better control on the contamination of the implanted device, reducing also the amputation rate.