

## **OUTCOMES OF A CUSTOM MADE ARTICULATING SPACER (CUMARS) IN THE MANAGEMENT OF PERIPROSTHETIC JOINT INFECTION: COMBINING ONE AND TWO STAGE INFECTION ERADICATION STRATEGIES**

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**Introduction:** The aim of this study was to report our outcome using a CUstom Made ARticulating Spacer (CUMARS) as the first of two-stage treatment of PJI. This technique uses standard cemented hip replacement components (all-polyethylene acetabular components and the polished tapered stem), implanted using targeted antibiotic loaded acrylic bone cement.

**Methodology:** This was a consecutive case series of patients treated between 2010 and 2019 with the CUMARS technique at the first stage for periprosthetic infection of a primary THA. Success of treatment was assessed as infection eradication at a minimum of one year post-operatively and the number of patients requiring second stage surgery was also assessed.

**Discussion:** Revision for infection using a CUMARS prosthetic was performed in 86 patients with an infected primary THA in situ. The mean age was 73.6 years (47-92). Infection eradication at a minimum of one year was 95.3%. Eleven (12.8%) patients had a planned second stage reimplantation. Over the time of the cohort study, the incidence of patients undergoing second stage procedure has reduced as increasing number of patients (87.2%) retain their CUMARS prosthesis as a well functioning implant that does not require further second stage revision surgery. Dislocation was the most common complication following first stage CUMARS (4.7%).

**Conclusion:** The CUMARS technique is an excellent alternative to conventional spacers and has an excellent infection eradication rate. Targeted antibiotics can be added to the cement to allow optimal infection eradication and the use of routine cemented hip components mean that the technique is relatively inexpensive. It allows immediate full weight bearing and mobility with good patient reported outcomes. The low numbers progressing to second stage surgery demonstrate that a CUMARS can also be successfully used as a single stage option for infected THAs where needed or can allow a strategy of delayed two stage surgery to be pursued.