

Long-Term Follow Up of the Cup-Cage Reconstruction for Pelvic Discontinuity

Anser Daud¹, Faran Chaudhry, Oleg Safir², Allan E Gross³, Paul Robert Kuzyk³

¹Department of Orthopaedic Surgery, Mount Sinai Hospital, ²Mount Sinai Hospital-Orthopaedic Dept, ³Mount Sinai Hospital

INTRODUCTION:

Pelvic discontinuity is a separation through the acetabulum with the ilium displacing superiorly and the ischium/pubis displacing inferiorly. This is a biomechanically challenging environment with a high rate of failure for standard acetabular components. The cup-cage reconstruction involves the use of a highly porous metal cup to achieve biological bone ingrowth on both sides of the pelvic discontinuity and an ilioischial cage to provide secure fixation across the discontinuity and bring the articulating hip center to the correct level. The purpose of this study was to report long-term follow up of the use of the cup-cage to treat pelvic discontinuity.

METHODS:

All hip revision procedures between January 2003 and January 2022 where a cup-cage was used for a hip with a pelvic discontinuity were included in this retrospective review. All patients received a Trabecular Metal Revision Shell with one of two types of cages from a single manufacturer. Pelvic discontinuity was diagnosed on preoperative radiographs and/or intraoperatively. Kaplan-Meier survival analysis was performed with failure defined as revision of the cup-cage reconstruction.

RESULTS:

Fifty-seven cup-cages in 56 patients were included with an average follow up of 6.25 years (0.10 to 19.98 years). The average age of patients was 72.09 years (43 to 92 years) and 70.2% of patients were female. The five-year Kaplan-Meier survival was 92.0% (95% CI 84.55 to 99.45) and the ten-year survival was 80.5% (95% CI 58.35 to 102.65). There were 5 major complications that required revision of the cup-cage reconstruction (3 infections and 2 mechanical failures). There were 9 complications that required reoperation without revision of the cup-cage reconstruction (5 dislocations, 3 washouts for infection, and one femoral revision for aseptic loosening).

DISCUSSION AND CONCLUSION:

This long-term follow-up study demonstrates that the cup-cage reconstruction in revision total hip arthroplasty is a reliable tool to address pelvic discontinuity with an acceptable complication rate.