

Comparable revision rates between custom-made acetabular cup-cage implants and traditional reconstruction methods. A study from the Swedish Arthroplasty Register.

Jörg Schilcher, Gunnar Flivik, Harald Brismar¹, Johan Kärrholm

¹ Karolinska Universitetssjukhuset

Background

We studied the risk of revision after use of custom-made cup-cage implants compared with standard cups and augments/reinforcements rings using data from the Swedish Arthroplasty Register (SAR).

Methods

We identified patients operated with custom-made acetabular cup-cages between 2012 (first reported implantation) and 2023 in the SAR. A control group, comprising uncemented standard design cups inserted with augments and/or reinforcement rings, was defined for the years 2017–2023. Differences in the cumulative revision rate between the groups was calculated using the Log Rank test.

Results

Between 2012 and 2023, 150 custom-made acetabular cup-cages (all manufactured by Materialize, Leuven, Belgium) were reported to the SAR (2017–2023: n=101). The corresponding number between 2017–2023 in the control group was 331. In the control group, 275 had an augment, 46 had a reinforcement ring, 9 had been operated on with 2 augments and 1 hip with 2 augments and a reinforcement ring. In the study group there were 17 revisions, 16 due to infection or dislocation, 1 because of fracture and none due to loosening. In the control group, 25 out of 34 cases were revised due to infection or dislocation. Aseptic loosening was the main cause in 5 cases. The cumulative risk of revision did not differ between the groups (Log Rank test, all observations: p=0.98; observations from 2017 onwards: p=0.57).

Discussion

We found a similar risk of revision in the 2 groups. Further studies including radiographic analyses of preoperative defects are warranted to discriminate indications for the 2 surgical methods.