

Amstutz HC, Antoniadou JT, Le Duff MJ. Results of metal-on-metal hybrid hip resurfacing for Crowe type-I and II developmental dysplasia. J Bone Joint Surg AM. 2007 Feb; 89(2):339-46.

BACKGROUND: Modern hip resurfacing implants may increase stability and preserve more bone than conventional total hip arthroplasty. The purpose of this retrospective study was to analyze the mid-term results in a consecutive series of middle-aged patients with developmental dysplasia of the hip treated with hybrid resurfacing joint arthroplasty.

METHODS: Metal-on-metal hip resurfacing was performed in fifty-one patients (**fifty-nine hips**), forty-two of whom were female and nine of whom were male. The average age at the time of surgery was 43.7 years. Radiographic and clinical data were collected at six weeks, at three months, and at yearly follow-up visits. Seven hips had Crowe type-II developmental dysplasia of the hip and fifty-two had type-I.

RESULTS: The **follow-up** period ranged from 4.2 to 9.5 years (**average, 6.0 years**). **Initial stability was achieved in all but three hips**. The clinical outcomes, as rated with the University of California at Los Angeles (UCLA) hip score, improved significantly compared with the preoperative ratings. On the average, the pain rating improved from 3.2 to 9.3 points; the score for walking, from 6.0 to 9.7 points; the score for function, from 5.7 to 9.6 points; and the score for activity, from 4.6 to 7.3 points (all $p = 0.0001$). The mean Short Form-12 (SF-12) mental score increased from 46.6 to 53.5 points, and the mean SF-12 physical score increased from 31.7 to 51.4 points (both $p < 0.0001$). The mean postoperative Harris hip score was 92.5 points. On the average, the range of flexion improved from 106 degrees to 129.6 degrees ; the abduction-adduction arc, from 41.9 degrees to 76.9 degrees ; and the rotation arc in extension, from 32.1 degrees to 84.8 degrees (all $p = 0.0001$). Four patients delivered a total of six healthy babies since the time of implantation of the prosthesis. Radiographic analysis showed a decrease in the mean body weight lever arm from 118.5 mm preoperatively to 103.9 mm postoperatively ($p = 0.007$). There were five femoral failures requiring conversion to a total hip arthroplasty. One hip showed a radiolucency around the metaphyseal femoral stem. There were no complete acetabular radiolucencies, and all sockets remained well fixed.

CONCLUSIONS: **The mid-term results of metal-on-metal resurfacing in patients with Crowe type-I or II developmental dysplasia of the hip were disappointing with respect to the durability of the femoral component.** However, the fixation of the porous-coated acetabular components without adjuvant fixation was excellent despite incomplete lateral acetabular coverage of the socket. More rigorous patient selection and especially meticulous bone preparation are essential to minimize femoral neck fractures and loosening after this procedure.