A Single Surgeon Case Series of Ninety Nine Hybrid Metal-on-Metal Hips – Birmingham resurfacing cup and Birmingham modular head
Ikram Nizam1, Lawrence Kohan2, Dennis Kerr2

1Surgical and Orthopaedic Research Laboratories, University of New South Wales, Prince of Wales Hospital, Sydney, NSW, Australia; 2Department of Orthopaedics, St. Luke’s Hospital, Sydney, NSW, Australia

Introduction: Total hip arthroplasty has been an indication for severe/end-stage osteoarthritis of the hip. Selection of implants is paramount in such cases which can be patient dependent or surgeon dependent or a combination of both.

Birmingham Hip resurfacings have been a popular mode of treatment for younger and more active patients with arthritis of the hip. However the use of hybrid hip arthroplasty system with a Birmingham hip resurfacing cup and Birmingham modular head with a variety of cemented or uncemented stems is less well described in the literature. These are patients how are physically active but fall short of the criteria for a hip resurfacing.

Materials and Methods: We analysed consecutive hybrid hip arthroplasties (cementless BHR cup and a variety of cemented or uncemented stems) with modular heads performed by a single surgeon between 2000 and 2007 with an average of 2.5 yrs (range from .5 to 6.4 years) Follow-up.

All patients who received a Modular head with Birmingham hip resurfacing cups were included in this study.

Patients were standardized for age, sex and demography. All surgery was done through a standard posterior approach and mobilized between 4 and 12 hours from surgery and planned to be discharged the following day unless delayed by social or pre-existing medical circumstances.

We evaluated radiographic changes and clinical outcomes in all patients at the most recent follow-up. A modified DeLee and Charnley method was used to identify lucent areas around the acetabular component. The acetabulum was divided into 3 zones, Zones 1, 2 and 3.

The femoral stems were assessed radiographically using a modified Gruen technique. Clinical assessment was undertaken to determine hip pain and hip function.

Results: A total number of 99 hybrid hips were included in the study in 93 patients.

There were 52 females and 41 males with an average age of 69.9, age ranging from 47 to 88 (standard deviation of ± 7.9). The average BMI was 28.8 (range from 18.7 to 140.9 SD ± 12.9).

There were 57 right and 42 left surgically treated hip arthroplasties of which 6 patients had bilateral consecutive hybrid hip arthroplasties.

5 hips were revised to hybrids after # NOF of Birmingham hip resurfacings. One other hip was revised with Birmingham hip resurfacing cup and centrepulse revision stem and cables. 3 patients had dysplasia cups of which one was for revision of the total hip replacement (mentioned above) the other two were for asymmetric acetabulum and lack of roof cover respectively. In the latter patient acetabular reamings as bone graft was used to fill the roof defect. In all 3 patients, the dysplasia cup was secured well to the ilium with 2 screws.

Of the 99 hips, 93 were primary hybrid hip arthroplasties, reasons for surgery included 89 for osteoarthritis, 4 for rheumatoid arthritis, 5 patients for revision BHR with #NOF and 1 revision for failed THR.

Medical co-morbidities included 4 patients with non-insulin dependant diabetes, 2 with mild renal failure, 8 with stable cardiac problems and one patient morbidly obese.

None of the patients in the case series developed infection, deep venous thrombosis or pulmonary embolism.

None of the patients had dislocations until the most recent follow up.

No resurfacing cups or prosthesis (stems) were revised for loosening and no loosening of components were identified at the most recent follow-up and all patients were mobilising well.

Discussion: Hip Resurfacing procedures are gaining popularity in the younger individuals with arthrosis of the hip. Some patients who are fairly independent and active fall short of satisfying the criteria for a hip resurfacing and one of our authors (LK) preferred the option of the BHR cup with modular head and a compliment of cemented or uncemented stems. This metal on metal option with large heads would ideally increase stability and reduce wear patterns with the prospect of increasing longevity of total hip arthroplasties.

In those patients who have an active and independent lifestyle where a hip resurfacing may be contraindicated, a hybrid hip arthropathy with a modular head would be a reasonable option.

