



## ■ ANNOTATION

# Metal-on-metal hip resurfacing

A CONSENSUS FROM THE ADVANCED HIP RESURFACING COURSE, GHENT, JUNE 2009

K. De Smet,  
P. A. Campbell,  
H. S. Gill

From ANCA Medical  
Center,  
(AMC-Ghent),  
Ghent, Belgium

**We report the consensus of surgical opinions of an international faculty of expert metal-on-metal hip resurfacing surgeons, with a combined experience of over 18 000 cases, covering required experience, indications, surgical technique, rehabilitation and the management of problematic cases.**

The last decade has seen an increased use of metal-on-metal hip resurfacing arthroplasty as an alternative to contemporary total hip replacement (THR), especially for patients who wish to participate in high-demand activities. Metal-on-metal bearings are also being used more often for THR. In June 2009, the third Advanced Resurfacing Course was held in Ghent, with a faculty that included 21 orthopaedic surgeons whose combined experience included over 18 000 metal-on-metal hip resurfacing arthroplasties. As the meeting served to bring together surgeons, highly experienced in hip resurfacing, from Australia, Europe and the Americas, the opportunity was taken to establish consensus views on issues of required experience, indications, surgical technique and rehabilitation. The aim of this annotation is to disseminate these consensus findings in order to help surgeons who are considering metal-on-metal bearings for both resurfacing and conventional THR. The findings are presented as a majority opinion, with the percentage of the faculty in agreement given in parentheses.

### Required experience

The use of metal-on-metal bearings for THR and resurfacing presents a greater technical challenge than that of conventional metal-on-polyethylene bearings. The consensus (81%) was that an orthopaedic surgeon should have a minimum experience of 200 conventional THRs before starting to use a metal-on-metal hip resurfacing arthroplasty. Opinion varied on the number of these operations needed to overcome the learning curve, and ranged from 20 (36%), to 50 (28%) and more than 50 (30%).

### Indications

The overall view (100%) was that the ideal candidate for an metal-on-metal hip resurfacing arthroplasty is a relatively young man with normal anatomy and primary osteoarthritis. Being female was not, by itself, a contra-indication (89%), but use of a small femoral head (< 46 mm) was contra-indicated (70%). Being female and wanting to have children was a contra-indication (66%), as was being female and having a metal allergy (70%). Grossly abnormal anatomy, regardless of gender, was also agreed to be a contra-indication (83%). There was considerable debate about bone quality, the general view being that 'good' femoral bone is a prerequisite, but no agreement was reached on a working definition of acceptable quality.

### Surgical technique

The majority opinion (56%) was that the best type of femoral placement guide is that which encircles the femoral neck. There was general agreement (63%) that the current acetabular placement jigs are inadequate. The overall preference (78%) was for cementing the femoral component with a thin cement mantle with fixation holes drilled in the femoral bone, use of pulsed lavage, and reduction of the hip in less than eight minutes from the start of mixing the cement.

### Rehabilitation

Full weight-bearing can be allowed on the first post-operative day (73%) and patients should use crutches for as long as needed (57%). Six weeks is the optimal time to return to normal non-sporting daily activities (44%), and six months for returning to impact sports such as running or tennis (61%).

■ K. De Smet, MD, Orthopaedic Surgeon  
ANCA Medical Center (AMC-Ghent), Krijgslaan 181, 9000 Ghent, Belgium.

■ P. A. Campbell, PhD, Associate Professor  
UCLA/Orthopaedic Hospital, 2400 South Flower Street, Los Angeles, California 90007, USA.

■ H. S. Gill, DPhil, University Lecturer in Orthopaedic Mechanics  
Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences  
University of Oxford, Botnar Research Centre, Nuffield Orthopaedic Centre, Oxford OX3 7LD, UK.

Correspondence should be sent to Dr H. S. Gill; e-mail: richie.gill@ndorms.ox.ac.uk

©2010 British Editorial Society of Bone and Joint Surgery  
doi:10.1302/0301-620X.92B3.23946 \$2.00

*J Bone Joint Surg [Br]*  
2010;92-B:335-6.

**Managing problematic cases**

It was difficult to achieve a consensus on this topic, and only the broad recommendations of the discussion are reported. It was generally agreed that these patients need to be followed up and those with symptoms investigated. There was no agreement on the diagnostic value of measurements of metal ions, but it was felt that 'high' concen-

trations of systematic metal ions indicated a problem with the articulation. Cross-sectional imaging and plain radiographs are required for the investigation of a symptomatic metal-on-metal bearing.

It is hoped that these consensus opinions will prove useful to orthopaedic surgeons and will lead to improved outcomes after surgery for hip replacement.