3.3 28mm Head in Ceramic/Ceramic Total Hip Replacement

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Introduction

Total Hip Replacement is a successful procedure with relative low complications.

With improvements in fixation, implant design and the introduction of minimally invasive techniques, the goal in THR today is to minimize wear and osteolysis avoiding loosening of the components.

Alumina on Alumina and Metal on Metal bearings are the most suitable solutions especially for young patients. The potential trouble using ceramic is the increased risk of fracture and the higher incidence of dislocation when small size heads are used. Furthermore alumina avoids the risk of ions release connected with M/M bearings.

The purpose of our study was to evaluate the clinical and radiographic outcome of the alumina bearing using a 28 mm femoral head in young patients.

Materials and Method

In 2000 we introduced in the First Orthopaedic Clinic of the University of Florence the use of ceramic bearing in THR for patients younger than 65 years.

In our experience CLS, Heritage and Conus stems with Trilogy cups (Zimmer, Inc., Warsaw, IN) showed excellent results thus we used them as our choice of implants.

With Trilogy cup the employment of 32 mm liner is only possible with large cups size (up to 56 mm). In most cases patients required a smaller cup size, for this reason we used a ceramic bearing with a 28mm head.

Between November 2000 and December 2005, 151 patients received 164 ceramic/ceramic THR with a 28 mm head.

The mean age of the patients was 54.8 yrs (range 25 to 74). There were 53 men and 98 women.

The preoperative diagnosis were primary osteoarthritis in 81 (Fig. 1a, b), secondary osteoarthritis to CDH in 40 (Fig. 2a, b), secondary osteoarthritis for other causes in 21, osteonecrosis in 11, femoral neck fractures in 8 and surface hemiarthroplasty failure in 3.

149 procedures were performed without cement (145 hips with CLS and Trilogy, 4 hips with Conus and Trilogy) and 15 were performed with hybrid fixation with cemented stem and a cementless cup (Heritage and Trilogy).

Patients were classified according to Charnley classification: class A (involvement of only the ipsilateral hip), class B (involvement of the contralateral hip), class BB (THR in both hips) and Charnley class C (involvement of other joints or systemic problems limiting activities) [1].
The clinical evaluation was performed with use of the Charnley score. Patients were assessed for pain, function and motion. A maximum score of 6 points represented normality (no pain, normal gait, free ROM) while 1 represented a...