Primary Total Hip Arthroplasty Using Noncemented Porous-coated Femoral Components in Patients With Osteonecrosis of the Femoral Head

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Abstract: Ninety consecutive total hip arthroplasties in 73 patients with osteonecrosis of the femoral head yielded 81 hips in 64 patients (37 men and 27 women) available for evaluation after a 4–8-year follow-up period. The average age at surgery was 39.9 years (range, 20–66 years). Osteonecrosis etiology was idiopathic in 13 hips, alcohol-induced in 15, femoral neck fracture in 12, and slipped capital femoral epiphysis in 2. The remaining 39 cases were related to steroids, which were administered for a variety of reasons. Two types of noncemented, porous-coated, straight-stem femoral components and three types of acetabular components were utilized. Good or excellent clinical results were recorded in 80.2% of the patients. Average Harris hip scores improved from 52.9 to 87.9 points. Nine patients required revision of at least one component and were significantly younger than those with unrevised components. A revision rate of 24.1% was recorded in patients under 35 years of age at the time of primary surgery. Good or excellent clinical results were seen in 92.3% of the idiopathic cases, 86.7% of the alcohol-induced cases, 77.8% of the renal transplant cases, and 62.5% of the systemic lupus erythematosus cases. The overall mortality rate at the follow-up evaluation was 14%; it was 50% in renal transplant patients. Analysis of the clinical results based on the implants showed no significant differences in Harris hip scores or pain and function scores. While total hip arthroplasty using noncemented porous-coated femoral stems appears to give better results than cemented procedures in patients with osteonecrosis of the femoral head, the results appear to be inferior to those reported in patients with other diagnoses. **Key words:** osteonecrosis, hip, arthroplasty, noncemented.

Osteonecrosis of the femoral head remains a difficult management problem for the orthopedic surgeon. The fact that this condition is seen in a heterogeneous group of patients representing a variety of disease entities with a spectrum of severity makes treatment particularly challenging. Because patients are often young and active, the selection of the proper treatment modality is essential for long-term hip function and durability. Treatment options designed to retain the femoral head have included the following: protected weight bearing,[1–3] core decompression with or without bone–graft augmentation,[2,4–9] muscle-pedicle–grafts, vascularized bone–grafts and osteochondral–grafts,[10] rotational or angular osteotomies,[11–13] and pulsed electromagnetic fields.[14]

Following collapse of subchondral bone, there is little chance of salvaging the compromised femoral

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