

Clinical and Roentgenographic Evaluation of Noncemented Porous-Coated Anatomic Medullary Locking (AML) and Porous-Coated Anatomic (PCA) Total Hip Arthroplasties

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Eighty-four primary noncemented porous-coated total hip arthroplasties (THAs) in 78 patients were reviewed clinically and roentgenographically at an average follow-up period of 37 months. The average patient age was 51.9 years. Sixty-four Anatomic Medullary Locking (AML) devices were placed in 58 patients, and 20 Porous-Coated Anatomic (PCA) devices were placed in 20 patients. The AML devices had been *in situ* an average of 36 months (range, 24-49 months), and the PCA devices had been *in situ* an average of 40 months (range, 29-51 months). The average patient ages were 52.7 and 49.2 years for AML and PCA patients, respectively. The AML devices included three that were fully coated, 59 that were five-eighths coated, and two that were one-third coated. The average preoperative Harris hip score was 38.2 for the AML devices and 33.2 for the PCA devices. The average postoperative Harris hip score was 80.7 for the AML devices and 83.8 for the PCA devices. Pain related to the implant was present in 30% of the AML devices and 30% of the

PCA devices. Roentgenographically, no component demonstrated complete radiolucency, and all components demonstrated roentgenographic evidence of bone ingrowth. Roentgenographic changes with time noted for both the AML and PCA devices included: neck roundoff, neck osteolysis, neck corticocancellization, endosteal bone bridging, and distal hypertrophy. On roentgenographic zonal analysis, radiolucency greater than 1 mm was observed most frequently in the most proximal lateral zone and distal tip of the femoral component. The current series of cases, although clinically acceptable, does not support the current widespread enthusiasm for primary noncemented AML and PCA total hip systems. Cemented THA appears to produce superior clinical results, particularly when contemporary cementing techniques are employed.

Noncemented porous-coated total hip arthroplasty (THA) has enjoyed increasing popularity in recent years. The current interest in biologic fixation of hip prostheses has evolved as a result of long-term follow-up studies of cemented THA in which aseptic loosening often resulted in clinical failure.^{1,2,4,6,9,14,21,23,28} Bone growth into a porous-coated implant offers an attractive alternative to cement fixation. While initial follow-up studies of noncemented porous-coated THAs have been encouraging,^{5,14,15,27} persistent pain has been reported in a signifi-

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