CASE REPORT

Total Hip Replacement in Femoral Rotational Deformity

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ABSTRACT

A 74-year-old patient presented with a rotational deformity of his right femur requiring treatment for bilateral hip osteoarthritis. He underwent osteosynthesis of a right femur fracture 40 years previously. Radiological examination revealed a healed right femoral shaft fracture and advanced osteoarthritis of the hips. The patient had sequential bilateral hip replacements. The right femoral prosthesis was placed in such a position that the abnormal 78° internal rotation of the distal femur was corrected to 48°. The hip is stable to 70° internal rotation at 90° flexion. There was no postoperative hip dislocation and the patient was satisfied with the result 2 years later.

Key Words: Deformity, Femur, Total hip replacement

INTRODUCTION

Rotational deformity of the femur can be a sequel of malunion of femoral fracture. In addition, developmental disorder (developmental dysplasia of the hip with excessive femoral anteversion) or periprosthetic fracture can also result from this deformity. The American Academy of Orthopedic Surgeons classification of femoral abnormalities classifies rotational deformity under malalignment. Three levels are also used to describe the location of the femoral abnormality. Level I is defined as bone proximal to the inferior portion of the lesser trochanter. Level II is from the inferior lesser trochanter to 10 cm distal, and level III involves the femoral bone distal to level II.

Treatment for rotational alignment should be individual. It was suggested by Eckhoff that osteoarthritis of the hip in a malrotated limb might be predicted. It was well illustrated in this patient that the hip in the malrotated limb showed more advanced osteoarthritis, assuming that both hips started the same before the femoral fracture. The malrotation was not addressed because the limping was well tolerated until 2 years before presentation. Theoretically, the correction should be done by osteotomy to the malrotated segment and fixed either externally or internally. Berry suggested 2-stage surgery of joint replacement after corrective osteotomy through the abnormal zone. A 1-stage approach was adopted to correct the malrotation problem and total hip arthroplasty of the affected joint was performed.

CASE REPORT

The patient was a 74-year-old manual labourer who had sustained a fall affecting his right leg 40 years