

PROFEMUR™ Modular Hip System and LINEAGE® Ceramic-on-Ceramic Total Hip System Using Modular Neck Options To Address Acetabular Position

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INTRODUCTION

With the increasing number of young patients seen with osteonecrosis of the femoral head new options must be presented both in terms of primary and revision treatment. Studies have shown that 70-80% of untreated AVN of the femoral head will lead to femoral head collapse.¹ These can be among the most challenging patients to treat for the orthopaedist. Various treatments have been described for the treatment of osteonecrosis of the femoral head including pharmacological treatments, activity modifications, osteotomies, hemiarthroplasty, core decompression with and without bone grafting, total hip replacement, fusion, and femoral head resurfacing.² These treatments have all had variable results in the literature. Revision of these treatments to total hip replacement can be one of the most challenging procedures for the orthopaedic surgeon. The PROFEMUR™ modular femoral component with the LINEAGE® ceramic-on-ceramic total hip replacement option offers multiple combinations to meet the needs of this patient population.

PATIENT PROFILE

JD is a 43 year-old male physical therapist with a history of bilateral idiopathic osteonecrosis of the femoral heads. He has a well functioning metal on polyethylene total hip replacement on the right and presented with significant pain of one year duration on the left. He had undergone a left femoral head resurfacing seven years before with good results for six years. He described his pain as being localized to the groin. His left leg measured 10mm shorter than his right leg. His x-rays did

reveal some mild to moderate proximal migration of the component into the supero-lateral portion of the acetabulum. He underwent a revision of his surface replacement to a PROFEMUR™ modular hip with a LINEAGE® ceramic on ceramic acetabular component.

SURGICAL METHOD

A standard posterior approach was completed. The posterior capsule was kept intact and repaired at the end of the case. The superior and posterior portions of the acetabulum were found to be severely worn with a large contained defect of the posterior column. The acetabular component was anteverted about ten degrees less than normal to enhance bony fixation. This decreased acetabular anteversion was made up on the femoral side with the patented anteverted/varus modular neck, which allowed the combined femoral/acetabular anteversion to be approximately 45 degrees.

POST-OPERATIVE COURSE

The patient was kept touch down weight bearing for two weeks at which time he was advanced to weightbearing as tolerated. He returned to work on a limited basis at four weeks and with full activities at eight weeks. All of his pre-operative pain had completely resolved with his surgery. Although his follow-up is limited at this point, he is quite pleased with his results.

DISCUSSION

Due to the young age and active lifestyle of the patient, implantation of a ceramic on ceramic bearing surface provides an excellent long-term solution. The advantage of a ceramic bearing in THA is the resistance to wear when compared to polyethylene. The PROFEMUR™ modular hip system provides a range of femoral neck options to balance the soft tissue of the hip, increase joint stability, and increase range of motion.



1 Steinberg, M., et al, Core Decompression with Bone Grafting for Osteonecrosis of the Femoral Head, *Clinical Orthopaedics and Related Research*, #386, p. 71-78.
2 Siguier, T., et al, Partial resurfacing Arthroplasty of the Femoral Head in Avascular Necrosis, *Clinical Orthopaedics and Related Research*, #386, pg 85-92.



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