

Inside the case

Where surgeon insight meets strategy

“ Hip arthroplasty surgeons may be unprepared for Perthes deformities using primary implants. Many feel forced to use complicated, antiquated implants traditionally used for hip dysplasia. ”

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Perthes – complex femoral anatomy and the rationale for REDAPT[◇] Revision Femoral Stem 190mm and REDAPT Revision Acetabular System

Case overview

A 50-year-old male presented with 30 years of chronic hip pain, radiographs highlight severe bilateral Perthes deformities of both hips, and he wants a long-term fix. He has a shallow acetabulum, a short, varus femoral neck, an overhanging trochanter, and a large mismatch between the width of the metaphysis and diaphysis of the femur.

The challenge

Classic pitfalls of total hip arthroplasty for Perthes deformity include hip instability, overlengthening of the leg, nerve injury, as well as periprosthetic fracture. The high complication profile for these cases is largely the result of acetabular and femoral deformities. A shallow dysplastic socket makes version and fixation of the acetabulum difficult. The femoral geometry is very different than the design of primary femoral implants, which reduces the ability to control leg-length and version. This mismatch can also explain the high rate of periprosthetic fracture.



Watch the REDAPT
Revision Hip System in action

REDAPT[◇]
Revision Femoral Stem



REDAPT[◇]
Revision Acetabular System



Surgeon insight

The REDAPT[®] Modular shell with OR30[®] OXINIUM[®] Dual Mobility affords the surgeon fixation and is designed to achieve joint stability through independent adjustment of neck angle, height, offset and version. Additive manufacturing is used to produce a porous surface that is intended to mimic the structure of cancellous bone. Patented locking screw technology provides necessary comfort to tackle even the shallowest socket. Dual Mobility with diffusion hardened OXINIUM technology provides an excellent opportunity to maximize bearing size and stability. OXINIUM may reduce polyethylene wear for younger patients undergoing total hip arthroplasty, which is common for patients with Perthes.¹⁻⁵

Conical tapered stems have always been a robust tool to control version and leg length. However, fluted tapered stems typically increase the complexity of the surgery. Stem subsidence is often frustrating, and modularity adds

even more steps to a primary total hip. The 190mm REDAPT Femoral stem offers absolute control to set leg length and version. The femoral design (ROCKTITE[®] flutes, major and minor splines, and an aggressive 3° taper) ensures that you can trust your femoral trial to match the final product while minimizing risk of subsidence or sitting proud.⁶⁻⁹ The 190mm stem is better suited to prevent femoral perforation and accommodate for femoral bowing. A monoblock implant simplifies workflow, reducing the complexity of a complex primary total hip arthroplasty.

Strategic takeaway

While less severe Perthes deformities may be treated with routine primary implants, severe deformities can be underappreciated on routine radiographs. The Smith and Nephew REDAPT portfolio provides versatile solutions to meet the needs of simple and even the most complex Perthes deformities, without resorting to complicated or antiquated implants.

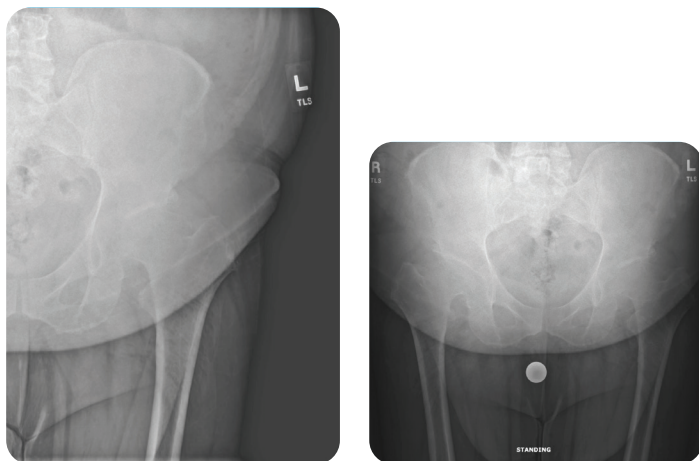


Figure 1. Preoperative AP Pelvis and AP Hip radiographs demonstrating bilateral Perthes deformities with degenerative changes. Key dysplastic features highlight a shallow acetabulum, a short, varus femoral neck, an overhanging trochanter, and a large mismatch between the width of the metaphysis and diaphysis of the femur.

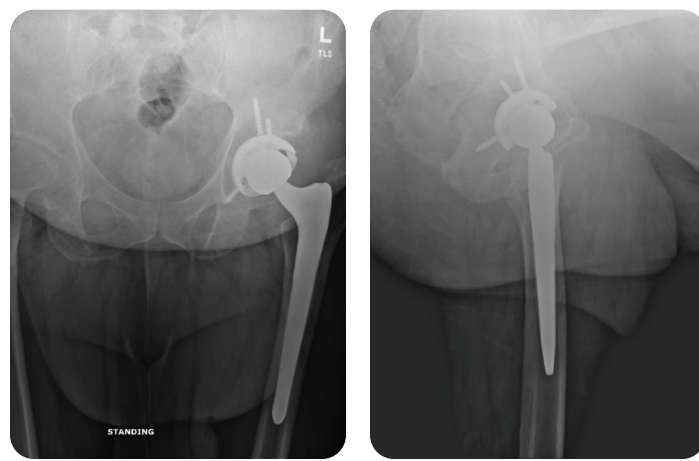


Figure 2. Postoperative AP Pelvis and Cross-Table Lateral Hip radiographs demonstrating a complex primary total hip arthroplasty: 190mm REDAPT Monoblock Femoral Stem, 56mm REDAPT Modular Shell with locking screw fixation in the ilium and ischium, and a 36mm OXINIUM Head with a flat liner. A 36mm bearing was adequate stable for this patient.

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