

Hip resurfacing is not for everyone

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Hip resurfacing is often seen as a modern alternative to the more conventional total hip replacement, but new data from a study led by Rush University Medical Center suggest that a patient's age and gender are key to the operation's success.

In a review of over 500 surgeries performed in the U.S. using a hip resurfacing device recently approved by the Food and Drug Administration (FDA), the researchers found that the majority of serious complications occurred in women of all ages and men over the age of 55. The most common complication, and the most serious, was a fracture of the femoral neck, the slender area of bone just beneath the head of the femur.

The study has just been published online and will appear in the January 2009 issue of *Clinical Orthopaedics and Related Research*.

"The ideal patients for hip resurfacing are males under the age of 55. They have the fewest, and the least serious, complications," said Dr. Craig Della Valle, lead author and a specialist in joint reconstruction at Rush University Medical Center. "Patients may be eager to take advantage of technological innovations, but for older individuals, a conventional hip replacement is generally more appropriate."

The researchers analyzed data for the first 537 hip resurfacing surgeries performed in the U.S. after the Birmingham Hip Resurfacing implant, manufactured by Smith & Nephew, was approved by the FDA in October 2006. The majority of the patients suffered from severe

osteoarthritis. All 89 orthopedic surgeons involved in the procedures had undergone training required by the FDA before conducting their first cases. Their level of experience with hip surgery varied. Some were joint replacement specialists; others were general orthopedic surgeons.

Serious complications occurred in 32 of the 537 cases, including 10 cases in which the femoral neck fractured after surgery, a problem not seen with conventional hip replacements. Such fractures require additional surgery.

Nine of the fractures in the study occurred in patients who were either female or older than 55 at the time of the implant. Eight of the fractures occurred when the surgeon was relatively inexperienced with the procedure (within the surgeon's first 10 cases).

According to Della Valle, age and sex are probably linked to the incidence of such fractures because of bone quality and quantity.

"Patients who are older or who are female tend to have softer bone," he said. "Also, men on average have larger bone structures, with a greater surface area for securing the implant."

The study identified several other serious complications, including nerve injury, joint dislocation, fracture of the proximal femur (just below the femoral neck), loosening of the metal component in the joint socket, and deep infection.

The rate of complications, however, was similar to that found in other studies involving only orthopedic surgeons who had extensive experience with hip resurfacing. As a result, the authors concluded that the FDA-mandated training succeeded in teaching generalists the skills needed to perform the technically challenging hip resurfacing procedure, alerting them to possible complications and ways to avoid those problems.

In a conventional total hip replacement, orthopedic surgeons remove the head of the femur, or the ball of the hip joint, and replace it with a metal stem inserted into the thigh bone. They fit the socket of the joint with a metal shell that typically includes a plastic liner. In hip resurfacing, the femoral head remains, but its surface is reshaped to accept a rounded cap with a short stem that sits in the femur. A thin metal cup is pressed into the hip socket. Both components are made entirely of cobalt chrome, a metal.

Hip resurfacing is generally recommended for younger, more active patients out of concern that the traditional artificial hip might wear out during their lifetime and require a second replacement, a far more complicated surgery.

"Hip resurfacing has certain advantages over the conventional total hip replacement," said Della Valle. "It preserves more bone because the head of the femur is retained. It enables the patient to return to high-impact sports because the metal components of the implant resist wear and tear and can withstand the forces associated with activities like running. Some studies have also shown that hip resurfacing carries a lower risk of dislocation because the size of the ball component is larger."

"But despite its benefits, risks remain," Della Valle added. "Our findings suggest that we need to be cautious. This procedure is not ideal for everyone."

Source: Rush University

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