

Resurfacing Arthroscopy

By Stacy Schwan

Renowned ballet dancer William Starrett did it in 1998 at age 44. Adventure racer Robyn Benincasa did it in 2007 at age 41. Tour de France cyclist Floyd Landis did it in 2006 at age 31.

Debilitated by excruciating hip pain, each of these

world-class athletes underwent hip resurfacing arthroscopy with the expressed goal of returning to the activities that had brought them so much success.

Hip resurfacing arthroscopy is a procedure first developed in Europe in the 1970s as a bone-conserving alternative to total

hip replacement (THR). In contrast to THR, where the femur head is removed altogether and replaced with a metal or ceramic ball, resurfacing involves shaving down the femur head and covering it with a metal cap (the socket is replaced in both procedures). One obvious advantage of resurfacing is that it preserves more of the femoral bone. In addition, because the cap used in resurfacing is larger than the hip ball used in THR, a resurfaced hip is generally more stable than a traditional prosthetic hip.

Despite its potential, early problems with the materials and techniques used in resurfacing led to complications, such as excessive wear of the metal-on-polyethylene parts, early prosthetic loosening and femoral neck breakage. Due to the high rate of unacceptable outcomes, the procedure was largely abandoned by the mid-1980s.

Today, hip resurfacing arthroscopy is making a comeback with better procedures and longer-wearing materials. Though used in Europe since 1997, the first hip resurfacing system did not gain FDA approval in the U.S. until 2006. The BIRMINGHAM HIP Resurfacing System, marketed by Smith & Nephew, was approved in May 2006; the Cormet Hip Resurfacing System, marketed by Stryker, was approved in July 2007; and others are currently being tested.

Eugene DellaMaggiore, M.D.



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O'Connor Hospital is a Joint Commission-certified Center of Excellence for hip replacement and knee replacement.

AN IMPLANT YOU CAN RUN ON

Dr. Eugene DellaMaggiore is an orthopaedic surgeon who sees plenty of painful, debilitated knees and hips limping through the door of his San Jose practice. He says the benefits of hip resurfacing arthroscopy are many for certain patients who are under 55 years old.

“One of the advantages is that you preserve more native bone,” he says. “Hip replacements have a finite lifetime; traditionally, they were slightly less than 20 years. As the

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— Dr. Eugene DellaMaggiore

implants get better we're trying to get more longevity out of them, but they still do have a finite lifetime. The advantage of preserving more bone for younger patients is having more bone for revision later in life.

“Also, for a patient who is still very active, it's an implant that you can run on. Traditional replacements you don't run on. Resurfacing has a much bigger ball so it's an inherently more stable construct.”

An implant you can run on — this is the primary reason people like Landis, Starrett, Benincasa and many other ac-

tive adults opt for resurfacing. More than achieving pain relief, the goal is to return to their former activities and professions.

Dr. DellaMaggiore can well relate to the athlete's mindset, having been highly athletic all his life. Participating in sports sparked an early interest in the musculoskeletal system that eventually drew him to orthopaedics — that, and a grandfather with a knee injury from

college football, which caused him a lot of disability later in life. "I thought if I could spare someone else that disability, then I would want to do it," he recalls.

A graduate of UCLA School of Medicine and former Navy surgeon, Dr. DellaMaggiore completed his orthopaedic surgery residency at the Naval Medical Center in San Diego in 2000. For the next two years he remained on faculty in the Navy, during which time he helped teach residents. After 9/11, he went overseas to care for injured servicemen and Afghans.

In 2002, Dr. DellaMaggiore left the Navy to embark on his own surgical practice in San Jose, where he now specializes in knee and hip replacement and shoulder surgery. He also chairs the O'Connor Hospital Division of Orthopaedic Surgery.

DEFINITELY NOT FOR EVERYONE

Dr. DellaMaggiore understands what drives some of his more athletic patients to want to not just get rid of the pain, but get back into the game. "From my involvement in triathlon and endurance sports, I know and take care of a lot of young, active patients who want to continue running and participating in sports," he says. "For those individuals who have hip osteoarthritis at a young age, resurfacing is a great option."

The doctor is quick to point out, however, that while resurfacing arthroscopy offers some tremendous advantages for specific patients, it definitely is not for everyone.

"Smaller women do not do well with resurfacing arthroscopy," he notes. "The main reason is that the bone left in the femoral neck is just not big enough to help support the weight of the body with the implant. People who are osteoporotic are also not candidates for resurfacing.

"The ideal candidate is a large, hefty male, because he's got a big enough bone stock to help support a resurfacing arthroscopy," he adds.

Resurfacing also entails substantially more risks compared to traditional hip replacement.

"It is a very fussy procedure and it does have a much higher complication rate," Dr. DellaMaggiore says. This is because, in many ways, it is more technically demanding than THR. Plus, in an era when minimally invasive surgery is fast becoming the norm, resurfacing arthroscopy is anything but.

"Everyone thinks you're doing this sexy new high-speed surgery, but in truth you need a bigger incision and you need

Anterior Surgical Approach to Total Hip Replacement

By David J. Jupina, M.D.

Orthopaedic surgeons have been performing total hip replacement surgery for over 40 years. During that time, numerous advances in hip replacement design and surgical techniques have occurred. One of the most recent advances is the anterior surgical approach to total hip replacement, pioneered by Dr. Joel Matta. This particular surgery requires specialized equipment, a ProFX or hana operating table, allowing the patient to be placed in the correct operative position for an anterior approach to the hip.

This minimally invasive "approach" to total hip replacement requires the surgeon to enter through the front of the hip joint versus the posterior approach to the hip, as is the case in more traditional hip replacements. With an anterior approach, the posterior and lateral supporting muscles of the hip (the gluteal muscles) will remain intact, potentially offering more stability and therefore a decreased risk of hip dislocation postsurgically. There is generally less trauma with this approach because the incision is only approximately 4 inches in length (this may vary depending on patient size).

The advantages to this innovative surgical technique are many and are unique to the technique. Overall, there is an immediate stability of the hip with this surgical technique, which allows the patient to potentially experience a decreased hospital stay and an accelerated rehabilitation schedule. With a traditional hip replacement surgery, movement restrictions for six to eight weeks and limited hip flexion to no more than 60° to 90° are typical. Following anterior hip replacement, patients are allowed to bend their hip within their tolerance and are not encumbered by motion restrictions within their daily activities. This allows for ease in sitting in a chair, getting in and out of a car, or earlier sexual involvement postsurgically.

Before this surgery is considered, a patient should meet with their orthopaedic surgeon for an examination and discussion to determine whether the patient is indeed an appropriate candidate for the anterior approach technique for total hip replacement. Total hip replacement surgery has had a long history of success with traditional approaches. This innovative approach will improve current standards and allow individuals to return to their activities more quickly and with a greater degree of confidence.

David J. Jupina, M.D., of Tri-Valley Orthopedic Specialists, Inc., has worked extensively with Dr. Joel Matta in Southern California. Dr. Jupina is currently performing the anterior approach for total hip replacement at ValleyCare Health Systems in Pleasanton.

to spread the muscles farther apart, because you're not just cutting across the neck of the femur. You have more bone to work around and, consequently, you need to move the soft tissues over a little bit more. So it's inherently a bigger soft-tissue procedure and requires a bigger incision than a standard hip replacement."

Blood supply is another issue that makes resurfacing arthroscopy more technically demanding than THR, Dr. DellaMaggiore says.

"The blood supply of the neck of the femur is crucial. It's not as important when you're doing a standard hip replacement because you just cut straight across it. With resurfacing you really need to preserve as much blood supply to the femoral neck as possible."



The Cormet Hip Resurfacing System

Perhaps the most crucial part of the resurfacing, says Dr. DellaMaggiore, is placing the guide pin.

“The first guide pin that you put into the head and the neck is where all of your subsequent cuts will be made. Imagine a circular saw that is going to cut and mill the head and the neck of the femur. If you don’t have it perfect, you’re going to notch the neck of the femur. Once you notch the neck of the femur, even a little bit, you’re at risk for subsequent fracture of the femur.”

Another disadvantage of resurfacing compared to THR is that there are fewer options for adjusting leg length. “With a standard hip replacement we can pretty much give someone a different length implant to help correct leg length discrepancies,” Dr. DellaMaggiore says. “With a resurfacing you just don’t have those options. You have to put the cap where the head is. So then, people who have a lot of deformity are typically not candidates for resurfacing.”

Finally, because the procedure is relatively new, additional studies need to be done on postoperative issues, such as the potential for some bone reabsorption beneath the implant cap, as well as the long-term effects on the body of the metal particles that inevitably slough off the prosthetic surfaces and get absorbed into the blood stream.

EFFECTIVE AND REWARDING — FOR THE RIGHT PERSON

Considering the technical challenges of the resurfacing procedure, the risks of complications and the limited pool of appropriate candidates, why would anyone choose resurfacing over THR?

Dr. DellaMaggiore admits that currently the number of his patients undergoing resurfacing is small, perhaps only 5-10%. Still, he says, “This procedure, for the right person, with the right indications, with activity-limiting, disabling pain, is extremely effective and rewarding.”

He tells of one patient in particular who was able to return to a very active job following the resurfacing procedure.

“Before, he was to the point where every step he took was with a limp and a grimace in pain, and he was in danger of losing his job because he just couldn’t keep up. Now, he walks down the hall, no problem, with a smile on his face and says, ‘I can do all aspects of my job, and I do my job better now than I ever did before my surgery.’ That is very satisfying.”

A PROCEDURE WITH ROOM TO GROW

Dr. DellaMaggiore believes that the demand for resurfacing arthroscopy will continue to grow along with improvements in the technology.

“It’s something that there was a fervor for in the ’70s; the early data was somewhat questionable and so its infancy was fraught with complications. I guess it is getting to its teenage stage, but it still is going to mature a little bit over the next few years. There’s still some work to do as far as preventing the complications of femoral neck fractures and bone reabsorption, and I think it’s going to keep getting better.”

As is often the case, one limiting factor in the evolution of resurfacing arthroscopy is that, because it is more complicated and expensive than traditional THR, it is harder to obtain approval from insurance companies, and compensation is likewise limited. “So, from a purely economic standpoint, it’s easier to just do the standard thing,” Dr. DellaMaggiore says.

However, when it comes to what is best for his patients, Dr. DellaMaggiore does not “just do the standard thing.” How does he decide what to do in these situations?

“I think the biggest thing, as corny as it sounds, is to remember the Hippocratic oath — that you’re trying to do the best thing you can for your patients, and treat them the way that you would want to be treated.” ■