

Innovative Knee Procedure Restores Cartilage

When Julie Gasaway's youngest child started kindergarten, this 42-year-old mother of four decided to take some time for herself and ramp up her activity level. A resident of Northbrook, Gasaway enrolled in yoga and dance classes. And she began hitting the courts, too.

"In January 2003 I was playing tennis when I heard a popping sound in my right knee," recalls Gasaway. "My friend heard it too, and she said my face went white with pain. I could walk but I couldn't straighten my leg or move without a severe limp."

Gasaway hobbled her way over to her primary care physician Christine Kharasch, MD, who then recommended orthopaedic surgeon Chadwick Prodromos, MD, a knee and shoulder specialist. Assuming that she had simply sprained her knee, Gasaway soon learned that her knee problem was much worse. Not only had the cushion of articular cartilage in her knee worn away but also so had some of the bone. Gasaway's pain was coming from bone-on-bone contact and the onset of arthritis due to the friction.

"When Dr. Prodromos took a look at my x-rays," recalls Gasaway, "he informed me that I had the knee of a 70 year old!"

Had Gasaway really been a septuagenarian her options would have most likely included a total knee replacement. For someone as young and active as Gasaway, an artificial joint was less than ideal. "In



Julie Gasaway's knee is pain free and fully functional thanks to several joint restoration procedures performed by orthopaedic surgeon Dr. Chadwick Prodromos.

younger patients, joint replacements wear out sooner and the re-replacements often do not work as well or as long," explains Dr. Prodromos. "In contrast, joint restoration strategies burn no bridges and generally allow a more active lifestyle."

Fortunately, Gasaway had some other options. One of a handful of orthopaedic specialists in the Chicago area, Dr. Prodromos is trained in articular cartilage implantation (ACI), an innovative cartilage repair program. He began performing this novel procedure at Evanston Northwestern Healthcare last year.

In a healthy knee or joint, articular cartilage coats bones in joints and allows them to glide. When this coating is missing, pain and/or friction results. ACI works by regenerating cartilage growth using a patient's own cells. The patient first undergoes arthroscopic surgery to remove a tiny sample of articular cartilage. The cartilage cells are then flown to the laboratories of Genzyme Biosurgery in Cambridge, Massachusetts.

This maker of Carticel, the commercial product used to culture autologous cartilage cells, grows millions of new cells for the patient before returning them for implantation. While the patient is under a general anesthetic or epidural anesthesia, the surgeon makes an incision in the knee and implants the cells. The procedure requires an overnight hospital stay. Generally patients can bear weight on the affected area within six to eight weeks and

resume physical activities in a year's time.

"This is the first technique to grow cartilage that chemically resembles native cartilage," says Dr. Prodromos. "I liken this innovation to the Wright brothers and the first airplane. We are just starting to fly a little bit, but this is definitely the future of joint repair."

As the procedure's 85-90 percent success rates are more likely to occur in patients 55 and younger, Gasaway was an ideal candidate. She had the ACI procedure at Highland Park Hospital last June as well as several other joint restoration procedures needed to ensure the success of the implant.

In realigning Gasaway's right leg, Dr. Prodromos pioneered a bone grafting technique to repair the bone defect in her knee. He decided to harvest bone from Gasaway's femur instead of the usual hip-bone area to reduce surgical time, lessen post-operative pain, and improve the quality of the graft.

This January, six months after her surgery, Gasaway could walk without crutches or a cane. Today, less than a year after her surgery, Gasaway has resumed some of her physical fitness regime and is taking a pilates exercise class.

"I can walk and don't have pain," reports Gasaway. "While there certainly were no guarantees, I had a great recovery and the prognosis was on target. Now within a year of my surgery, I can really do almost everything I want to do." ■



No more baby steps for Northbrook resident Julie Gasaway.