Alternative to knee replacement

offers potential relief for patients who have not been candidates for surgery

UCLA is among the first medical centers to offer a minimally invasive alternative to knee replacement surgery, providing potential relief to individuals who are experiencing debilitating pain from knee arthritis but haven't been candidates for surgery or were deterred by the lengthy recovery time.

Osteoarthritis of the knee can cause significant pain and limit physical activity, hindering quality of life. Most people can obtain relief from medications or injections of a steroid or hyaluronic acid, but the benefits often are temporary and the effects may diminish with repeated treatments.

When these conservative approaches are inadequate, the only option has been knee replacement surgery. More than 600,000 people in the U.S. receive knee replacements each year, and the surgery produces excellent overall outcomes with a relatively low complication rate. But many people are not candidates, either because their advanced age or other medical conditions that place them at high risk. Additionally, many people at a relatively young age may delay the operation, given the likelihood that they might need a second replacement or revision after 15-to-20 years. Others decide to live with their discomfort rather than undergo a procedure that requires a prolonged period of recovery.

UCLA now is offering a middle ground through a procedure called genicular artery embolization, a minimally invasive procedure that involves injection of a small volume of tiny particles into the artery in the knee. "The goal is to reduce the inflammation that causes the pain, which tends to be the result of abnormally increased blood flow to the area," says UCLA interventional radiologist Sid Padia, MD. The procedure has previously been used to treat cancerous tumors and uterine fibroids.

Genicular artery embolization is performed as an outpatient procedure and takes about two hours under conscious sedation. Patients who smoke or have artery damage are not candidates. Through a small catheter under X-ray guidance, a small volume of particles, tinier than grains of sand, are injected into enlarged arteries in the knee, reducing their size. Patients go home the same day and often can resume their usual activities by the evening.

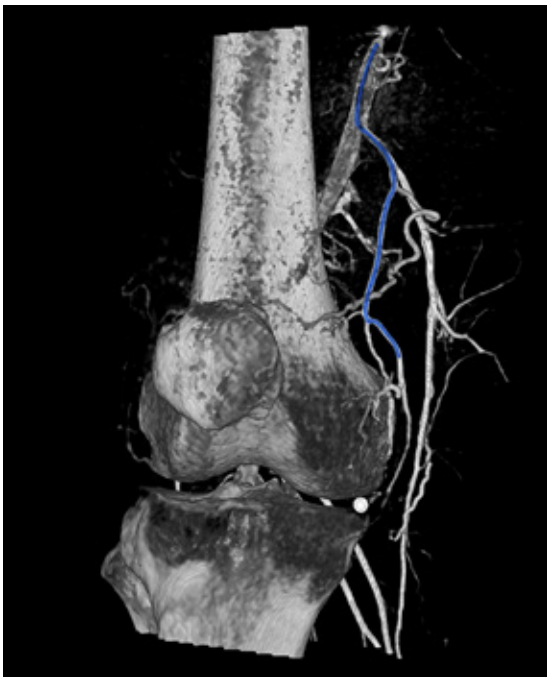
Dr. Padia notes that in Japan, where the procedure originated, approximately 80 percent of patients reported significant pain relief and marked improvement in their knee function. Many have been able to reduce or eliminate their need for pain medication, including narcotics. Dr. Padia is equally encouraged by the results among the patients he has treated.

"This fills in the gap for people who are not being helped by conservative treatments and are either not ready or are poor candidates for knee replacement surgery," Dr. Padia says. "Until now, there was no viable option for these patients."

Applications for this technology are in development for other joints, such as the shoulder for people with adhesive capsulitis (also known as frozen shoulder) and the elbow for lateral epicondylitis (also known as tennis elbow).

For more information about genicular artery embolization at UCLA, go to:
uclahealth.org/radiology/ir/gae

During the genicular artery embolization, Dr. Sid Padia uses an angiogram to identify the abnormal genicular artery that supplies the area of pain in the knee.
Image: ABC7



During the genicular artery embolization procedure, a 3D reconstruction of the knee and the arteries helps identify the genicular artery (blue), which is the target for the embolization procedure.
Image: ABC7