

News

Alternative to knee replacement offers potential relief for patients who have not been candidates for surgery

For Immediate Release: September 30, 2020

(LOS ANGELES, California) -- More than 14 million people in the US suffer from osteoarthritis of the knee, a condition that can cause significant pain and limit physical activity, hindering quality of life. While some may obtain relief from conservative approaches such as medications or injections, others must opt for joint replacement surgery, an invasive procedure with excellent outcomes but a prolonged recovery.

A new, minimally invasive procedure now available at UCLA holds promise for those who are in pain but not candidates for knee replacement surgery because of age or pre-existing medical conditions. The procedure, [genicular artery embolization \(GAE\)](#), is similar to a technique used to treat uterine fibroids. [Sid Padia, MD](#), director of interventional radiology at [UCLA Health](#), developed the approach based on a similar knee procedure pioneered in Japan in 2017.

“The procedure uses advanced imaging guidance and is remarkably straightforward – it involves injecting a small volume of tiny particles into the blood vessels that ‘feed’ the inflamed knee, reducing the blood flow to that area,” says Padia. “That in turn reduces swelling and inflammation, resulting in less pain and improved mobility. “

Padia has treated more than 100 patients at UCLA since he started offering GAE in 2018, with 70 percent reporting significant pain reduction and improved mobility.

Gianni Contardo, a 55-year-old tech manager with severe knee arthritis pain came to Dr. Padia as he was caught in the middle – he had no luck with injections, but at his age, was not a good candidate for a knee replacement given the likelihood that he would need a second replacement or revision after 15-20 years.

“My left knee was painful and stiff – almost unusable. I used to run and hike a lot, but had to stop. Squatting and bending were very difficult. It really impacted every aspect of my life, especially since I have a teenage daughter I like to hike and be active with,” said Contardo.

Genicular artery embolization is performed as an outpatient procedure and takes about two hours under conscious sedation. 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 and limiting blood flow to the inflamed, painful area.

Patients can walk soon after the procedure and go home the same day. No physical therapy or other follow-up treatment is needed. Those who benefit from the procedure report a significant improvement six to eight weeks after GAE.

“While we don’t yet know why 30 percent of those receiving the treatment don’t benefit, we do know it doesn’t make patients’ osteoarthritis pain or inflammation worse,” says Padia. “And based on three years of data, those who do show initial benefit retain that improvement.”

According to Padia, there are millions of people in the U.S with severe osteoarthritis who are not adequately helped by conservative treatments and who are either not ready or are poor candidates for knee replacement surgery. The GAE procedure may offer an alternative.

“The breakdown of knee cartilage is like the wear and tear of brake pads in your car,” said Padia. “If we can reduce the friction and inflammation, we can potentially slow down the deterioration and give OA sufferers – some who can barely walk – a better quality of life.”

UCLA Health will be starting clinical trials later this fall, and the procedure will be more widely available in the U.S. next year. “Word-of-mouth has been spreading. We have treated people from all over the country – interventional radiologists and patients alike are optimistic about the benefits the early data has shown,” said Padia.

Padia and his colleagues are continuing to explore adaptations that may help more patients benefit from GAE. They have also begun performing the procedure on shoulder and elbow joints with promising results.

Gianni says the improvement in his quality of life has been drastic; something he did not think possible without surgery.

“I would say that my knee started feeling better within two weeks with a notable reduction of swelling and stiffness,” said Contardo. “After a few months, I was hiking tough trails with my daughter without pain. I didn’t know this would be possible – I’m very grateful.”

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