

The OSF HealthCare Cardiovascular Institute implanted an MRI-safe pacemaker into a patient in early February, the first procedure of its kind in central Illinois. Cardiac electrophysiologist Dr. Abraham Kocheril says the surgery went smoothly and that the patient, an 87-year-old woman, is doing well.

What makes the procedure so exciting is that for decades, pacemakers had to be reprogrammed prior to having an MRI. Magnetic energy from the MRI can interfere with the function of the pacemaker, endangering a patient's safety, even their life, potentially. The burden of reprogramming is now in the past. The new pacemaker automatically detects the surrounding magnetic environment and shifts into an MRI-safe mode.

"The nice thing is this is a very small device, this is the smallest of all the MRI conditional devices so they're able to pack in a lot of technology and make the device smaller at the same time. We're excited to use it," said Dr. Kocheril.

The quality and clarity of an MRI image often makes it the preferred scan over a CT. As MRI-safe pacemakers become the new standard, all patients will be able to receive an MRI without the risk of device malfunction.

"There was a period of time we were asking people if they were likely to get an MRI to choose those kinds of devices. But it's better to just put these devices in everyone so we don't have to ask that question. What if a patient answers wrong and said they didn't need an MRI and all of a sudden they have a stroke or something and they do need an MRI. But nowadays that's not a concern, we put in the right kind of device and they're good to go," explains Dr. Kocheril.

The device is part of the BIOTRONIK Edora series, introduced in July 2017 as the smallest MRI-compliant pacemaker available in the United States. Its lifespan can exceed 13 years. Dr. Kocheril says another plus to the new device is that you can mix and match components into already implanted pacemakers. That means when doctors are replacing devices at the end of their battery life, you can put in a new generator that has the automatic reprogramming characteristics along with leads that are compatible and the whole system works well together.

The Edora model is a 2018 Interactive Innovation finalist at the South by Southwest technology conference in Austin, Texas.

Dr. Kocheril is pleased to be on the cutting edge. "I've been a fan of MRI conditional devices for a long time," he said. "I have been waiting for this day."