Cardiologists at the Oregon Heart & Vascular Institute recently became the first in the region to implant an MRI-compatible pacing system in a cardiac patient. Conventional pacing systems preclude magnetic resonance imaging due to potential for interference with pacemaker operation and damage to system components. Developed by Medtronic Inc., the Revo MRI™ SureScan Pacing System has been approved by the FDA as safe for most MRI scans. Cardiac electrophysiologist Ramakota Reddy, MD, implanted the region’s first pacemaker of this kind on March 11, 2011, at Sacred Heart Medical Center at RiverBend.

**TECHNOLOGY**

MRI is the gold standard diagnostic tool for soft tissue imaging for neurologists, oncologists and orthopedic surgeons. However, patients with standard pacemakers cannot take advantage of this vital technology. When subjected to MRI, the leads of conventional pacers can get extremely hot, up to 80 degrees Celsius. MRI can inhibit device function and induce rapid pacing, mechanical pull, device rotation and device failure or reprogramming.

The Revo MRI™ SureScan Pacing System includes hardware modifications to the device and leads designed to reduce or eliminate hazards produced by the MRI environment. The SureScan feature sets the device into an appropriate mode prior to imaging to prevent misinterpretation of MRI-generated electrical noise. The device and leads contain radiopaque markers that indicate the device is compatible with most MRI systems.
RESEARCH

A randomized multi-center trial at 42 centers around the world featuring 464 patients implanted with the Revo MRI™ SureScan Pacing System detected no scan-related complications in patients who underwent MRI. The EnRhythm MRI Pacing System Clinical Study detected no sustained atrial or ventricular arrhythmias, no asystole, no pacemaker output inhibition and no electrical resets in the group receiving MRIs.

OREGON HEART & VASCULAR INSTITUTE

The Oregon Heart & Vascular Institute is one of the premier centers in the Pacific Northwest for providing state-of-the-art clinical services, medical excellence and quality outcomes combined with an exceptional and unique patient experience. Located at Sacred Heart Medical Center at RiverBend, OHVI is comprised of area cardiologists, cardiothoracic surgeons, interventional radiologists and vascular surgeons partnering with researchers from the University of Oregon in Eugene.

FOR MEDICAL PROFESSIONALS

Learn more about our referral services, important contact information and CME offerings at www.peacehealth.org/medpro.

Case Study

Subject: A 66-year-old woman who had undergone multiple prior heart surgeries in Alaska presented at the Oregon Heart & Vascular Institute with tachycardia.

Diagnosis: Following catheter ablation for tachycardia, patient returned several weeks later with bradycardia.

Treatment: Cardiac electrophysiologist Ramakota Reddy, MD, determined the patient would be a good candidate for the Revo MRI™ SureScan Pacing System given her age and likelihood she would require future MRI testing. He implanted the device on March 11, 2011.

Outcome: Patient tolerated procedure without complication. She was discharged two hours after the procedure.

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