World's smallest Medtronic Micra pacemaker: Cardiac pacing game change?

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(Medical Xpress)—Device maker Medtronic has accomplished a feat in device miniaturization, this time in the form of an implantable cardiac device the size of a large vitamin. Earlier this month, Minneapolis-based Medtronic said the first in-human implant of the world's smallest pacemaker, without surgery, has taken place in Linz, Austria, as part of a global clinical trial.

The pacemaker's size and the fact that it can be implanted without surgery are the key features. The device is called the Micra Transcatheter Pacing System (Micra TPS). The implant does not require

a surgical incision in the chest. Pat Mackin, senior vice president for Medtronic and president of the company's cardiac rhythm disease management business, compared it to a traditional pacemaker. "There's no more generator. There's no more lead," he said. Rather, it can be directly introduced into the heart in a minimally invasive procedure, to eliminate a potential source of device-related complications. The device is 24 millimeters long and 0.75 cubic centimeters in volume, far smaller than the traditional size of a conventional pacemaker.

The device is delivered directly into the heart through a catheter inserted in the femoral vein, sent up through the femoral vein with a catheter, and placed right inside the heart. The little device will perform the same function as the traditional system.

"It's just a phenomenal development" said Dr. Bill Katsiyiannis with the Minneapolis Heart Institute Foundation. He said that eliminating the lead and pocket for the device.represents a huge advance. In Austria, the head of cardiology at Linz General Hospital also spoke about the advantages in Micra TPS. " Because of its small size and unique design, the Micra TPS can be introduced directly into the heart via a minimally invasive procedure, without the need for leads," said Clemens Steinwender, M.D., head of cardiology at the Linz General Hospital in Linz. "The combination of this novel technology with a transcatheter procedure can benefit patients by potentially reducing pocket or lead complications and recovery times observed with traditional surgical pacemaker implants."

The pacemaker delivers electrical impulses that pace the heart through an electrode at the end of the device. Once positioned, the pacemaker is securely attached to the heart wall and can be repositioned if needed.

The Micra TPS is an investigational device worldwide. A clinical trial will enroll up to 780 patients at approximately 50 centers. Initial results from the first 60 patients, followed up to three months, are anticipated in

the second half of 2014.

More information: cardiovasculardevices.medicald … stria-101213-4143133
www.kare11.com/story/news/2013 … t-pacemaker/3981451/
newsroom.medtronic.com/phoenix … ID=1883208&highlight