

India Medtronic launches world's smallest pacemaker to treat heart block

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According to the company, the device is 93 per cent smaller than conventional pacemakers

India Medtronic, a wholly-owned subsidiary of Medtronic, announced the launch of Micra AV - a miniaturised, fully self-contained pacemaker that delivers advanced pacing technology to atrioventricular (AV) block patients via a minimally invasive approach. The device is the first pacemaker that can sense atrial activity without a lead or device in the upper chamber of the heart.

Identical in size and shape to the original Micra Transcatheter Pacing System (TPS), Micra AV is attached to the heart with small tines and delivers electrical impulses that pace the heart through an electrode at the end of the device. Micra AV has several additional internal atrial sensing algorithms which detect cardiac movement, allowing the device to adjust pacing in the ventricle to coordinate with the atrium, providing "AV synchronous" pacing therapy to patients with AV block.

"With Micra AV, patients suffering from complete heart block have the option for a leadless device that is delivered through a minimally invasive procedure and is cosmetically invisible to the patient," said Abhishek Bhargava, Director, Cardiac Rhythm Management, Cardiac Ablation & Diagnostics at Medtronic India.

Micra AV received United States Food and Drug Administration approval based on data from the MARVEL 2 (Micra Atrial Tracking Using A Ventricular accELerometer) study, which evaluated the safety and effectiveness of accelerometer-based atrial sensing algorithms. The study evaluated the ability of the Micra's internal sensor to monitor and detect atrial contractions and enable coordinated pacing between the atrium and ventricle, thereby providing AV synchrony. The study's primary safety objective was also met, with no pauses or episodes of pacing-induced tachycardia reported during algorithm mediated AV synchronous pacing.