Medical Xpress

Detailed guidance on natural pacemaker method published today

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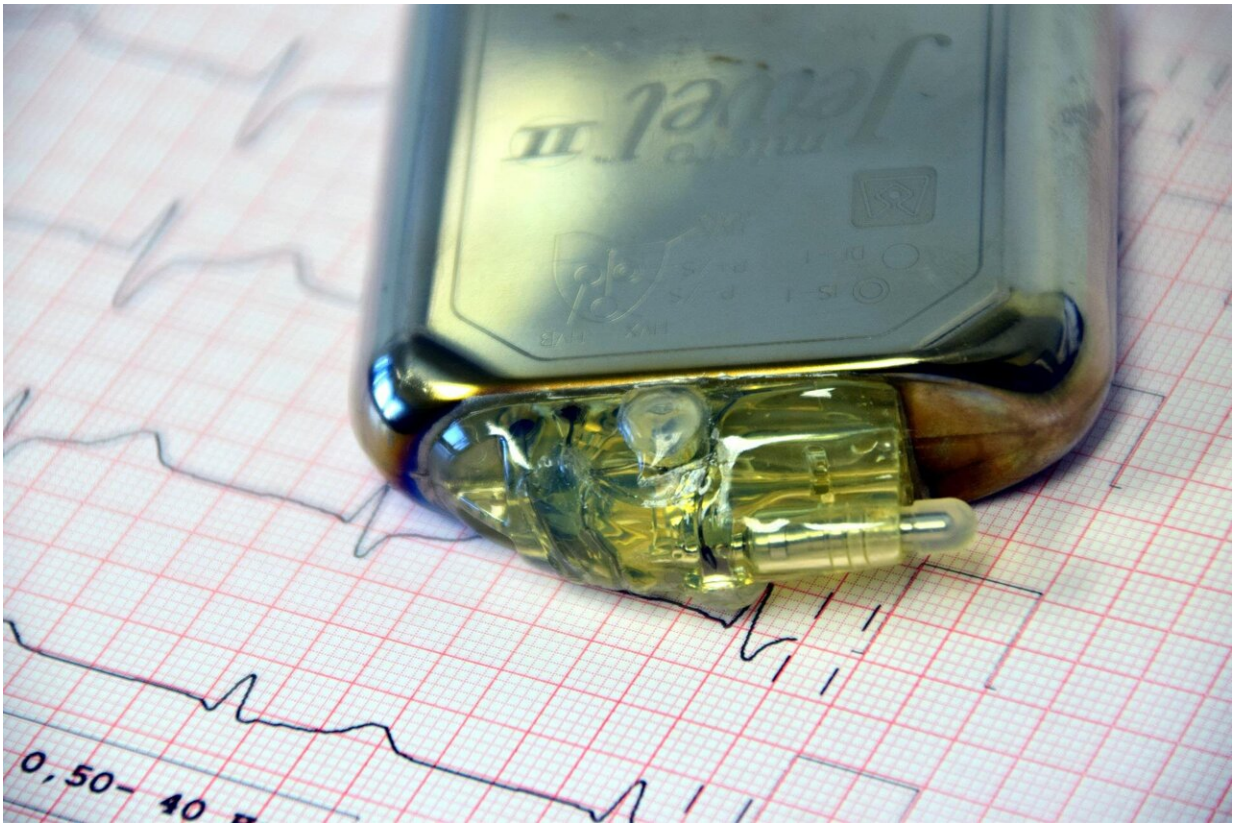

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An international consensus statement on the safest and most effective way to implant a pacing system that mimics the heart's normal function is published today in *EP Europace*, a journal of the European Society of

Cardiology (ESC). The document is being launched at the EHRA Conduction System Pacing (CSP) Summit and will be discussed during EHRA 2023, a scientific congress of the ESC.

"It is estimated that 1.4 million patients worldwide will receive a pacemaker in 2023," said first author Professor Haran Burri of the University Hospital of Geneva, Switzerland. "Approximately half of those patients could potentially benefit from conduction system pacing, which connects to the body's own electrical cables and is therefore more physiological than conventional methods."

Pacemakers are used to regulate the heart rate in people whose heart beats too slowly, mainly because of a block in the electrical connection between the upper (atria) and lower (ventricles) levels of the heart (called atrioventricular block). Professor Burri said, "Standard pacing electrically activates a single point in the ventricle, rather than the whole heart simultaneously, leading to uncoordinated contraction in different areas of the heart. In around one-fifth of patients this can damage the heart and lead to heart failure. Conduction system pacing places leads directly along different sites of the heart's intrinsic conduction system, leading to simultaneous contraction across the heart."

Conduction system pacing may also benefit patients with heart failure whose left ventricle is weak and not pumping properly due to an electrical disorder (called left bundle branch block), making it contract out of sync with the right ventricle. The current treatment is cardiac resynchronization therapy (CRT), which delivers biventricular pacing to coordinate contractions, but it does not work in all patients and requires a more complex system than a conventional pacemaker.

Conduction system pacing was mentioned as a new method in the 2021 ESC pacing guidelines but it was acknowledged that randomized trial evidence is needed. Use of the technique is growing, with thousands of

procedures performed worldwide to date. An EHRA survey of European physicians published last year reported that the main reason for not adopting the method was lack of training. "Until now, there was no consensus on how to carry out this procedure and check that it had been done correctly," said Professor Burri. "This document provides a standardized approach agreed by worldwide experts which should optimize success rates and avoid complications. The guidance will be useful for physicians learning the method and those wishing to improve their technique. The increase in expertise will also enable large, high-quality randomized trials to be conducted."

The paper describes the implantation technique for two types of pacing: His bundle pacing and left bundle branch area pacing, which are named according to the target site of the heart's conduction system. Professor Burri said, "With His bundle pacing, a simple test can be done to check that the electrical connection has been achieved. Left bundle branch area pacing requires more detailed checks and the paper outlines what physicians should aim for and what good pacing looks like."

Advice is given on how to achieve successful lead implantation, and how to avoid and deal with complications. The document is accompanied by 30 figures with detailed illustrations, 11 videos, an Executive Summary published as a separate paper, and a Key Messages App, all of which are openly accessible and provided at no cost to the worldwide medical community.

Professor Burri said, "Conduction system pacing is entering mainstream clinical practice and, based on limited data, the therapy has a promising future. It is crucial that physicians adopt a standardized approach to ensure that it is delivered safely and effectively. Today's consensus paper is set to become the reference on how to perform this procedure."

The international consensus statement was developed by the European

Heart Rhythm Association (EHRA), a branch of the ESC, and endorsed by the Asia-Pacific Heart Rhythm Society (APHRS), Canadian Heart Rhythm Society (CHRS) and Latin-American Heart Rhythm Society (LAHRS).

More information: Haran Burri, EHRA clinical consensus statement on conduction system pacing implantation. Endorsed by the Asia-Pacific Heart Rhythm Society (APHRS), Canadian Heart Rhythm Society (CHRS) and Latin-American Heart Rhythm Society (LAHRS)., (2023). DOI: 10.1093/europace/euad043 Haran Burri et al, EHRA clinical consensus statement on conduction system pacing implantation: endorsed by the Asia Pacific Heart Rhythm Society (APHRS), Canadian Heart Rhythm Society (CHRS), and Latin American Heart Rhythm Society (LAHRS), *EP Europace* (2023). DOI: 10.1093/europace/euad043

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