

First study of heart 'maps' for kids could help correct rapid rhythms

July 23 2012

The first study of a procedure to make three-dimensional "maps" of electrical signals in children's hearts could help cardiologists correct rapid heart rhythms in young patients, according to new research presented at the American Heart Association's Basic Cardiovascular Sciences 2012 Scientific Sessions.

Children with the condition atrioventricular nodal reentrant tachycardia, or AVNRT, suffer from disruptions in the heart's electrical system that cause sudden rapid [heart rates](#). Patients have been successfully treated with cardiac ablation, in which the [abnormal tissue](#) that causes the condition is destroyed by freezing (cryoablation).

It can be a difficult procedure because every patient may have a different area of abnormal tissue causing the arrhythmia, so low-voltage mapping is used to create a profile of high- and low-voltage areas of tissue to guide ablation. However, no research has been done on children until now.

"This is the first study to look at this technique in [pediatric patients](#)," said Lindsey Malloy, D.O., lead researcher and a cardiology fellow and researcher at University of Iowa Children's Hospital in Iowa City. "It has the potential to improve ablation success rates."

Malloy and her colleagues created three-dimensional voltage maps of the right atrium (upper chamber of the heart), using electrical recordings from inside the heart. They also identified a bridge of low voltage signals

surrounded by even lower voltage tissue, a "saddle", or voltage bridge indicating where there was reduced [electrical activity](#).

Twenty-nine patients between the ages of 7 and 20 were included in the study.

Physicians performed guided cryoablation of the abnormal electrical pathway using the bridge identified by voltage mapping. In 25 of 29 patients, there was an adequate voltage bridge to allow guided ablation, while the successful ablation site was within the first three lesions in 15 out of 25 patients.

"This use of voltage-guided mapping of this voltage bridge in AVNRT appears to be both safe and very effective in children while providing for more precise electrically guided ablation," Malloy said.

Provided by American Heart Association

Citation: First study of heart 'maps' for kids could help correct rapid rhythms (2012, July 23) retrieved 12 May 2024 from <https://medicalxpress.com/news/2012-07-heart-kids-rapid-rhythms.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--