Catheter target determination for treating Ventricular Tachycardia

Technology #1183

Ventricular tachycardia is a disorder in which the heart beats at a rapid pulse rate, causing irregular blood irrigation to the rest of the body. This illness typically occurs after a heart attack, which leads to cell death to a localized region of the heart. A successful treatment for this condition involves the introduction of a catheter into a patient artery and the ablation through radiofrequency of the dead tissue. The major drawback of this technique is the inability to precisely target the correct area. This technology describes a method for localizing the shape and location of the target site. This technology is advantageous given that the location of the target site can be obtained by monitoring the patient’s normal rhythm of the using common monitoring methods.

Mathematical models improve location and shape estimation for radiofrequency ablation

This technology precisely localizes heart tissue to be ablated by measuring normal heart rhythm. Using mathematical methods, patients’ electrocardiogram signals are used to target dead tissue. This technology does not require signal acquisition directly from the heart’s surface, an improvement over previous methods. By targeting the ablation site quickly and accurately, this technology can greatly improve the success of radiofrequency ablation. The technology has been tested using electrograms from canine hearts and been shown to be highly accurate in mapping and targeting ablation areas.

Lead Inventor:

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Applications:

- Method for localizing candidate ablation sites.
- Method for diagnosing heart conditions such as ventricular tachycardia.
- Research tool to understand electrical conduction in the heart.
Advantages:

- Facilitates catheter targeting, increasing radiofrequency ablation success rate.
- Does not require signals from the surface of the heart.

Patent information:

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Related Publications:


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