

ASSISTANCE IN LOCATING THE ACCESSORY PATHWAY IN WPW SYNDROME

Wolff-Parkinson-White syndrome / electrocardiogram / accessory pathway / cardiology



CONTEXT

Wolff-Parkinson-White (WPW) syndrome is a cardiac disorder due to the abnormal presence of an additional electrical conduction pathway, called the accessory pathway, between the atria and the ventricles. This syndrome is a common cause of tachycardia attacks. It can be diagnosed with an electrocardiogram or electrophysiology study by introducing probes into the heart. If in the first case the diagnosis is not always effective,* in the second one it consists of an invasive examination for the patient. The main treatment of WPW syndrome is the elimination of the accessory pathway by radiofrequency catheter ablation.

DESCRIPTION

Recently, researchers at the Le2i laboratory have developed an automated algorithm to accurately identify the presence of the accessory pathway for an accurate and effective diagnosis of WPW syndrome. The interest of the approach is to locate precisely the accessory pathway in an automated way from a standard 12-lead electrocardiogram (ECG). This application will assist in performing the probe-based invasive endocavitary electrophysiology and ablation procedure.

The prototype software has been validated on a first group of 76 patients with the syndrome (all genders and ages), and an additional validation test is currently underway on a larger group of patients (385).

COMPETITIVE ADVANTAGES

- It allows automated, real-time and non-invasive assistance
- Precise location of the accessory pathway: which may offer non-invasive ablation treatment in the future
- Integrable into a standard electrocardiograph



Markets & applications

Medicine - cardiac diagnosis :

- ❖ Assistance in searching the accessory pathway from an ECG
- ❖ Location of the accessory pathway to facilitate radiofrequency catheter ablation
- ❖ Telemedicine: remote diagnostics



Development stage

Prototype validated on a group of 76 patients with WPW syndrome



Research team

Laboratory "Electronique, Informatique et Image" (Le2i)
CNRS - University of Burgundy



Intellectual property

Software registered at the APP
the March 5th, 2018



Target partnership

Software licensing

CONTACT-US

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*Journal of Cardiovascular Electrophysiology, Vol. 10, pp. 1340-1349, October 1999