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Supraventricular Tachycardia Detected by Smart Watch

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A 23-year-old woman with no prior history of illness visited the outpatient clinic complaining of palpitation which had occurred 3 years ago. It was accompanied with chest discomfort, shortness of breath, and a recent increase in frequency. The electrocardiography (ECG) which was checked at the outpatient clinic showed normal a sinus rhythm without any abnormalities. However, her smart watch (Apple watch series 5, Apple Inc, Cupertino, CA, USA) recorded regular narrow QRS tachycardia of her heart rate at 240 beats per minutes (BPM) without a definitive, discrete P wave when she had felt a sudden onset palpitation (Fig. 1A). Transthoracic echocardiography showed good left ventricular systolic function with normal cardiac chamber size. The patient subsequently underwent an electrophysiologic study in which regular narrow QRS tachycardia was induced with programmed ventricular extrastimuli (Fig. 1B). Lead I of the induced tachycardia was similar with the ECG recorded by the Apple watch. Electrophysiologic mapping were consistent with atypical atrioventricular nodal reentrant tachycardia. Therefore, the slow pathway was ablated at the posterior septum, at which point, finally, the tachycardia was no longer induced.

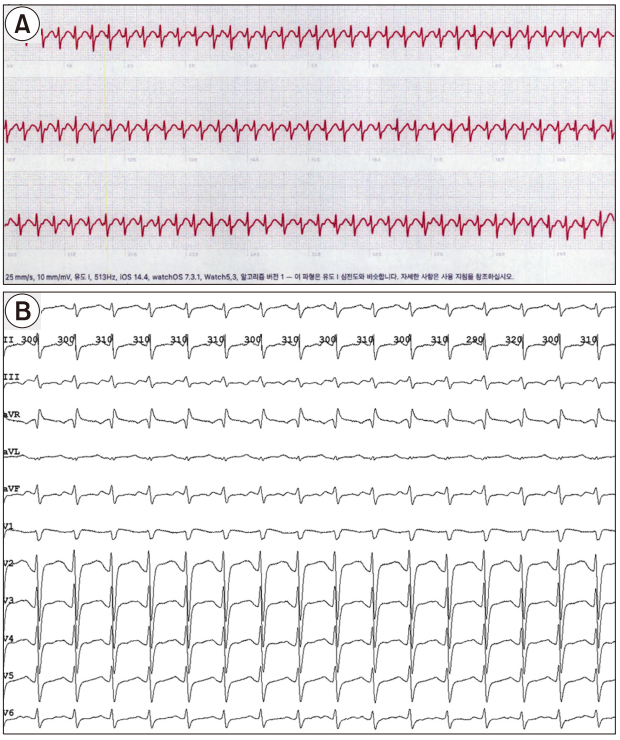

FIG. 1. (A) Electrocardiography (ECG) documented by Apple watch (Apple Inc, Cupertino, CA, USA). It demonstrated regular narrow QRS tachycardia, heart rates 240 beats per minutes. (B) A twelve leads ECG of the regular narrow QRS tachycardia which was induced during electrophysiologic study. It demonstrated long RP interval with cycle length of 310 ms.

As a clinician it is difficult to obtain an ECG consistent with the symptoms. Nowadays, wearable ECG monitoring devices are use has become widespread.[1] With ever-increasing penetration of wearable monitors in the general population, there will be a larger volume of data available to clinicians to help diagnose and manage arrhythmias in their patients.[2-4] In addition, much of this data will be able to focus on the atrial fibrillations. However, with meticulous analysis of the ECG obtained by wearable devices might also be helpful to detect the supraventricular tachycardia other than atrial fibrillation, as in the present case.

CONFLICT OF INTEREST STATEMENT

None declared.

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