

CASE IMAGE

AVNRT captured by smartphone ECG device

Akıllı telefon EKG cihazı ile kaydedilmiş AVNRT

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The documentation of supraventricular tachycardias can be problematic with conventional ambulatory rhythm recorders because of their episodic and self-terminating nature. A 69-year-old female was referred to our hospital for further evaluation

of her long-standing (5 years) episodic palpitation attacks, which were described by the patient as rapid, regular heartbeats with sudden onset and termination. The patient suffered neck pulsation during palpitation, suggesting “frog sign.” Her physical examination, baseline electrocardiogram, and echocardiogram were unremarkable. Multiple 24-hour rhythm Holter monitoring attempts were unable to document any specific arrhythmia. She was finally able to capture an episode with a commercially available, smartphone-based ECG device and application (AliveCor Kardia, Inc, version 5.8.0.1608, San Francisco, CA, USA), which allows to capture a single lead (lead I) rhythm strip by touching two electrodes with fingers of left and right hands for 30 seconds (Figure 1). She underwent an electrophysiologic (EP) study in our institution, which revealed concentric and decremental ventriculoatrial conduction. Atrio-His (AH) jump and dual echo were observed, and a typical atrioventricular nodal reentrant tachycardia (AVNRT) was induced during programmed atrial stimulation. The His bundle refractory ventricular premature complex (VPC) during tachycardia excluded a septal accessory pathway. The slow pathway region around coronary sinus ostium was ablated. After ablation, no AH jump and echo were seen, and an AVNRT could not be induced. Figure 2 shows the ECG tracing of the patient during follow-up. This case illustrates how smartphone-based technology can extend our diagnostic capabilities and

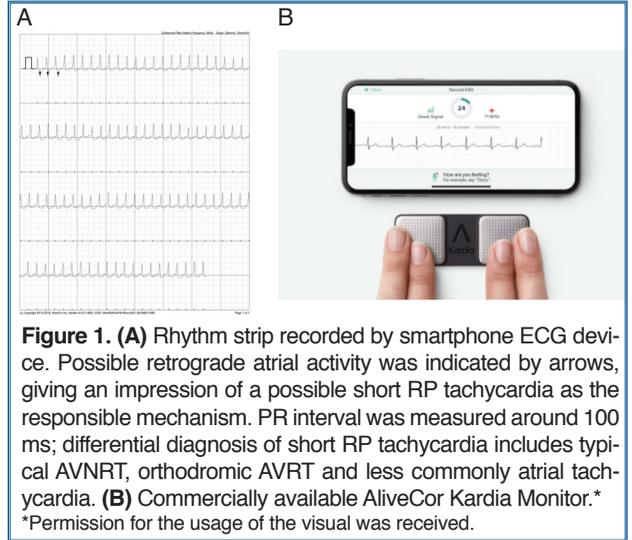


Figure 1. (A) Rhythm strip recorded by smartphone ECG device. Possible retrograde atrial activity was indicated by arrows, giving an impression of a possible short RP tachycardia as the responsible mechanism. PR interval was measured around 100 ms; differential diagnosis of short RP tachycardia includes typical AVNRT, orthodromic AVRT and less commonly atrial tachycardia. **(B)** Commercially available AliveCor Kardia Monitor.*
*Permission for the usage of the visual was received.

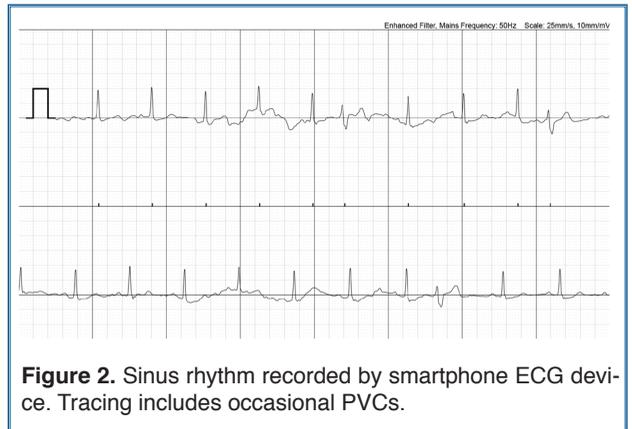


Figure 2. Sinus rhythm recorded by smartphone ECG device. Tracing includes occasional PVCs.

provide the patients with new diagnostic options complementary to the healthcare system. Although many of these systems are not capable of recording uninterrupted long-term rhythm tracings, they are able to record on-demand and can be used in patients with infrequent symptoms that cannot be detected by conventional diagnostic methods.

Informed consent was obtained from the patient for the publication of the case image and the accompanying images.

