

Image in cardiology

Smartwatches and ischemic heart disease. A future possibility?

Relojes inteligentes y cardiopatía isquémica. ¿Opción de futuro?



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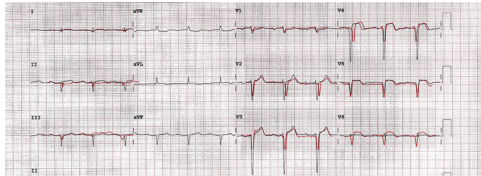


Figure 1.

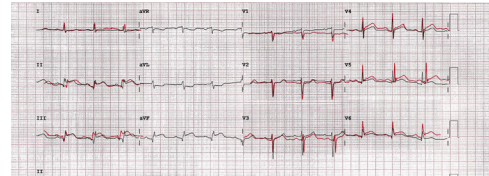


Figure 2.

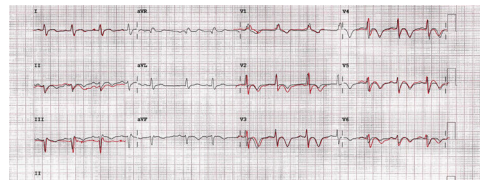


Figure 3.

In myocardial infarction, especially in patients with ST-segment elevation, the prognostic importance of early treatment is well established. Therefore, in patients with compatible symptoms, performing and interpreting an electrocardiogram early is essential.

Several wearable devices have recently been validated for the diagnosis of prevalent asymptomatic/paucisymptomatic diseases, which is even more important in the current situation, in an attempt to avoid patients attending their health care center in person where possible. In cardiology, smartwatches have been demonstrated to have a sensitivity of more than 80% for the detection of atrial fibrillation through algorithms. However, there are no validation studies for ischemic heart disease, publications on this subject being limited to consecutive case series or isolated clinical cases.

We present recordings from 3 patients admitted to the coronary care unit, who gave signed informed consent prior to participation. A 12-lead electrocardiogram was obtained and was superimposed with a multichannel recording obtained via smartwatch and compatible software (iWatch S6/Health, Apple Inc., USA). These cases were an anterior infarct with residual ischemia (figure 1), an inferior infarct (figure 2), and a tako-tsubo syndrome (figure 3). Recordings were obtained in the limb leads I (left wrist-right hand), II (left ankle-right hand), and III (left ankle-left hand), with the crown of the watch acting as a positive electrode. For the precordial leads the classic positions of V₁-V₆ were used. Acceptable superimposition was obtained.

The use of this technology could facilitate the diagnosis in out-of-hospital care settings if conventional cardiology equipment is not available.

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AUTHORS' CONTRIBUTIONS

All the authors participated equally in developing the concept and designing the manuscript, data collection and interpretation, writing the draft, review of intellectual content, and approval of the final version for publication.

CONFLICTS OF INTEREST

The authors declare no potential conflict of interest in relation to this article.

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