A somnolent man found in the park

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Answer to the Rhythm Puzzle

The ECG shows shivering artefacts, most likely sinus bradycardia, QRS/QT prolongation, and J waves (Osborn waves), which are typical ECG features found in severe hypothermia. Our patient had a body temperature of 31°C.

The Osborn wave (or J wave) was named after John J Osborn, who described it in his article on experimental hypothermia in the American Journal of Physiology in 1953 [1]. It refers to an extra deflection immediately following the QRS complex. It is thought to be the electrocardiographic reflection of a voltage gradient between

Fig. 1 ECG after normalisation of the temperature

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epicardium and endocardium, caused by increased epicardial potassium current. Osborn waves become more prominent as the body temperature decreases, they disappear after the temperature has normalised, as in our case (Fig. 1). The differential diagnosis of Osborn waves includes hypercalcaemia, brain injury, myocardial infarction, Brugada syndrome and early repolarisation [2].

References

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