

Bidirectional ventricular tachycardia due to hypokalaemia

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DESCRIPTION

Bidirectional ventricular tachycardia (BDVT) is a regular ventricular tachyarrhythmia (VT) with two different QRS morphologies alternating at a rate typically between 140 and 180 bpm.¹ There are not many known related causes and the most common include digoxin toxicity, catecholaminergic polymorphic VT, myocarditis and myocardial infarction.^{2,3}

We report a case of an 81-year-old woman, with a known history of diabetes mellitus and hypertension, admitted at the emergency

department for prostration, diarrhoea and vomiting. Biochemistry tests on admission revealed severe ionic deficit, with a potassium level of 1.7 mmol/L. No serum digoxin levels were measured because there was no history of therapy with this drug. The 12-lead ECG (figure 1) revealed a BDVT pattern with a heart rate of 153 bpm. Endovenous potassium replacement was initiated with an immediate ECG pattern normalisation (figure 2). The authors present a case of BDVT, a rare arrhythmia with a cause not previously described.

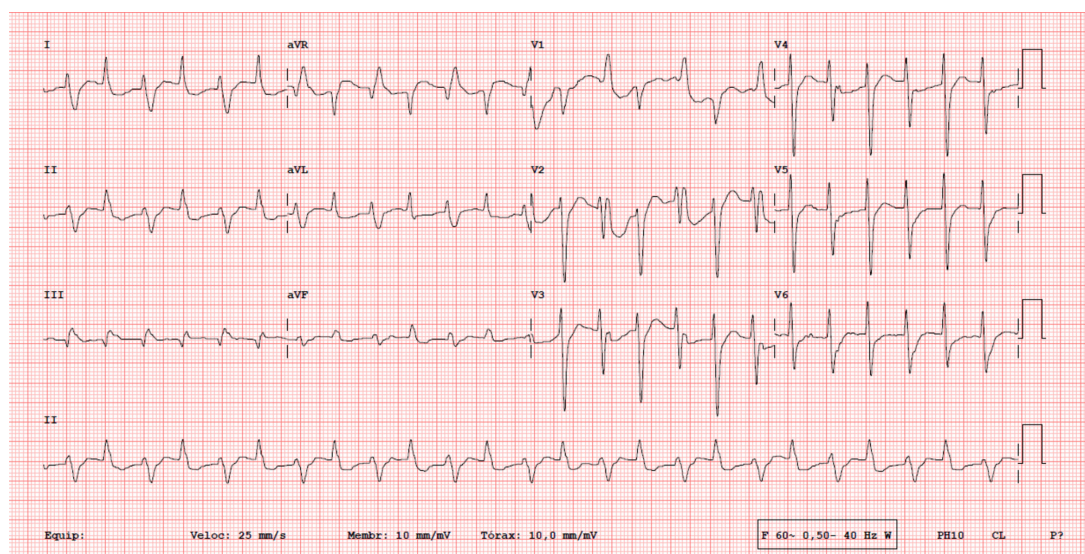


Figure 1 Bidirectional ventricular tachycardia.

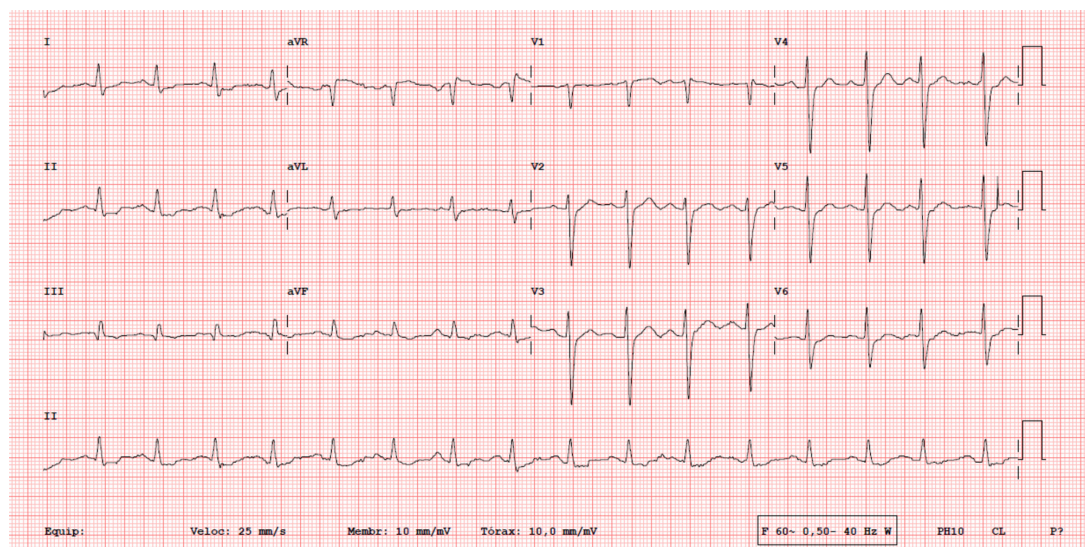


Figure 2 Sinus rhythm.



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Learning points

- ▶ Bidirectional ventricular tachycardia (BDVT) is a rare form of ventricular arrhythmia with a limited number of known causes described in the literature.
- ▶ As described in this case, hypokalaemia was assumed as the cause of BDVT.
- ▶ When confronted with this ECG pattern, hypokalaemia should be part of the differential diagnosis.

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