

What is the Diagnosis?

CASE PRESENTATION

A 54 years old woman patient, with complaints of sporadic palpitations, without medication and with a structurally normal heart, presents itself in the clinic where the electrocardiogram presented in Fig. 1 is realized. Fig. 2 corresponds to the prolonged monitoring of the D2 derivation with sensitivity 2N.

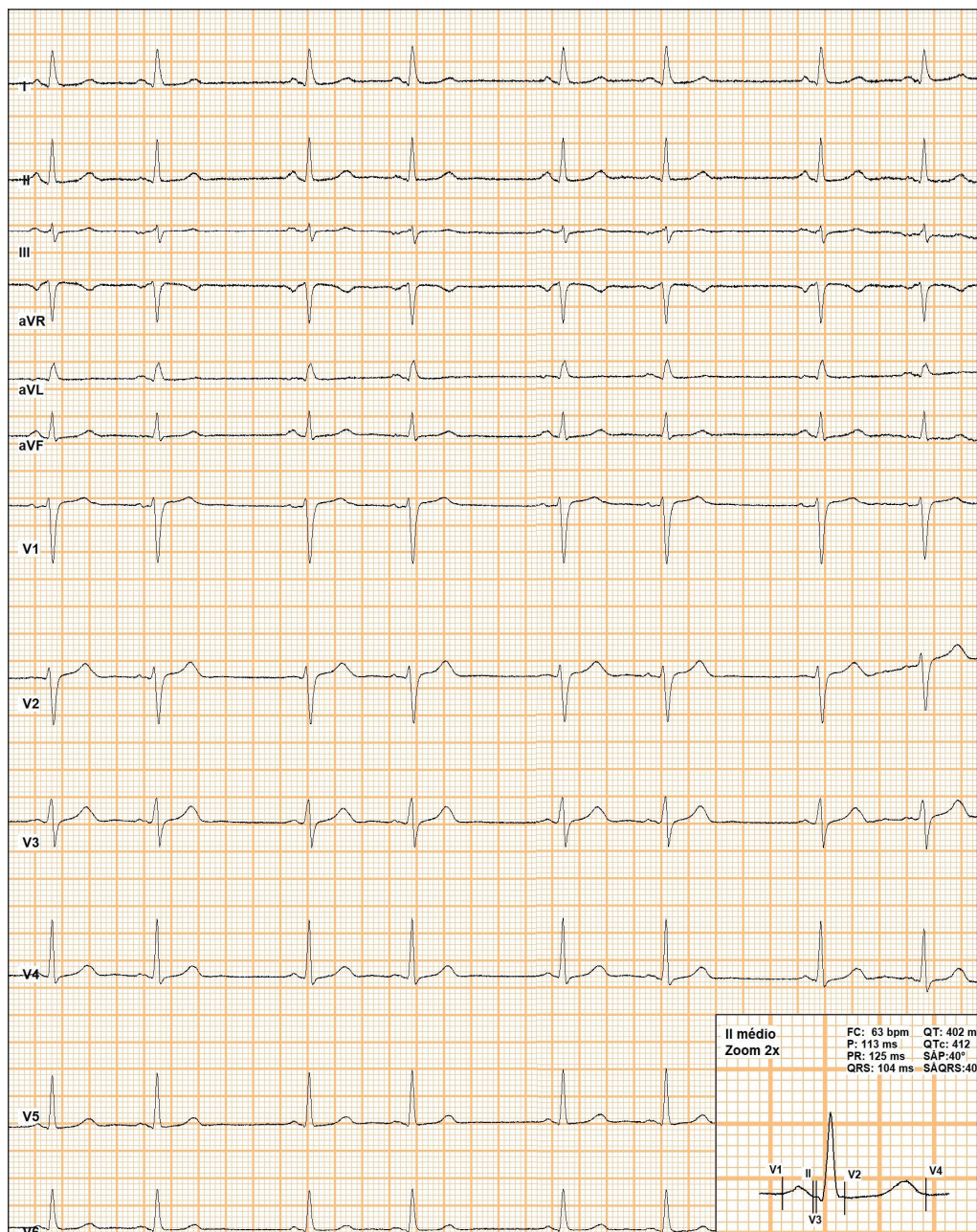


Figure 1. Electrocardiogram of the patient.

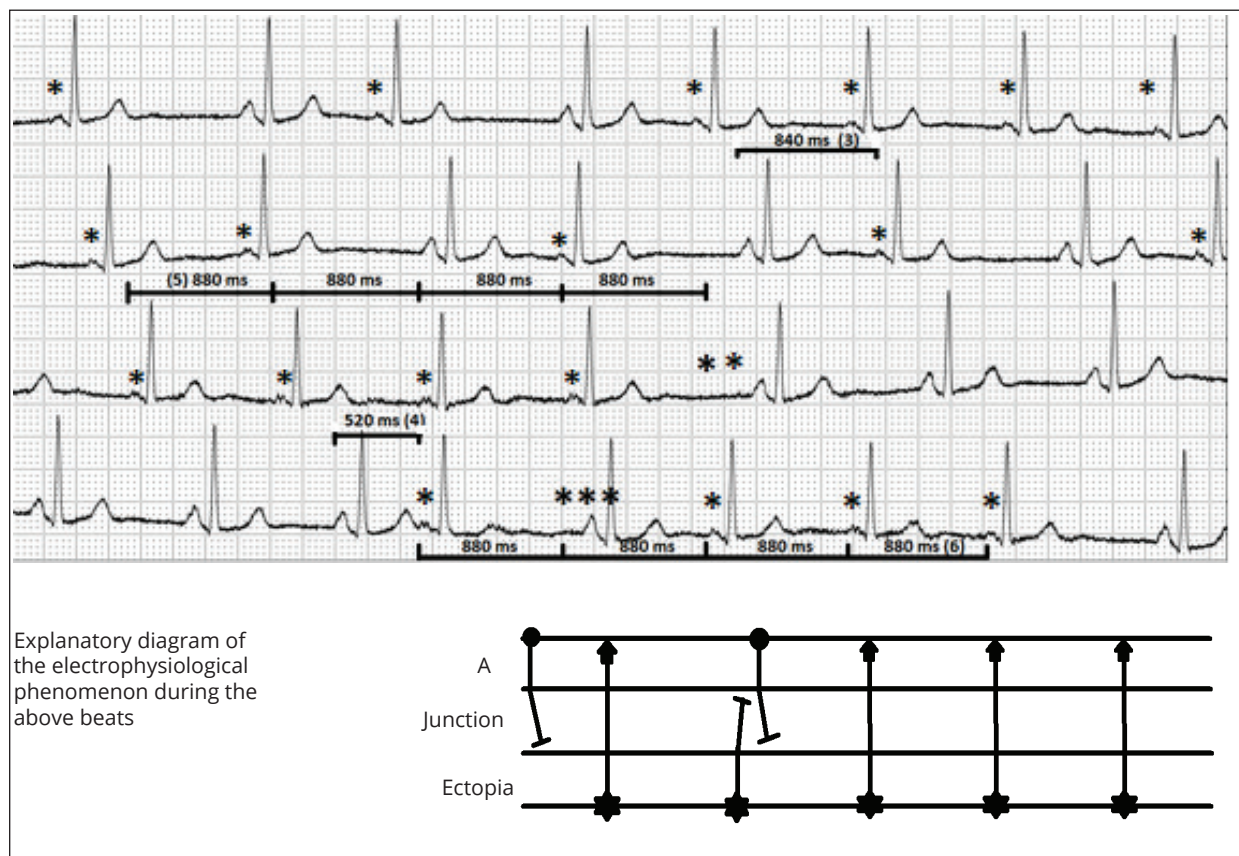


Figure 2. Prolonged monitoring of the D2 derivation with sensitivity 2N.

RESPOSTA

On the 12 derivations electrocardiogram (EKG) (Fig. 1), a sinus rhythm can be visualized with atrial bigeminism, and the atrial extrasystole presents a long coupling interval in relation to the previous P wave. For a better understanding of the case, monitoring with long D2 and 2N sensitivity was realized (Fig. 2). In this monitoring, the atrial ectopias (* in Fig. 2) begin to show coupling variations in relation to the previous signal wave P (3 and 4) and begin an alternation with an ectopic atrial rhythm (5 and 6) that presents the same morphology of the extrasystolic beats, suggesting that the origin is the same in both situations. Still in Fig. 2, observing the sequence (5) of ectopic beats, rhythmicity with a frequency of 880 ms is observed interrupted by an absence of ectopic beat (** in Fig. 2) followed by sinus rhythm with a frequency lower than of the ectopic focus. In sequence 6, an ectopic beat is followed by sinus beat, returning to the ectopic rhythm. Due to the rhythmicity of the ectopias, it is observed that in some moments this shows loss of atrial capture, which evidences a phenomenon of parasystole with intermittent output block.

Parasystole arises due to the existence of one or more cardiac cells with automatic properties protected from the basic rhythm by an input block. In this case, this is observed because the sinus beat does not restart the ectopic focus cycle (Fig. 2). The dominant pacemaker is unable to excite this area. Concomitantly, there is a variable and intermittent output block, which prevents the depolarizing impulse there originating from reaching the underlying musculature on several occasions. It is also possible to suggest that the focus of the parasystole is in the right atrium region, the appearance of the P wave morphology of the ectopic focus with that of the P wave in sinus rhythm, but with a lower amplitude in the inferior leads, suggesting a location below the node.¹

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REFERENCES

1. Josephson ME; Wellens JH. Tachycardias: Mechanisms, diagnosis, treatment. Philadelphia, PA: Lea & Febiger; 1984 p.287-30.

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