

## Premature Ventricular Contractions Causing Sinus Arrhythmia and Alternating P-R Prolongation

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A 68-year-old male patient was referred because of an irregular heart rhythm. The electrocardiogram (Fig. 1) showed sinus bradycardia with interpolated premature ventricular complexes (PVCs) occurring in a trigeminal pattern.

There are two interesting observations in Figure 1. First, there is an alternating pattern of P-P intervals, with intervals of 1,320–1,340 ms whenever there is a PVC between two conducted sinus beats and longer P-P intervals of 1,420–1,470 ms when there is not. Secondly, there is also an alternating pattern of P-R intervals, with a P-R interval of 280 ms fol-

lowing a PVC, compared with a shorter P-R interval of 200 ms in the absence of a preceding PVC.

The alternating pattern of cycle length changes in sinus rhythm is most likely to be caused by baroreceptor-mediated phasic changes in vagal tone that are well-known to cause ventriculophasic sinus arrhythmia in patients with high-grade atrioventricular (AV) block. In this case, whenever there was a PVC between two QRS complexes, the baroreceptor reflex presumably resulted in an increase in vagal tone and a phasic increase in the following P-P interval. The alternating pattern of P-R intervals is explained by concealed retrograde atrioventricular nodal penetration by the PVCs. However, it also is possible that the same changes in vagal tone that affected the P-P intervals also affected atrioventricular nodal conduction, as previously described.<sup>1</sup>

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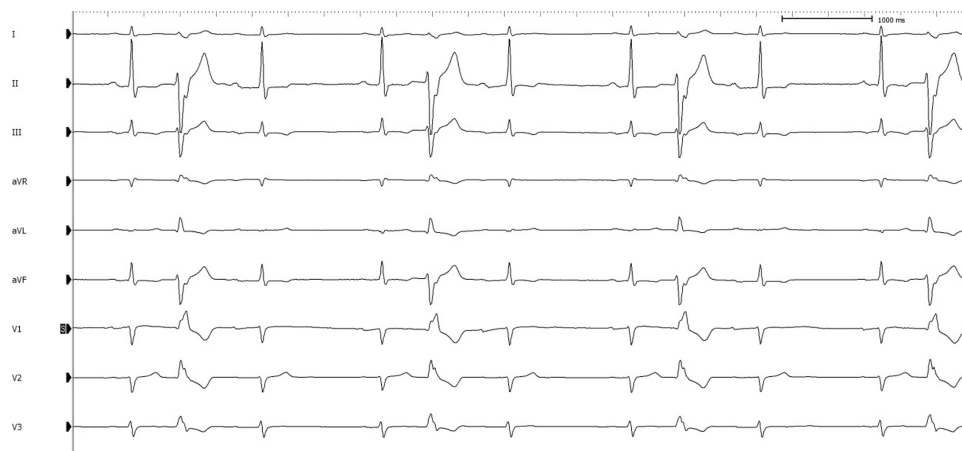


Figure 1.