Interesting electrocardiogram

THE SIGNIFICANCE OF PREMATURE BEATS

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This electrocardiogram from a 55-year-old man (Figure One) shows a basic sinus rhythm with some sinus arrhythmia—see V1 and V2 in Figure Two—interrupted by frequent premature beats. These premature beats have a wide QRS which varies in form (see in Figure Two where there are two in a row and one more premature beat) and which has an initial part of the QRS in the same direction as the initial part of the QRS of the sinus beats. Furthermore there is an RR' in V1-V3 (see Figure Two). The suspicion is great, therefore, that these are not ventricular premature beats, but are supraventricular with aberrancy of the right bundle branch block type. A hunt for P waves is complicated by the fact that the sinus P wave and the junctional P wave which falls after the wide QRS are summated or fused and combined. See V2 with arrow in Figure Two. In V5 and V6 the two successive premature beats have different degrees of aberrancy and, hence, this confirms the supraventricular nature of these beats (Figure Two).

The applicant performed a treadmill test and during this test the number of premature beats decreased markedly, the junctional P waves became apparent and the right bundle branch block disappeared (Figure Two). This confirms that the premature beats are not ventricular. The treadmill test, however, showed ST depressions, not during exercise (Figure Two), but during the four to eight minutes of the recovery period (Figure Three).

The question here arises as to the significance of the junctional premature beats in such a man. They would cause no concern if he had a normal treadmill test. In the presence of a suspicion of silent coronary insufficiency a Holter monitor is indicated. If the premature beats are not numerous over a 24-hour period, the rating for coronary insufficiency need not be increased for these beats.

Figure One. 55-year-old man. Electrocardiogram shows basic sinus rhythm (with some sinus arrhythmia- lead II) interrupted by frequent premature beats.
Figure Two. Treadmill test. During treadmill test the number of premature beats decreased, junctional P waves became apparent, and right bundle branch block disappeared.

Figure Three. Recovery period. ST segment depression is apparent.