Interesting Electrocardiograms

Intermittent Pre-Excitation of the WPW Type with an Intraventricular Conduction Defect Seen During Normal Conduction (i.e., In the Non-Pre-Excitation)

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These two interesting tracings point out some of the problems of evaluating patients with pre-excitation. It is rare, of course, for the casual electrocardiogram to reveal intermittent WPW, but I think it is important to emphasize how much information can be culled from a few well examined beats. Of course, the advent of cardiac enzymes has more or less solved the problem of diagnosing myocardial infarction in the patient with pre-excitation, since the electrocardiogram is useless in this case. However, several cardiac abnormalities are also undiscoverable in the presence of WPW, and it would be worthwhile in the older patient to take several records trying to find intermittency of the pattern of WPW. In the case of this gentleman, he would be rated for insurance primarily at the level of the left anterior fascicular block and wide QRS.

This was a 69-year-old man with known Wolff-Parkinson-White syndrome and frequent tachycardias who entered the hospital for chest pain consequent to an unusually prolonged attack of supraventricular tachycardia.

The first tracing, taken on admission and after the tachycardia had ceased, shows intermittent pre-excitation of WPW type. The first two sinus beats in simultaneous leads I, II and III are followed by a third beat (marked with arrow) showing a short PR and long QRS and a delta wave - identifying the WPW pattern. The beats marked with arrows in the V-leads are also pre-excitation beats and characterize the by-pass tract (or Kent bundle) as located posteriorly (the old Type A).

The beats which do not show pre-excitation - those unmarked with an arrow - are, however, not normal. They show a marked left axis deviation (-60) suggesting a left anterior fascicular block and, furthermore, there is a wide QRS (0.11-0.12 sec.). The PR interval is normal. Usually the tracing is normal in non-pre-excitation beats in subjects with the WPW syndrome as the great majority have no other cardiac disorder.

Figure No. 1
In this 69-year-old man the intermittency of the pre-excitation allowed us to make a separate cardiac diagnosis of intraventricular conduction system disease as seen in the non-pre-excitation beats. No evidence of myocardial infarction was found using the measurement of cardiac enzymes for this determination.

The second tracing, taken the next day, as well as subsequent ECG's, showed only pre-excitation beats (delta waves are marked by small arrows in leads II and V4 where they are best seen), and hence could not be used to evaluate the presence of myocardial infarction. Pre-excitation produces abnormal ventricular activation and so the pre-excitation pattern distorts the QRS-T waves to such a degree that underlying infarction cannot be sensed.

Figure No. 2

You are invited to comment on these records. In addition, we will accept for publication electrocardiograms sent to this section of the Journal.