THE ELECTROCARDIOGRAM OF THE MONTH

The authors would be pleased to receive comment and controversy from readers in relation to explanations offered.

This electrocardiogram was obtained from a 58 year old white woman three days following an attack of severe pain in the chest. The pain did not radiate to the arms or any other characteristic area. There was no fever, no leucocytosis, and no increase in the sedimentation rate. She is not hypertensive and she does not have diabetes. The pain did not recur so that there was no opportunity to study an electrocardiogram made during pain at this time. Employing a poly-channel apparatus electrocardiograms were recorded before and during carotid sinus stimulation. This was repeated with a second set of precordial leads made one interspace higher on the chest.

Interpretation

The original record A is not dissimilar to many normal electrocardiograms, even though T3 is higher than T1 in the presence of slight left axis deviation. If aVL had been recorded it would have shown an inverted T wave, but this finding means no more than the fact that TIII is greater than TI and is also encountered in many normal electrocardiograms. When we increased cycle length by carotid sinus stimulation the T wave in lead I became inverted while in leads V4 and V6 it became diminished in height and notched. When precordial leads were repeated at a higher level carotid sinus stimulation resulted in a definite inversion of a previously low T wave in V4 (itself a suspicious finding).

The record shows the value of studying the T waves of the electrocardiogram at different cycle lengths and how this can be accomplished by carotid sinus stimulation. In normal hearts a similar change in cycle length usually causes no change in the T waves or a slight increase in their size. Such a change as is recorded here is certainly more diagnostic of ischemia than is the record A alone. At the same time it should be observed that a slight lowering of the T wave in the left precordial leads when it occurs in older persons with carotid sinus slowing may not be of clinical significance. One must also warn against mistaking changes due to change in the respiratory phase for changes due to cycle length change. Many persons are apt to take a deep breath when the carotid artery is compressed.

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