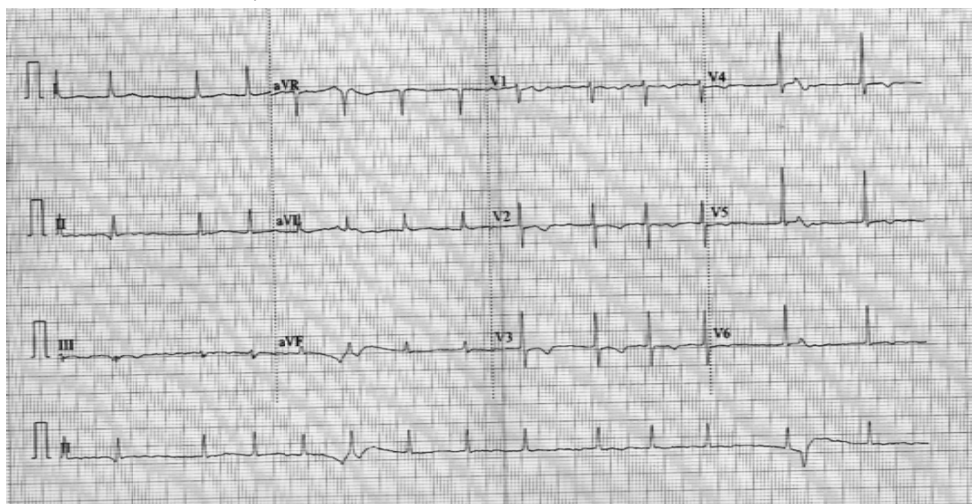


Atrial Divorce

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This is the routine ECG of an 86-year-old female with known CAD



Questions:

1. Describe all ECG findings?
2. Why is this clue?
3. What are the practical implications?

ECG Findings:

This ECG shows Atrial Fibrillation (AF) with Controlled Ventricular Response. Anterior T inversion suggests CAD as a cause of AF. The peculiarity in this ECG is 2 well-formed P waves (one criterion to diagnose AF is absent P waves). Well-formed P waves in AF can rarely occur if there is Atrial Dissociation where one atrium is dissociated from the other electrically. So the 2 atria have different depolarisation. The P wave (12th beat) is upright in V5, V6 indicating its origin from RA. Because both the P waves (5th and 12th beats) are inverted in inferior leads, they are arising from the inferior portion of RA. As these 2 P waves are different in configuration, they are arising from 2 different sites indicating bifocal origin. Here the LA is fibrillating and RA is producing intermittent P waves due to Atrial

dissociation. Usually, the atrial dissociation is due to blocking in the Bachman bundle which predominantly supplies LA. Another interesting point here is that although RA is not fibrillating, it is also not producing regular sinus P waves which may indicate disease of the sinus node. The 2 P waves which are coming from RA are one likely to be atrial escape beats.

Clue:

In this ECG atrial dissociation is indicated by AF in LA and Atrial escape beats from 2 sites of RA. Atrial Dissociation is otherwise called “Atrial Divorce” as RA and LA are divorced from each other and electrically acting independently.

Practical Implication:

In view of AF which is non-valvular, the patient should be put on Target specific oral anticoagulants (TSOACS) in addition to routine management of CAD. Although there is sinus node disorder it is not a concern now as the LA is controlling the ventricles through AF.