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ECG - The crucial information from VPDs

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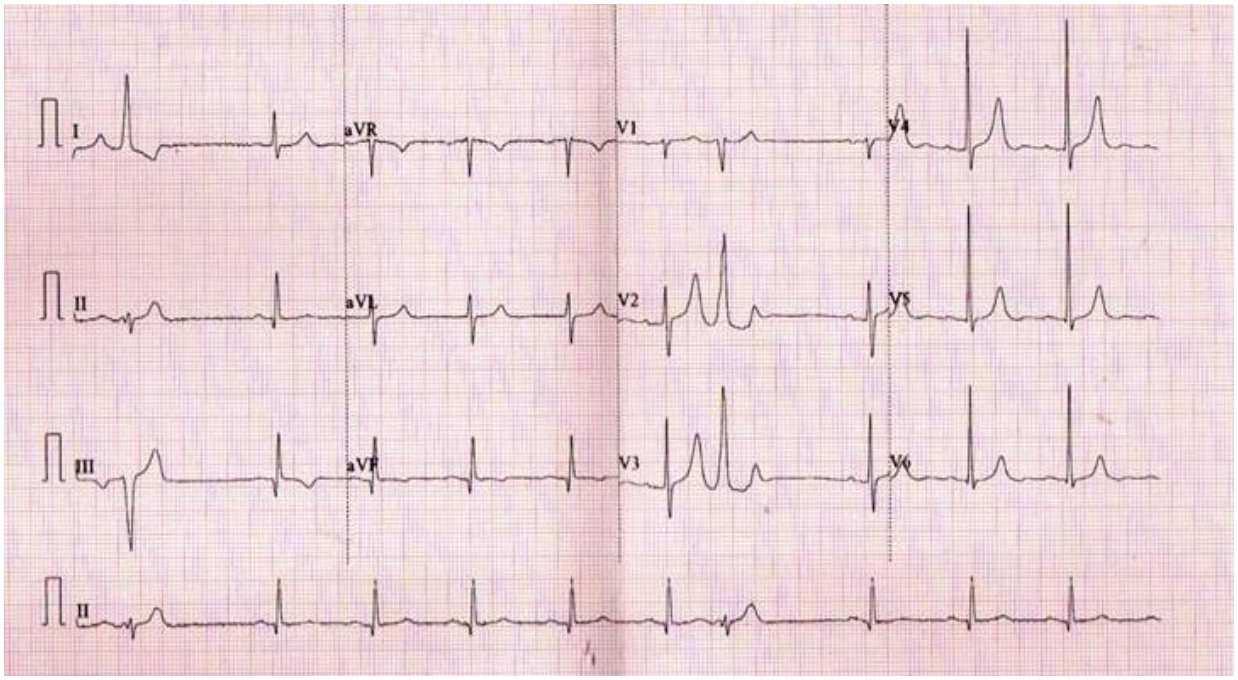

This is the routine ECG of 69-year-old diabetic female.

Questions:

1. What are the ECG findings?
2. What is special about the VPDs?
3. What are the practical implications?

Answers:

ECG findings:

This ECG shows sinus rhythm, RAD, high voltage QRS in left lateral leads with 2 VPDs. The VPD has negative QRS in V1 and superior axis. So, it is probably arising from RV inflow region. The interesting point is that VPD in the chest leads has homophasic ST T changes (ST ,T in the same direction of QRS). The VPD in limb leads, show classical secondary ST T changes.

The crucial information from VPDs:

The homophasic ST T change in VPD is a subtle sign of CAD. In this ECG, the VPD in chest leads shows homophasic ST T changes even though the sinus complexes in these leads are not showing significant CAD. The VPD in limb leads, arising from the same focus is not showing homophasic ST T changes indicating no significant ischemia in that region. So, the VPD in chest leads has unmasked CAD. In addition, in the rhythm strip, the T wave which follows VPD shows flattening which is once again a subtle sign of CAD(Post extra systolic ST T changes). This is named "Poor man's Exercise Test" by Levine. So, this extrasystole has given us extraordinary information about occult CAD, and hence it is "Extra ordinary systole".

Practical implications:

The VPD has unmasked CAD. So, although the patient is asymptomatic, she needs further evaluation for CAD like MSCT CAG and management with statins, antiplatelets and beta blockers.

References:

1. Harold D. Levine, M.B., Bernard Lown, M.D., Richird B. Streeper. The Clinical Significance of Postextrasystolic T-Wave Changes. Circulation, Volume VI , October 1954. 538-548.