What Do YOU Think?

Discussion

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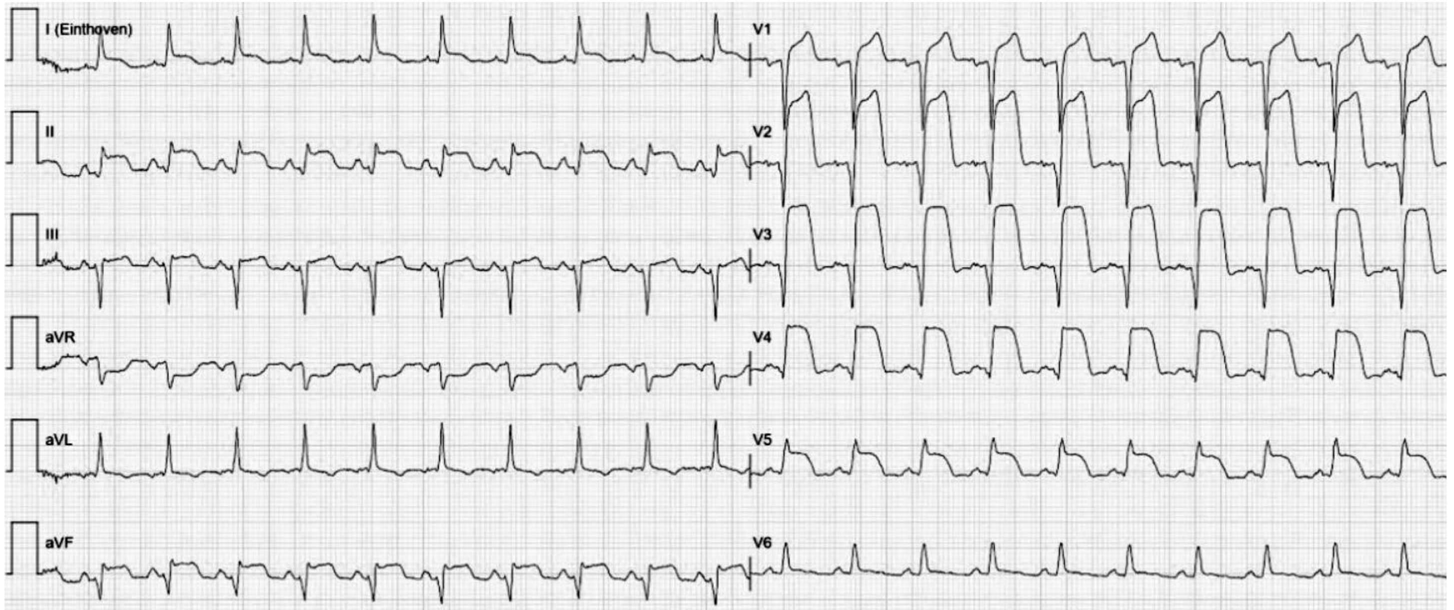

Figure 1

This ECG was sent to me by one of the participants in ***The Masterclass in Advanced Electrocardiography*** I presented in London. She is an emergency physician in The Netherlands.

1. Why does Lead aVL have only a very subtle ST elevation while it is quite obvious in Lead I and Leads V1 – V5?

   This is an occlusion of a Type 3 ("wraparound") LAD. The occlusion is proximal to the D1 branch (and likely the S1 branch as well). This will result in simultaneous ST elevations in Leads III and aVL – which happen to be opposite (or reciprocal) to each other. When BOTH leads manifest ST elevation they cancel each other. That is why Lead III manifests less STE than the other inferior leads and also why Lead aVL manifests hardly any STE at all.

2. There is an anomalous display of ST elevation in Leads V1 – V5. What is it?

   Normally, with proximal occlusions of the LAD, there is a progressive increase in STE from V1 to V4. That doesn't occur here. While the STE *does* increase from Lead V1 to Lead V2, it then begins to reduce in amplitude. This is more characteristic of a proximal occlusion of the RCA with a resulting right ventricular transmural ischemia. But we know that's not the case here because of the ST elevations in Leads I and aVL (even though the STE in Lead aVL is subtle – it's there!). RCA occlusions do not cause ST elevation in Leads I and aVL – though it *can* cause ST depression in those leads.