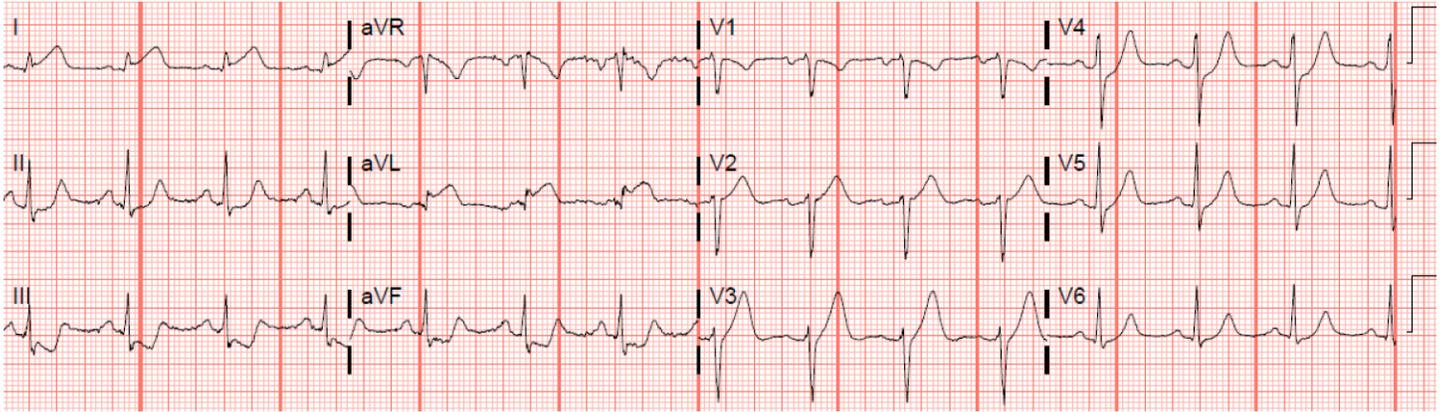


# It Isn't Exactly ST Elevation, but...

## Discussion

Jerry W. Jones, MD FACEP FAAEM



**Figure 1**

Where is the coronary occlusion on this ECG? Is it the LAD? Or is it the LCx?

We can see immediately that there is no involvement of the RCA in this occlusion because of the ST depression in the inferior leads and ST elevation in Lead aVL.

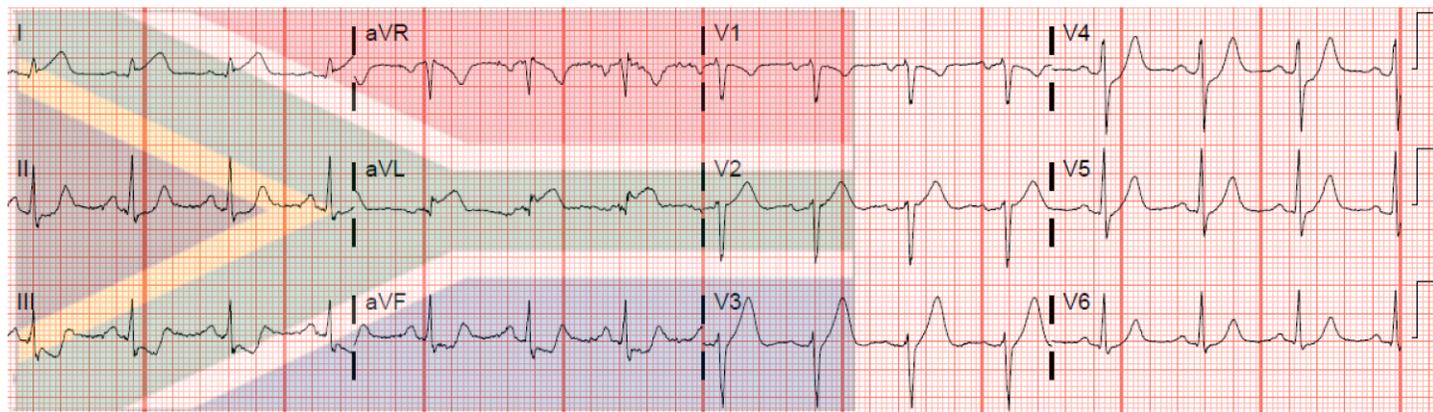
So that leaves us deciding between the LAD and the LCx.

While one cannot completely rule out the LCx as a culprit based on this ECG (in medicine you can NEVER say “never”), let me say that it would be extremely unusual for an occlusion of the LCx to result in ST elevation in Leads I and aVL with ST depression in the inferior leads but without ST depression in Leads V1 – V3 or ST elevation in Leads V5 and V6.

And yes, it would also be unusual for an occlusion of the LAD to produce an ECG like this – but it would NOT be unusual for an occlusion of the D1 branch to produce this!

What you see here has been called by Dr. László Littmann the “South African Flag Sign.” Contrary to some sources, Dr. Littman is originally from Hungary and has never had any association with South Africa. He now practices and teaches in North Carolina.

Why the South African flag?



**Figure 2**

As you can see, the flag (I had to stretch this one a bit) highlights the leads involved in making the diagnosis of a basolateral (formerly “high lateral”) infarction with its central stripes: Leads I, aVL III and V2.

A classic South African Flag sign would include ST elevation in Leads I, aVL and V2 with ST depression in Lead III (reciprocal to Lead aVL).

The issue with THIS particular ECG (and hence the title of this article) is that there is no ST elevation in Lead V2. However, there is a definite hyperacute T wave present in its place.

Granted, hyperacute T waves are not quite as localizing as ST elevation. After all, hyperacute T waves represent ischemia that has not yet reached the epicardium. Indeed, occasionally some leads that manifest hyperacute T waves never progress to ST elevation while others on the same ECG do! But this is good enough.

Hyperacute T waves certainly DO indicate ischemia and here is where the Jones Diagnostic Elimination Method can be helpful. Remember: an occlusion of the LCx does NOT produce ST elevation and, by proxy, hyperacute T waves in Leads V1 or V2.

This ECG represents a basolateral infarction caused by the occlusion of the D1 branch of the LAD.

Any ideas why there is ST depression in Leads V4 – V6? Please leave your thoughts in the comments here or on LinkedIn.