

## Case 20: Questions & Answers:

1. STEMI? Yes, with new onset of RBBB.
2. Territory? Anterior, septal and lateral walls
3. What is the Culprit Vessel? Left Main coronary artery (LMCA)

✓ Besides anterior ST elevations, STE in aVR (>0.5mm) > STE in V1 is 81 % sensitive and 80 % specific for identifying the LMCA as the culprit.

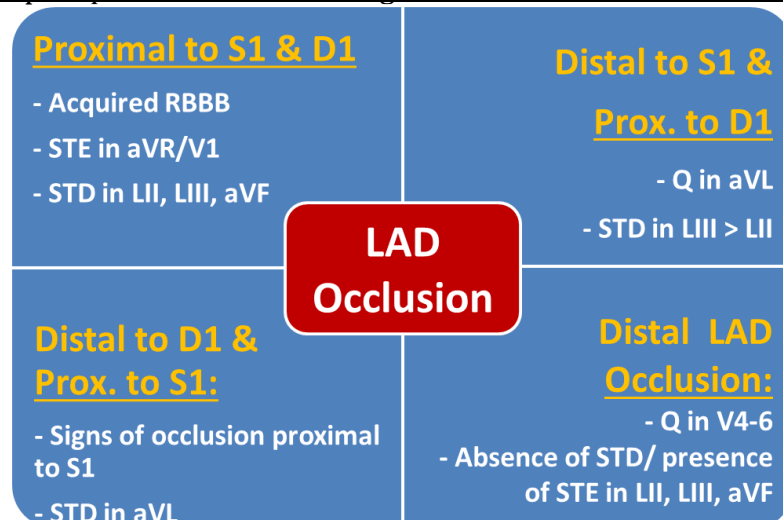
Beware with proximal LAD STEMI or LM; since they may be more at risk of serious complications such as pump failure, cardiogenic shock and life threatening rhythm abnormalities.

Close to 1% of all STEMI cases have a LM coronary occlusion, and lower than 3% of anterior STEMI, partly because most of those with LM occlusion do not make it alive to the catheterization laboratory. The documented mortality is about 50% and over 70% of those presenting in cardiogenic shock. Clinical and ECG findings may be influenced by individual coronary anatomic variants, ischemic preconditioning (collateralization), and timing of ECG recording.

Findings that favor proximal LAD occlusion:

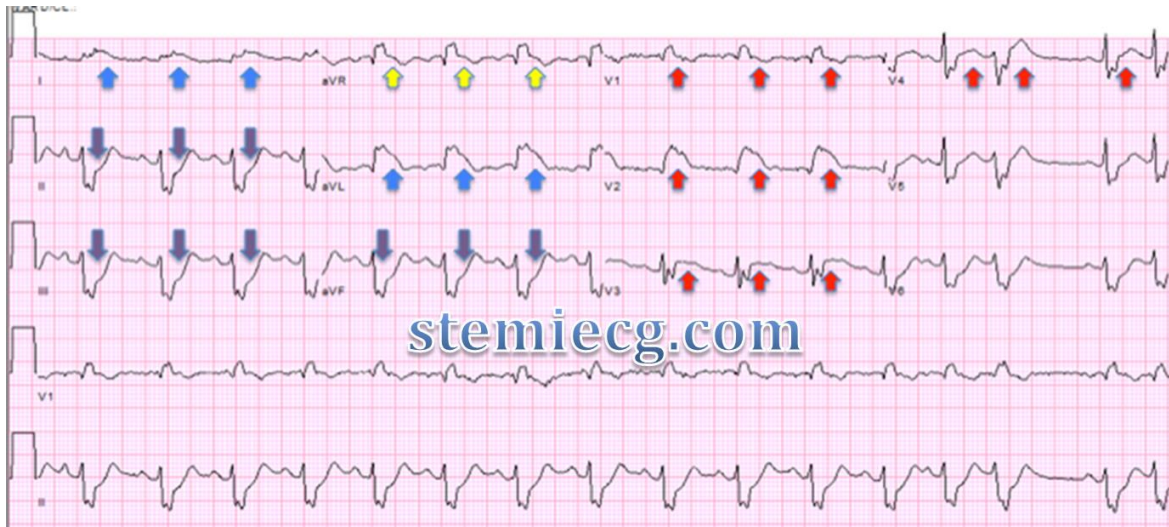
1. ST-segment elevation in anteroseptal leads V1-V4 (red arrows)
2. ST-segment elevation in L-I & aVL or aVR (blue arrows)
3. Concomitant ST-segment depression (STD) in the inferior leads (purple arrows) as reciprocal changes from his anterior STE.
4. ST-segment depression in V5-V6.
5. Disappearance of preexistent septal Q waves in lateral leads
6. New RBBB with a Q wave preceding the R wave (QRBBB) in lead V1 is a specific but insensitive marker.

Electrocardiographic predictors for locating the LAD occlusion with anterior STEMIs:



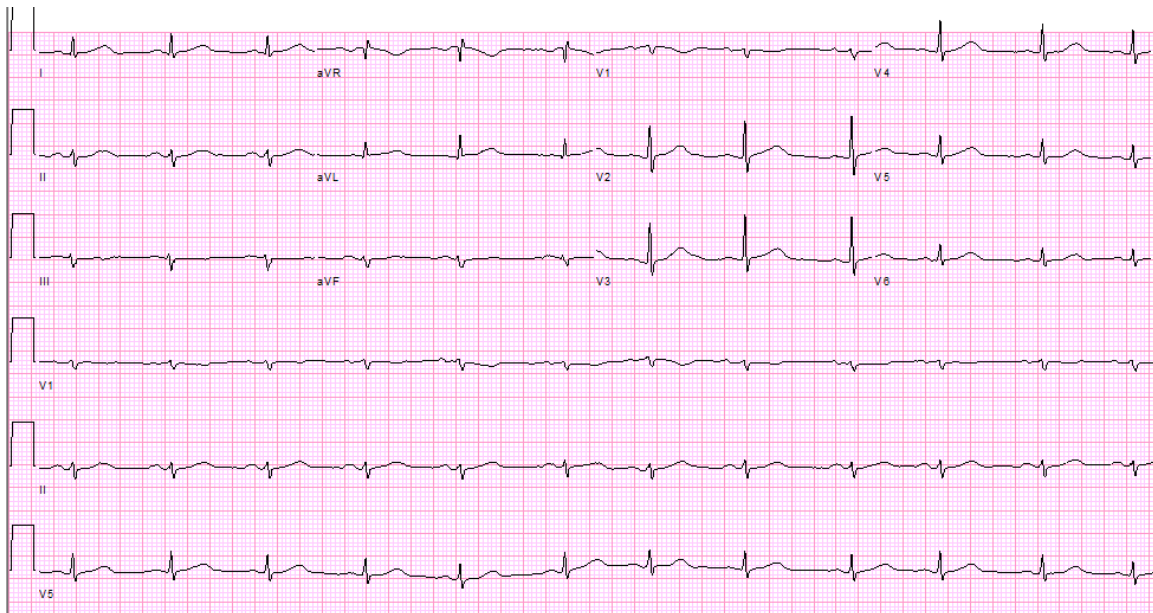
S1= first septal artery, D1= first diagonal artery, STE= ST segment elevation, STD= ST segment depression.

### Arrival ECG:



**Description:** There is anterior (V3-V4), septal (V1-V2) and high lateral (L1, aVL) ST segment elevations. There is also evidence of subtle aVR STEs (~0.5mm) and ST segment depressions upon the inferior (LII, LIII & aVF) and lateral (lead V6).

### Baseline ECG:

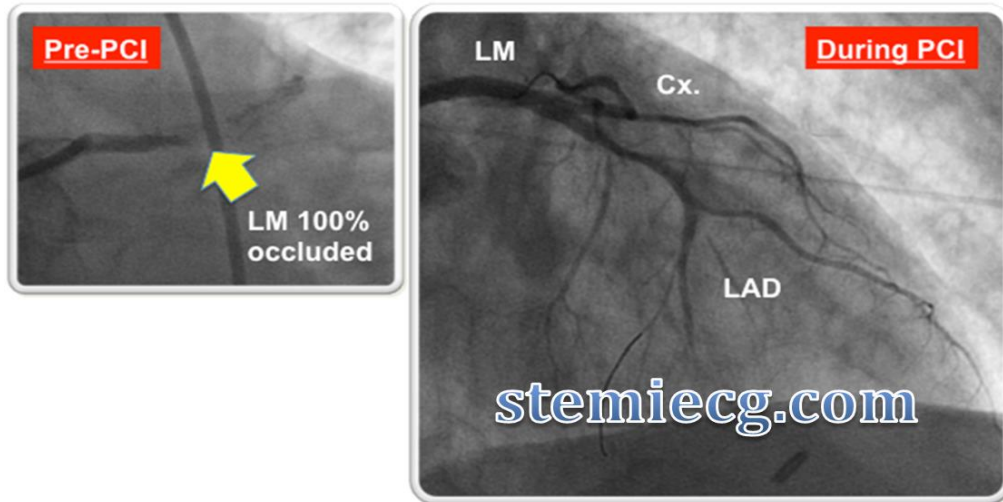


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**Coronary Angiography: see below**

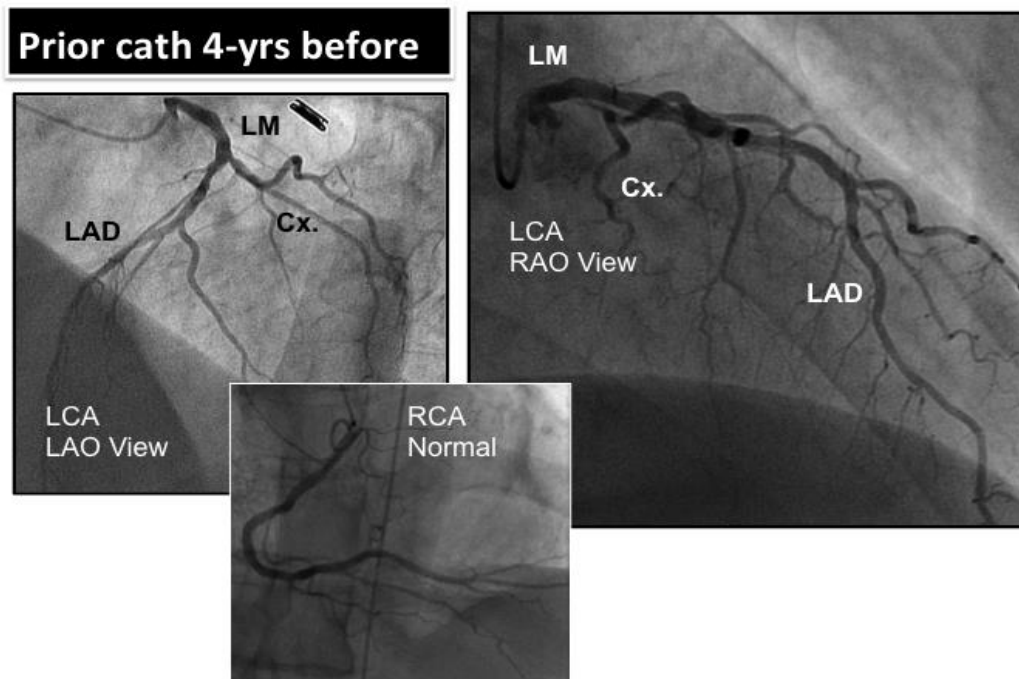
**Coronary Angiography:**

# STEMI Cardiac Catheterization



This patient required intravenous vasopressor drugs, IABP for hemodynamic support and stenting to his LM, proximal LAD and circumflex vessel and to an obstructive non-culprit RCA lesion in view of his cardiogenic shock.

Unfortunately, he had significant no-reflow of his LAD (from thrombus burden and despite intra-coronary dilators), with extensive cardiac marker elevation, severe LV systolic dysfunction and refractory cardiogenic shock with multiorgan failure.



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