

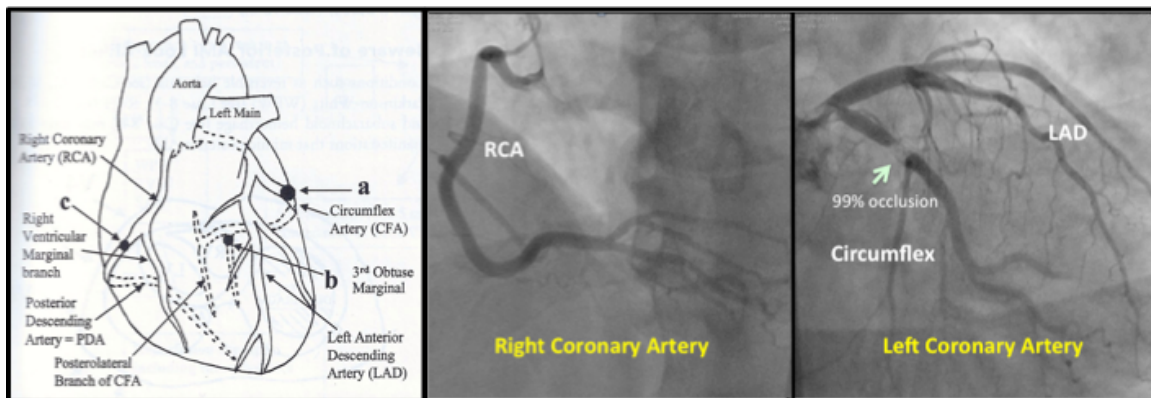
### Case 3: Questions & Answers:

1. STEMI? Yes.
2. Territory? High lateral and posterior AMI.
3. What is the Culprit Vessel? Circumflex artery.

The sensitivity of ST elevation for detection of lateral AMI is limited because the circumflex artery supplies an electrocardiographically silent area of the myocardium. \*Complete circumflex occlusion manifests (a) any ST elevation at all in only 36% of cases; (b) ST elevation > 2 mm in only 5% of cases; (c) ST depression alone in 30% of cases; (d) **ST elevation or ST depression or both in approximately 67% of cases**; and (e) neither ST elevation nor ST depression in 33% of cases. This contrasts markedly with complete LAD occlusion (anterior AMI) or RCA occlusion (inferior AMI), which manifest ST elevation in at least 70-92% of cases.

Facts:

- **Isolated lateral or posterior AMI are frequently MISSED.**
- High lateral AMI may occur from occlusion of the Circumflex-OM, LAD-Diag., or Ramus Intermediate vessel.
- Lateral AMI frequently shows borderline STE and not infrequently < 1mm in aVL & L-I or it may ONLY show on the aVL lead. Look for inferior reciprocal changes.
- **Posterior AMI may be isolated or concurrent** with inferior, RV, and/or lateral AMI.
- Isolated posterior manifests as ST depression in V1-V4 and/or ST elevation >0.5mm in V7-V9.
- Posterior injury needs confirmation with a posterior ECG.
- Posterior and lateral STEMI favor circumflex occlusion.
- Posterior and inferior STEMI favors RCA occlusion (see figure below).
- How to differentiate ST depressions in V1-V4 from posterior STEMI versus anterior subendocardial ischemia as may be seen in UA/NSTEMI:
  - Maximal ST depression  $\geq 2$ mm in V1-V3 (90% specific for posterior STEMI).
  - Presence of posterior STE >0.5mm (V7-V9)
  - T waves are usually upright but may be asymmetrically inverted.
  - ST depression of UA/NSTEMI is usually transient, rarely with tall upright T waves, and often < 2 mm.



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