

# Detect the Infarct-related Artery by ECG

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# Infarct-related artery

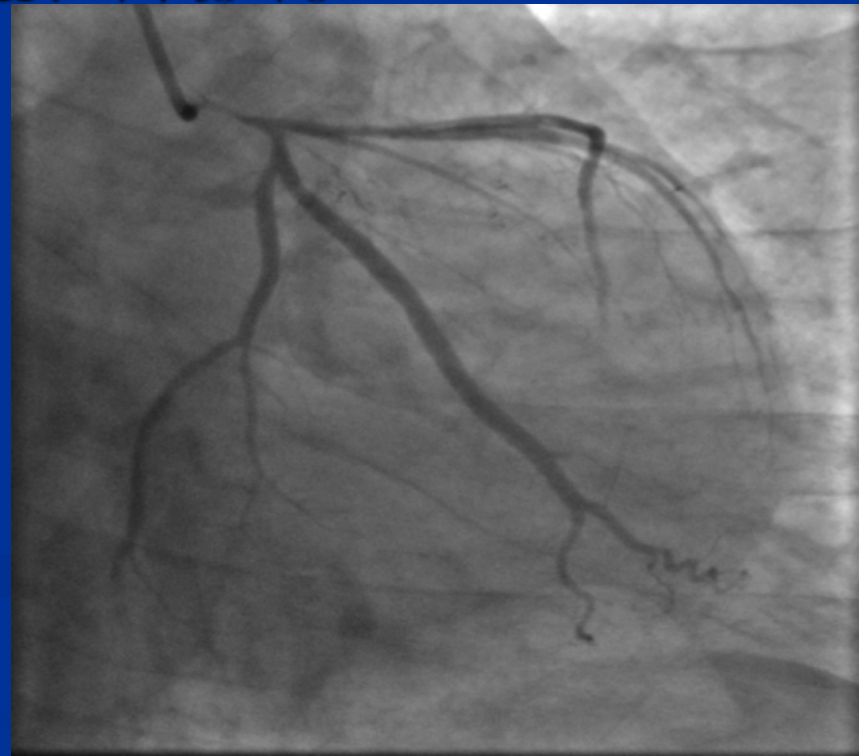
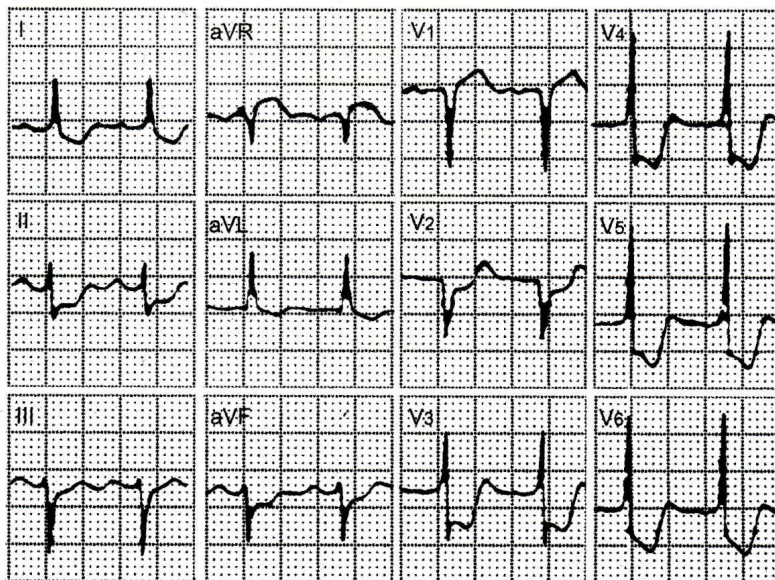
- Left anterior descending artery (LAD) : 44%~56%
- Right coronary artery (RCA) : 27%~39%
- Left circumflex coronary artery (LCX) : 17%

# Localization of Ischemia or Infarction

| ECG Leads            | Regions                | Culprit Lesion  |
|----------------------|------------------------|-----------------|
| $V_1 \sim V_3$       | Anteroseptal or Apical | LAD             |
| $V_3 \sim V_5$       | Anterior Wall          | LAD             |
| I、aVL、 $V_5$ 、 $V_6$ | Lateral Wall           | Diagonal or LCX |
| II、III、aVF           | Inferior Wall          | RAC or LCX      |
| $V_7 \sim V_9$       | Posterior wall         | RAC or LCX      |
| $V_{3R} \sim V_{5R}$ | Right Ventricle        | RAC             |

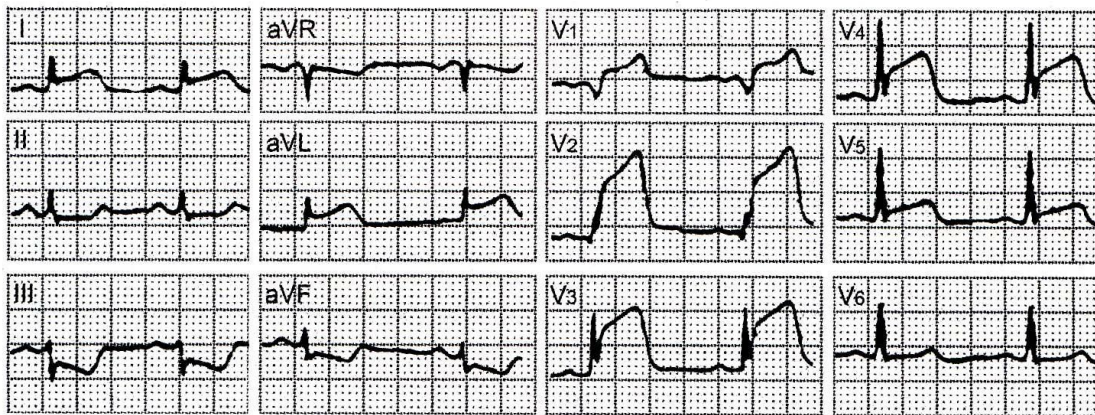
# Occlusion of left main coronary artery

- ST-segment elevation in lead aVR
- $ST_{aVR} \uparrow > ST_{V1} \uparrow$
- ST-segment depression in lead I, II, V4 to V6



# Proximal occlusion of the LAD

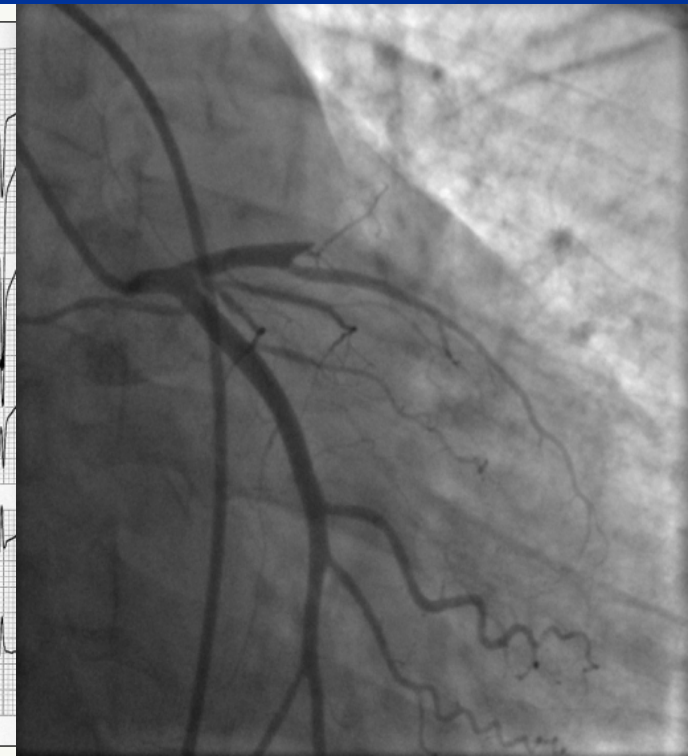
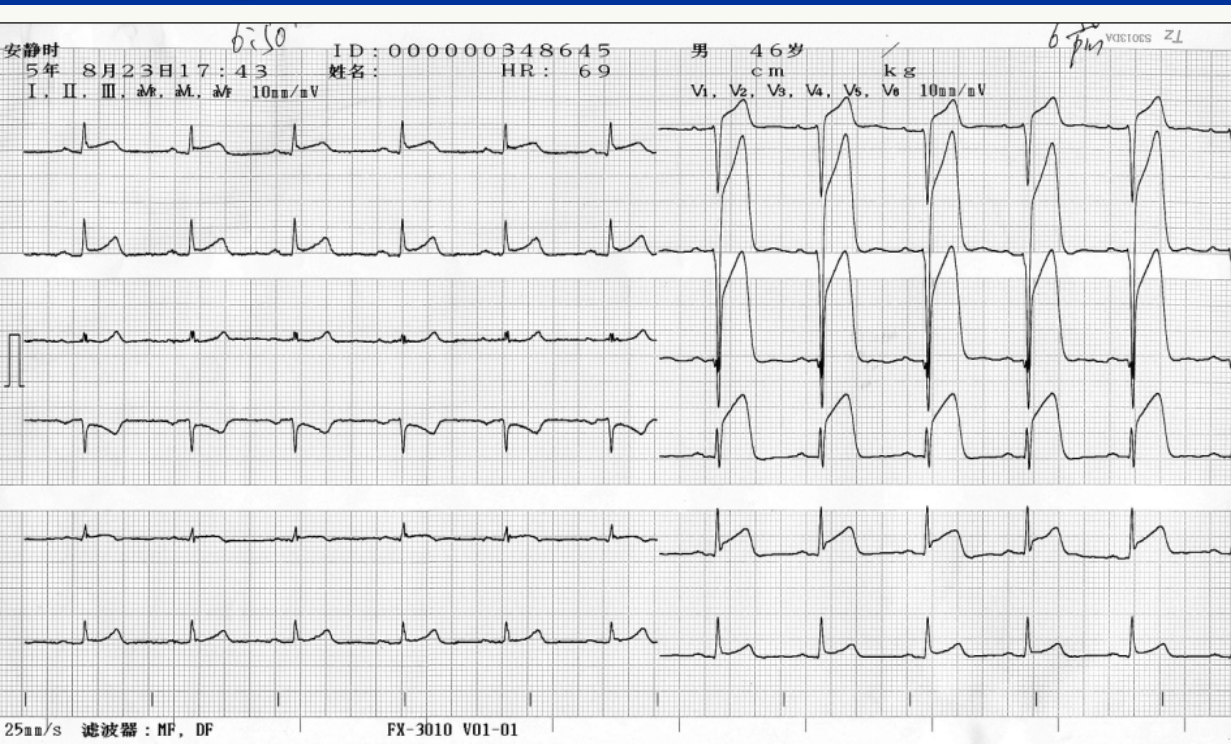
- ST-segment elevation in V1, V2, V3 and aVL
- ST-segment depression of more than 1 mm in lead II, III and aVF
- Q wave disappearance in aVL
- $ST_{III\downarrow} > ST_{aVL\uparrow}$
- New RBBB with a Q wave preceding the R wave in lead V1





# Mid or distal occlusion of the LAD

- ST-segment elevation  $\leq 3.2\text{mm}$  in V2
- A new Q wave in V4~V6
- Without significant inferior ST-segment depression or ST-segment elevation in lead II、III and aVF

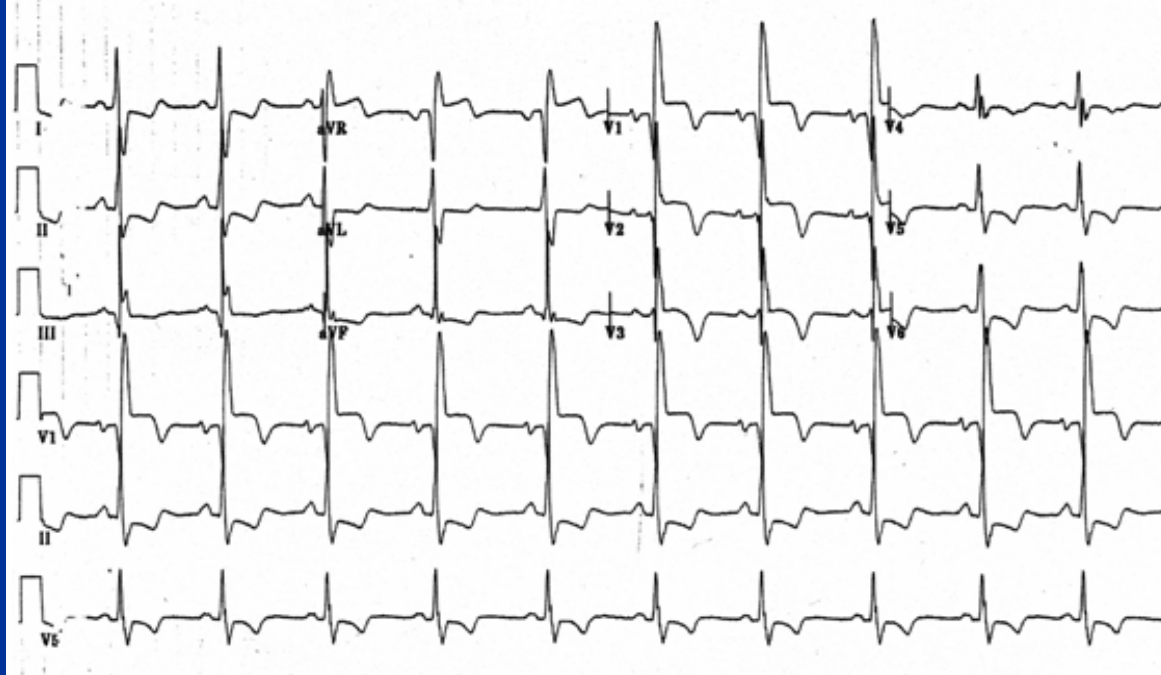


# Occlusion of the 1st diagonal

- ST-segment elevation in aVL and V2
- ST-segment depression in lead III、 aVF

# Occlusion of the LAD septal perforator

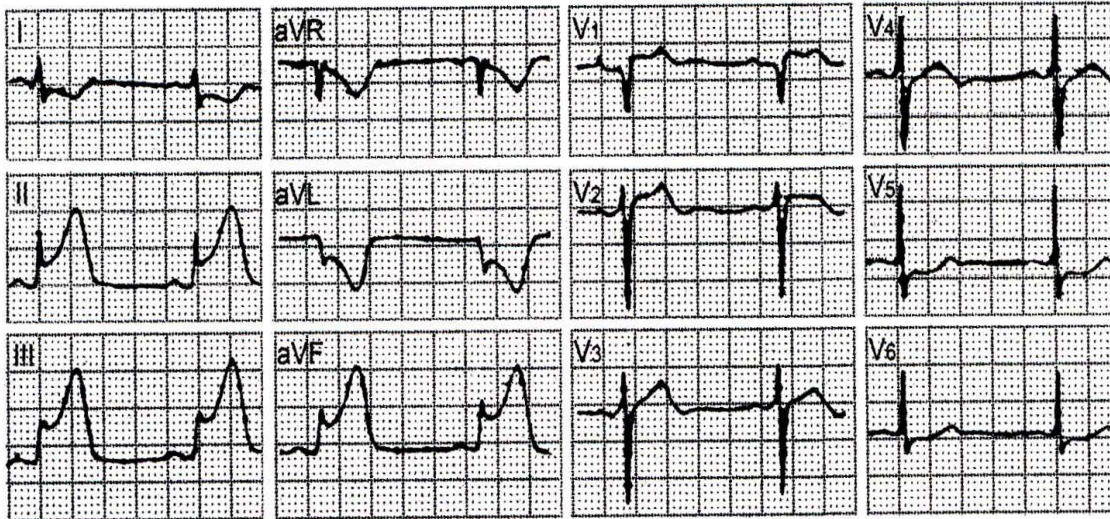
- ST-segment elevation in aVR
- ST-segment depression in lead V5
- Q wave disappearance in lead I, aVL
- RBBB





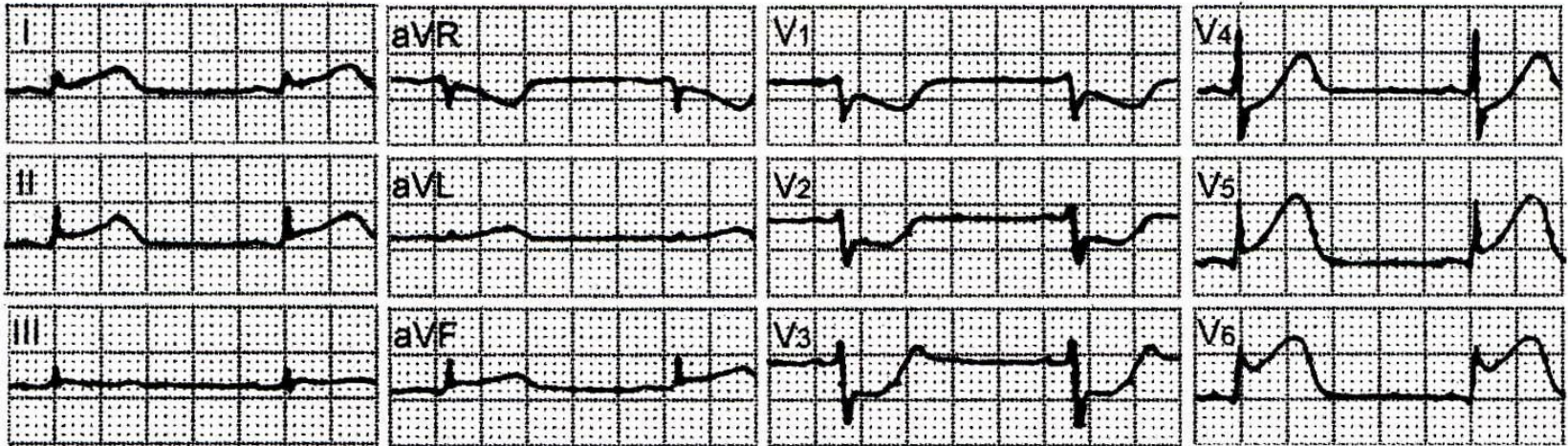
# Proximal occlusion of the RCA

- Greater ST-segment elevation in lead III than in lead II
- ST-segment depression of more than 1 mm in leads I and aVL
- $ST_{V3}\downarrow / ST_{III}\uparrow < 0.5$
- right ventricular infarction



# Proximal occlusion of the LCX

- Greater ST-segment elevation in lead II than in lead III
- ST-segment elevation in lead I and aVL
- ST-segment depression in lead V1 to V3
- $ST_{V3\downarrow}/ST_{III\uparrow} > 1.2$



# Limitations

- Large individual variations in coronary anatomy
- The presence of preexisting coronary artery disease
- Collateral circulation