Irrigation due to flow from the right coronary artery (RCA) - 2010

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The RCA provides blood supply to the SA Node by this branch, to the right atrium (RA), part of the left atrium (LA), right ventricle (RV), AV Node, inferior wall and low and dorsal region of the left ventricle (LV).
The branches of the RC artery that irrigate the inferior wall are:

1) Posterior descending artery (PD);
2) Left ventricular artery (LV);
3) Postero-lateral artery (PL) that originates in the RCA in≈ 20% of the cases.

The left ventricular branch (LV) originates in the RC artery in 80% of the cases and in the Cx artery in the remaining 20%.
Finally, the posterolateral branch (PL) originates in the Cx in 80% of the cases and RC artery in the remaining 20%.
Electrocardiographic manifestations of inferior infarction occur in inferior leads II, III and VF, influencing according to the evolutionary moment, the QRS complex (necrosis), the ST segment (injury) and the T wave (ischemia).

1) HYPERACUTE PHASE (few hours): an increase in intrinsicoid deflection time is observed in QRS, a significant ST segment elevation of superior concavity, followed by positive, symmetrical T wave with increased voltage;

2) ACUTE PHASE (first days): appearance of pathological Q wave (40 ms), ST segment elevation of superior concavity followed by inverted, symmetrical or wide-based T wave;

3) **CHRONIC OR ESTABLISHED PHASE:** it is characterized by residual pathological Q wave, present in 65% to 70% of the cases.

In the three leads in >15 % of the cases; only in II in >25 % of the cases; only in VF in 5% to 10%; and in III and aVF in 25% to 30%.
It may be observed in any of these phases with concomitant ST segment elevation and T wave with greater voltage and symmetrical in the anterior wall, which is known as reciprocal or mirror image.
Diaphragmatic infarctions that present reciprocal image have a worse prognosis because they have less ejection fraction and are more extensive infarctions.
Catheterization has shown that 50% of diaphragmatic infarctions present obstructive lesion of the ADA concomitantly.
The patients with acute anterior infarction and Q waves in the inferior leads are carriers of minor infarctions, with a greater incidence of middle-distal occlusion of the ADA and relatively preserved ventricular function.
The patients with acute anterior infarction without reciprocal alterations in the inferior leads are carriers of better ventricular function.
The patients with acute anterior infarction without ST segment depression in the leads of the apico-lateral wall, present more frequently, multiple vessel lesion and significant ventricular dysfunction. The reciprocal image in I and aVL suggests the possibility of RCA lesion.

NEW ELECTROCARDIOGRAPHIC TERMINOLOGY FOR Q-WAVE INFARCTIONS BASED ON THE CORRELATION WITH CE-CMR

INFEROLATERAL ZONE

- **Lateral**
- **Type:** B-1
- **Most likely site of occlusion:** LCx artery or its oblique marginal branch (OM)
- **ECG pattern:** RS in V1-V2 and/or Q in I, VL, V5-V6. Voltage of R wave in V6 of less amplitude
- **Segments compromised by infarction in CE-CMR:** image in the next slide.

- **SE:** 67%
- **SP:** 99%.

INFEROLATERAL ZONE

- **Inferior**
- **Type:** B-2
- **Most likely site of occlusion:** RCA and sometimes distal from LCx
- **ECG pattern:** Q in II, III, VF
- **Segments compromised by infarction in CE-CMR:**
- **SE: 88%**
- **SP:** 97%.