

ECG #28

A 64-year-old man attends the emergency department with a 3-week history of exertional chest pain, worsening over the past few days.

Describe and interpret his initial 12-lead electrocardiogram:



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INTERPRETATION:

- Ventricular rate 60 bpm
- Sinus rhythm
- PR interval 158 ms
- QRS axis (36°)
- QRS duration 102 ms
- Inferior Q waves, most prominent in lead III
- ST elevation in the inferior leads, again most prominent in lead III
- Reciprocal ST depression in leads I and aVL with biphasic (down-up) T wave inversion in lead aVL
- Subtle ST elevation V1-3 with biphasic (up-down) T wave inversion in lead V2
- QTc 458 ms

DIAGNOSIS:

This is *highly* suspicious for an occluded right coronary artery with associated RV involvement. Right-sided leads would have provided useful confirmation.

The patient had undergone previous coronary artery bypass grafting (CABG) several years ago and more recent percutaneous coronary intervention (PCI) to his left anterior descending (LAD) artery. He was admitted under cardiology and sent for diagnostic coronary angiography. This demonstrated a dominant

right coronary system with patent left internal mammary artery (LIMA) grafts to the intermediate (IM) and LAD branches, and patent LAD stents distal to the anastomosis with minor in-stent restenosis. Chronic total occlusion (CTO) of the right coronary artery (RCA) with antegrade bridging collaterals filling the distal vessel was also discovered and the patient was booked in for an *urgent* PCI to his RCA.