ECG #32

A 80-year-old man presents to the emergency department following a syncopal episode with associated chest discomfort (currently 4/10 in severity).

Describe and interpret his initial 12-lead electrocardiogram:

Next ECG →

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DESCRIPTION:

- Ventricular rate 49 bpm
- Sinus bradycardia
- 1st degree AV block (PR interval 286 ms)
- Normal QRS axis (4°)
- QRS duration 98 ms
- Normal R wave progression
- Downsloping ST segment depression in the lateral leads (I + aVL, V5-6)
- Slight ST elevation in the inferior leads III + aVF with associated hyperacute T waves
- Biphasic down-up T wave inversion in leads V2, I + aVL
- QTc 411 ms

INTERPRETATION:

These electrocardiographic features are highly suggestive of an acute occlusion of the right coronary artery.

← Previous ECG

15 minutes later …



Next ECG →

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DESCRIPTION:

- Ventricular rate 40 bpm
- Sinus bradycardia
- 1st degree AV block (PR interval 276 ms)
- Normal QRS axis (2°)
- QRS duration 96 ms
- Normal R wave progression
- Downsloping ST segment depression in the lateral leads (I + aVL, V5-6)
- Resolving ST elevation in the inferior leads III + aVF with remaining hyperacute T waves
- Resolving biphasic down-up T wave inversion in leads V2, I + aVL
- QTc 379 ms

INTERPRETATION:

The patient was symptom free at the time of this recording. In this context, this ECG would represent spontaneous resolution of the presumed RCA occlusion resulting in a trend towards normalisation of the ECG.

← Previous ECG

4 hours later …



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DESCRIPTION:

- Ventricular rate 50 bpm
- Sinus bradycardia
- 1st degree AV block (PR interval 260 ms)
- Normal QRS axis (4°)
- QRS duration 96 ms
- Normal R wave progression
- Slight remaining downsloping ST segment depression in the lateral leads (I + aVL, V5-6)
- Faintest hint of ST elevation in the inferior leads III + aVF with normalisation of the hyperacute T waves
- Normalisation of T wave morphology throughout
- QTc 412 ms

INTERPRETATION:

Progressive electrocardiographic normalisation following spontaneous resolution of a recent RCA occlusion.

CASE PROGRESSION:

The patient was admitted to the Coronary Care Unit, shortly after which he suffered an inferior ST elevation myocardial infarction. Emergency coronary angiography revealed a totally occlusive thrombus in the RCA which was stented.