ECG #23

A 44-year-old man presents with a history of “crushing” retrosternal chest pain, radiating down both arms, that resolved spontaneously about an hour ago. He is currently pain free.

Describe and interpret his initial 12-lead electrocardiogram:

Show solution

- Ventricular rate 69 bpm
- Sinus rhythm
- Normal PR interval (150 ms)
- Normal QRS axis (79°)
- QRS duration 96 ms
- QTc 385
- Widespread concave ST elevation → early repolarisation phenomenon *versus* subtle anterior ST-elevation myocardial infarction
- Tall (possibly hyperacute) T waves in the mid-lateral precordial leads
- Biphasic T wave inversion in lead V2 → ? Type B Wellens’ Syndrome

Highly suspicious for a critical stenosis of the left anterior descending artery (LAD)! Repeat ECG requested in 15 minutes.

Repeat ECG after 40 minutes. Patient remains pain/symptoms free.

Described and interpret the following 12-lead electrocardiogram:

Show solution

- Ventricular rate 66 bpm
- Sinus rhythm
- Normal PR interval (160 ms)
- Normal QRS axis (75°)
- QRS duration 88 ms
- QTc 379
- Widespread concave ST elevation (unchanged)
- Tall (possibly hyperacute) T waves in the mid-lateral precordial leads (unchanged)
- Biphasic T wave in lead V2 appears more upright → ? pseudo-normalisation

Ongoing suspicion for LAD occlusion. Patient to remain in a monitored area with continuous cardiac monitoring and repeat 12-lead electrocardiogram in 15 minutes.

Patient develops recurrence of chest pain 10 minutes later and starts to appear quite “unwell”.

Describe and interpret the following 12-lead electrocardiogram:

Show solution

- Ventricular rate 24 bpm
- Sinus bradycardia; atrial rate 48 bpm
- Normal PR interval (190 ms)
- AV block: 2nd degree, 2:1 block (Mobitz I or II)
- Normal QRS axis (76°)

- QRS duration 88 ms
- QTc 238
- ST elevation V2-V5 (≥5 mm in V4) with associated hyperacute T waves

Anterior STEMI most likely secondary to an occlusion of the left anterior descending coronary artery.

A short time later…

Show solution

- Ventricular rate 55 bpm
- Sinus rhythm
- Normal PR interval (154 ms)
- Normal QRS axis (85°)
- QRS duration 94 ms
- QTc 375
- ST elevation V2-V6 with associated hyperacute T waves
- however most likely incorrect electrode placement: V6→V4, V4→V5, V6-V4

Patient received primary PCI to a “severely” occluded LAD.