

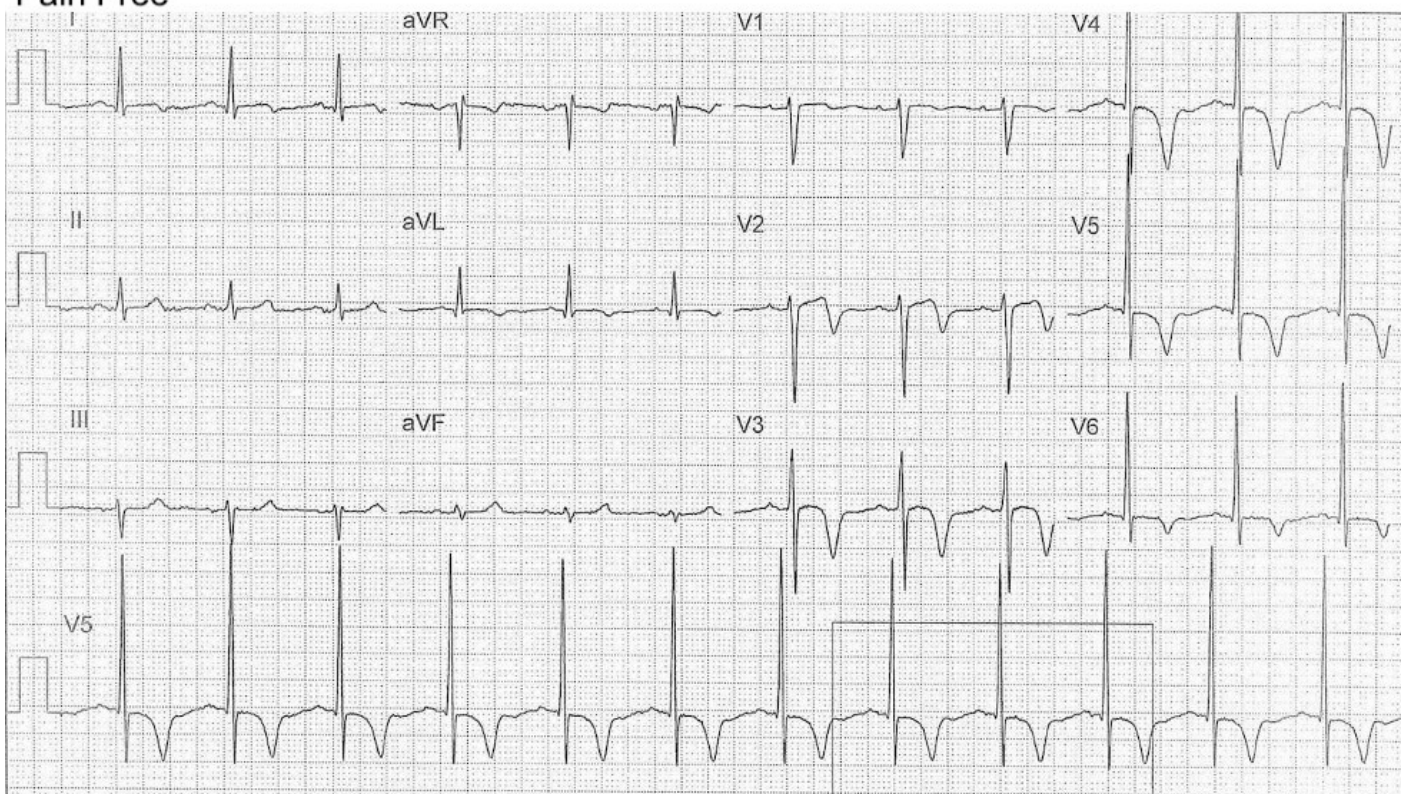
You are a junior medical officer working at a tertiary ED when Mr X, a 40M, presents with a 1-hour history of severe central chest pain.

However, on initial assessment he was pain free (ECG #1). Four minutes later he developed further intense chest pain and a repeat ECG was performed (ECG #2).

### Tasks:

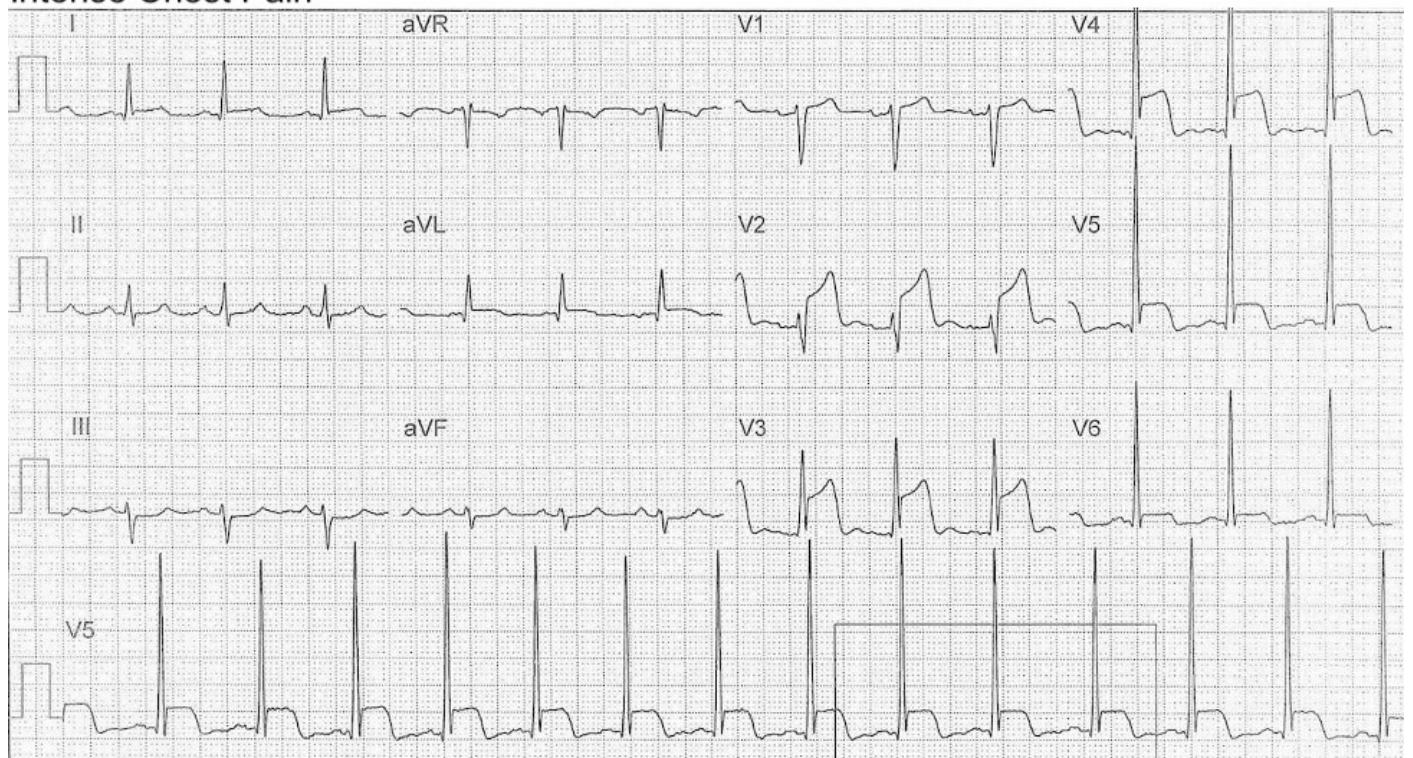
1. Using a systematic approach, describe and interpret ECG #1.
2. Using a systematic approach, describe and interpret ECG #2.
3. Outline your approach to initial management (as the JMO) for this patient.

Pain Free



Rate	72 bpm	
Rhythm	Regular sinus rhythm	
Axis	Within normal limits (WNL)	
Intervals (ref. ranges)	PR (120-200ms)	WNL at 160ms
	QRS (<120ms)	WNL at 100ms
	QT (<480ms)	WNL at 400ms
Segments	ST elevation in V1	
Other morphology	Biphasic T wave lead V2	
	T wave inversion leads I, aVL, aVR, V1, V3-6 with deep inversions V3-6	
	Minimum voltage criteria for left-ventricular hypertrophy (LVH)	
Interpretation	The differentials of deep T wave inversion are relatively broad. But in a patient with a history of chest pain, a pain free ECG and the following ECG features see during pain, the major concern is Wellen's syndrome – signifying a critical left-anterior descending (LAD) coronary artery lesion.	

## Intense Chest Pain





Rate	84 bpm	
Rhythm	Regular sinus rhythm	
Axis	Normal	
Intervals (ref. ranges)	PR (120-200ms)	WNL at 160ms
	QRS (<120ms)	WNL at 100ms
	QT (<480ms)	WNL at 360ms
Segments	ST Elevation in leads I (<1mm); aVL (1 mm); V1 (1mm); V2 (6mm); V3 (7mm); V4 (7mm); V5 (4mm); V6 (1-2mm)	
	ST Depression leads III, aVF	
Other morphology	Note resolution of deep T wave inversion with hyperacute T waves on ST segments in leads V2-3	
	Minimum voltage criteria for LVH (as above)	
Interpretation	Antero-lateral ST-elevation myocardial infarction (STEMI) likely due to occlusion of critical lesion suspected from ECG #1.	

## Management

1. Recognise that this is an **EMERGENCY!**
2. Call for help from an ED consultant or senior registrar who will activate a 'Code STEMI' according to local protocol.
3. Initiate management as per local protocol.  
An example of an ED Code STEMI Protocol (Sir Charles Gardiner Hospital) is as follows...

# SCGH ED Code STEMI Protocol

