

# The ECG in Ischaemia

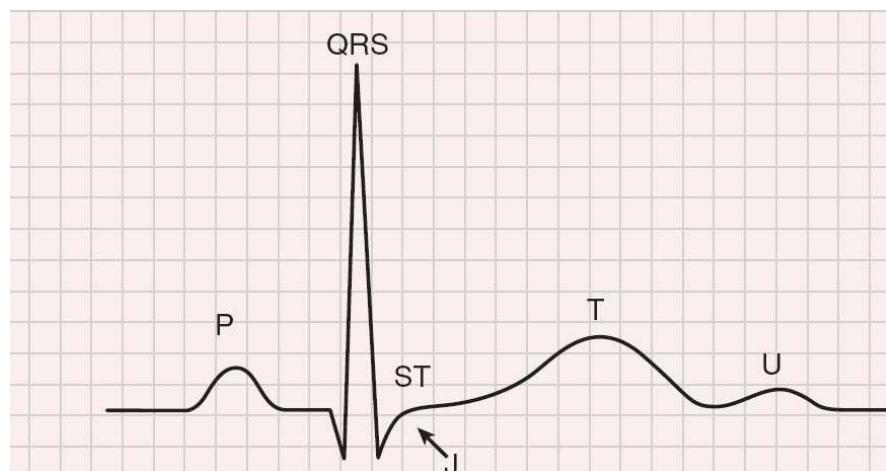
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## Format

- Interactive
- The basics of the ECG
- Acute Myocardial infarction
  - St elevation MI
  - NSTEACS
  - Risk assessment
- The ECG as part of exercise stress testing

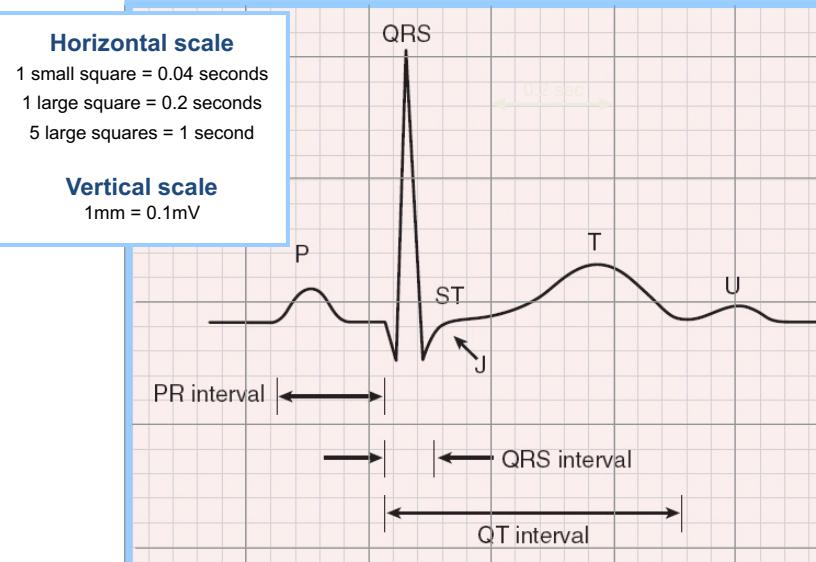
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## Normal ECG wave



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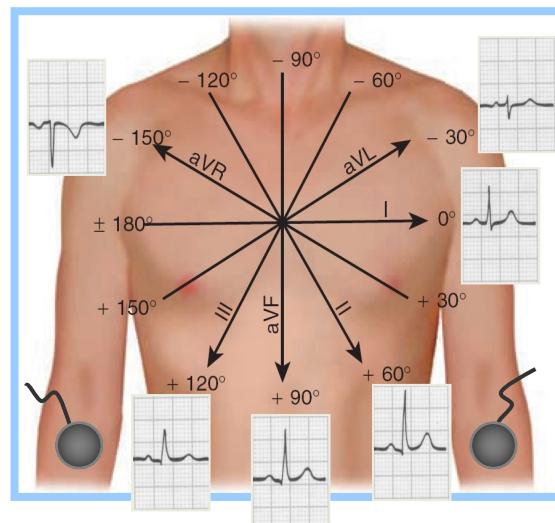
## Normal ECG wave



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## Limb Leads

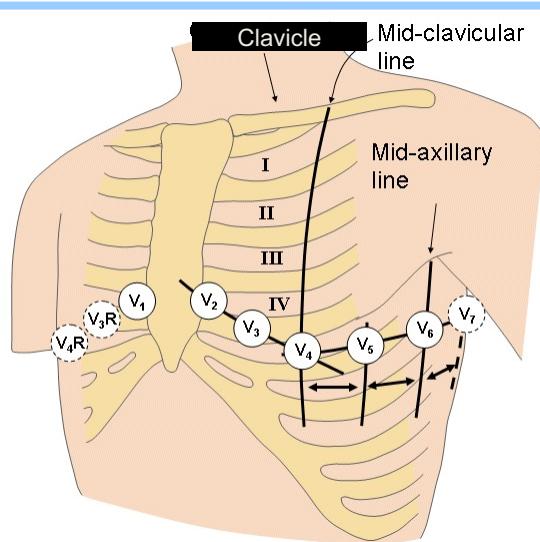
4 electrodes (2 arms, 2 legs) → 6 “leads”



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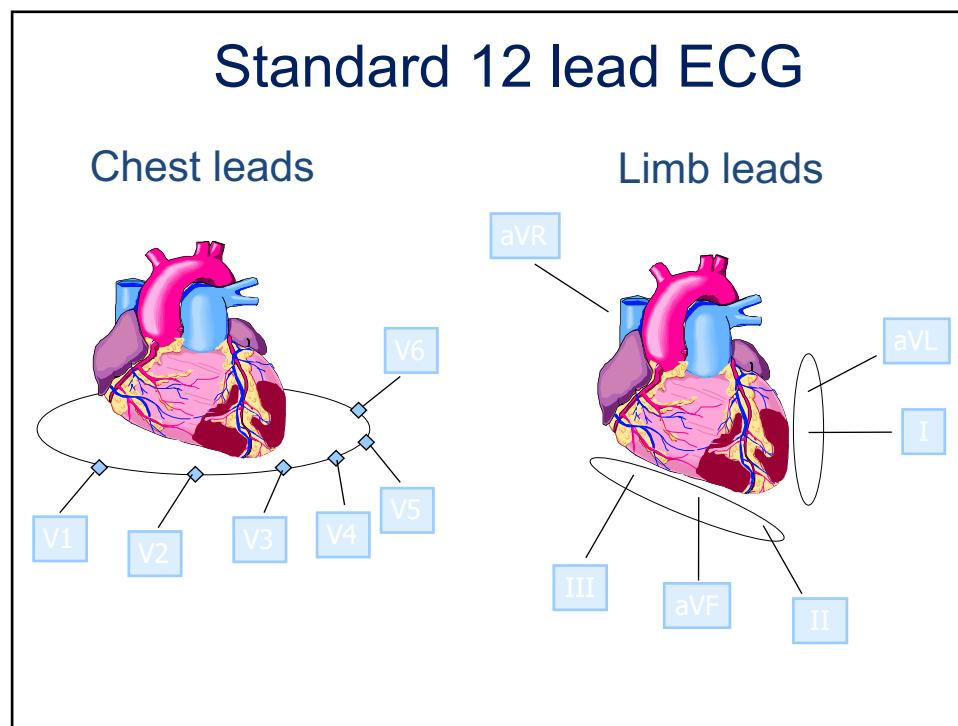
## Chest Leads

6 electrodes → 6 “leads”

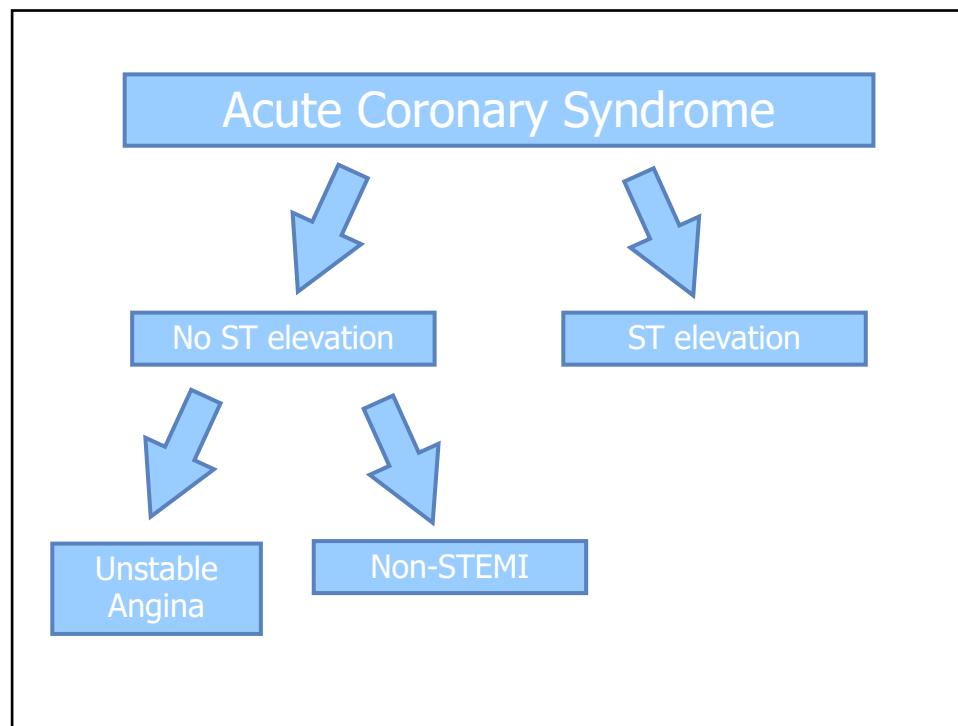


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## ST Elevation MI

- Early recognition of ECG changes needed
  - Trigger to arrange an early Primary PCI
  - Early Thrombolysis
- Note that the treatment algorithm depends on the clinical presentation and ECG change ie that the ECG is fundamental
- Regionalisation
  - Anterior: LAD
  - Inferior: RCA or of occlusion of the dominant LCx
  - True posterior

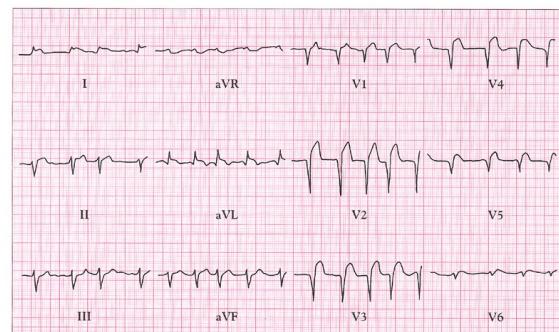
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## ECG changes of acute coronary Occlusion (untreated)

- Very transient T inversion
- ST elevation
- T wave inversion with development of q waves
- Development of established q waves

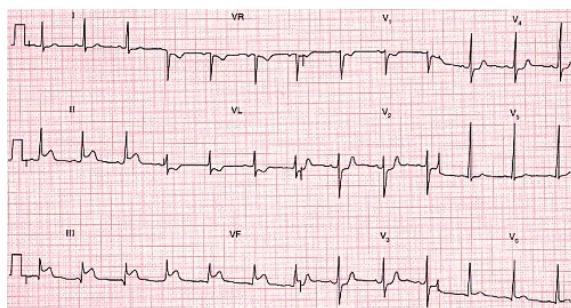
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Ant MI  
note ST  
elevation  
and Q  
waves V2-  
V5



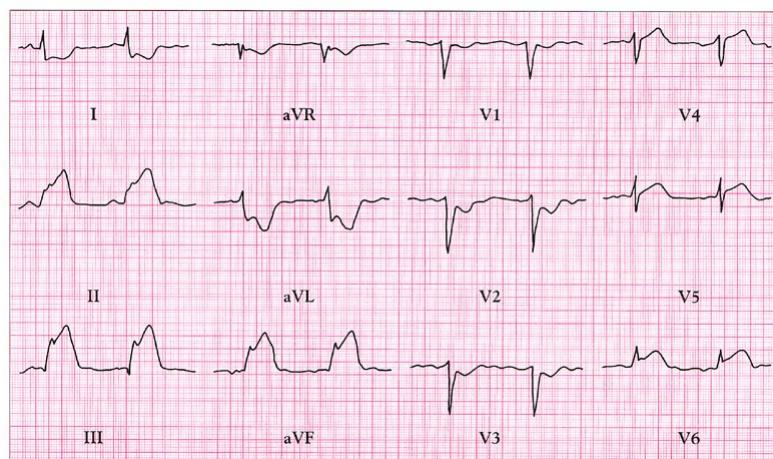
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Acute  
Inferior MI



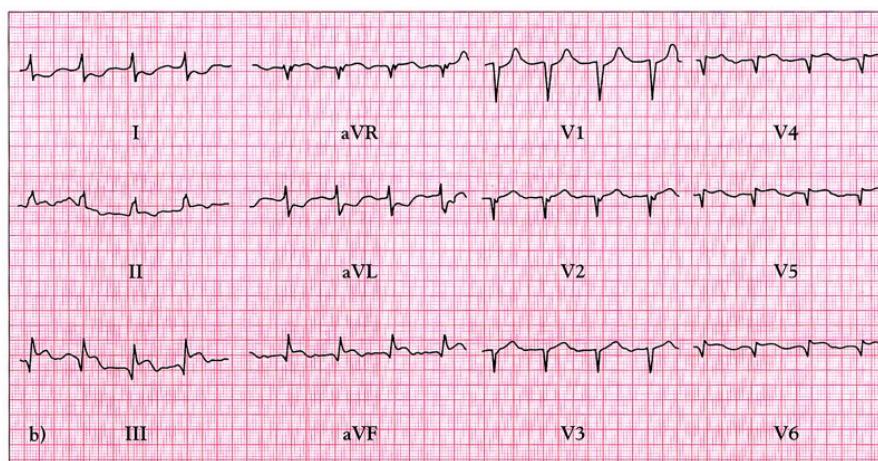
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## Acute Inf lateral MI



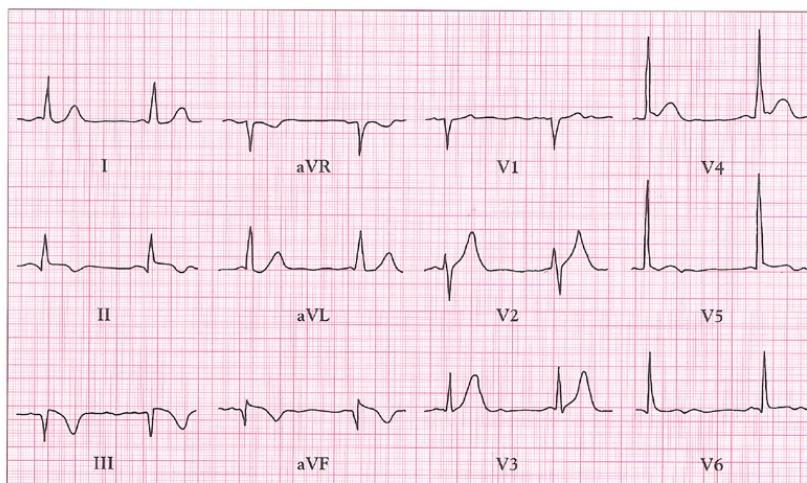
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## Acute Inferior MI with previous q wave ant MI



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## Inf MI progressing to q waves

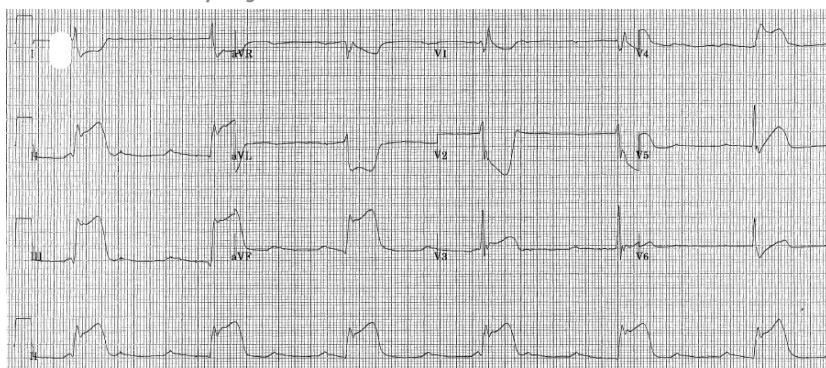


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## ECG 9

A 66 year old man with diabetes is admitted via the emergency department with a one hour history of chest heaviness, dyspnoea, and nausea. He is overweight. His blood pressure (in both arms) is 85/50. His pulse is 38 and regular. He is pale and clammy. Clinical examination reveals a raised jugular venous pressure with clear lung fields. He is known to have hypertension which is under good control on atenolol 50 mg/day.

What is the most likely diagnosis?



- a.Thoracic aortic dissection
- b.Acute inferior myocardial infarction
- c.Beta blocker overdose
- d.Massive pulmonary embolus
- e.Myopericarditis with hypoglycaemia

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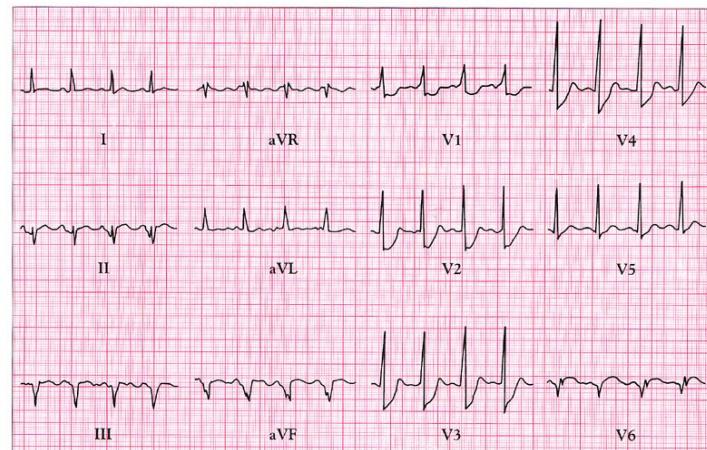
**What immediate treatment is most appropriate?**

- a.High flow oxygen and urgent CT chest to exclude dissection or pulmonary embolus
- b.Aspirin and thrombolysis or primary angioplasty
- c.Isoprenaline infusion titrated against heart rate response and aggressive fluid resuscitation

B is correct  
Clopidogrel given soon after thrombolysis (after CHARISMA Trial data)  
Also Clopidogrel 600mg given with ASPIRIN pre primary angioplasty

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## True posterior Myocardial Infarction

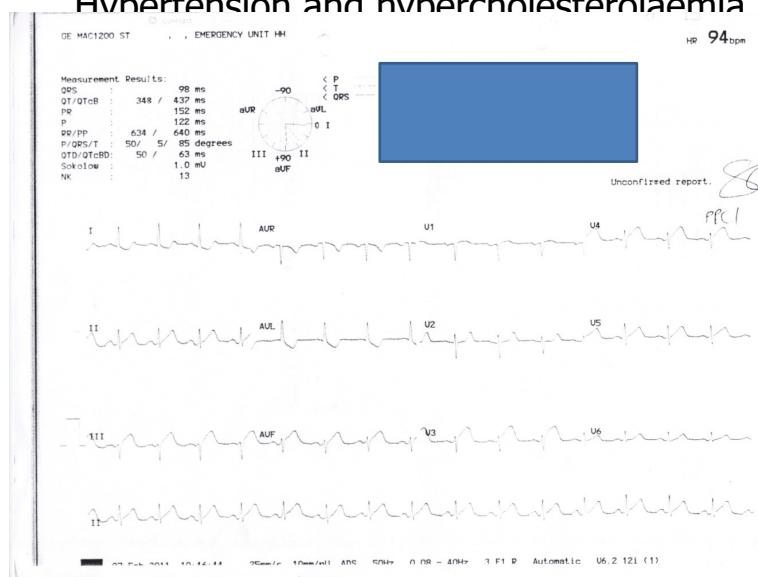


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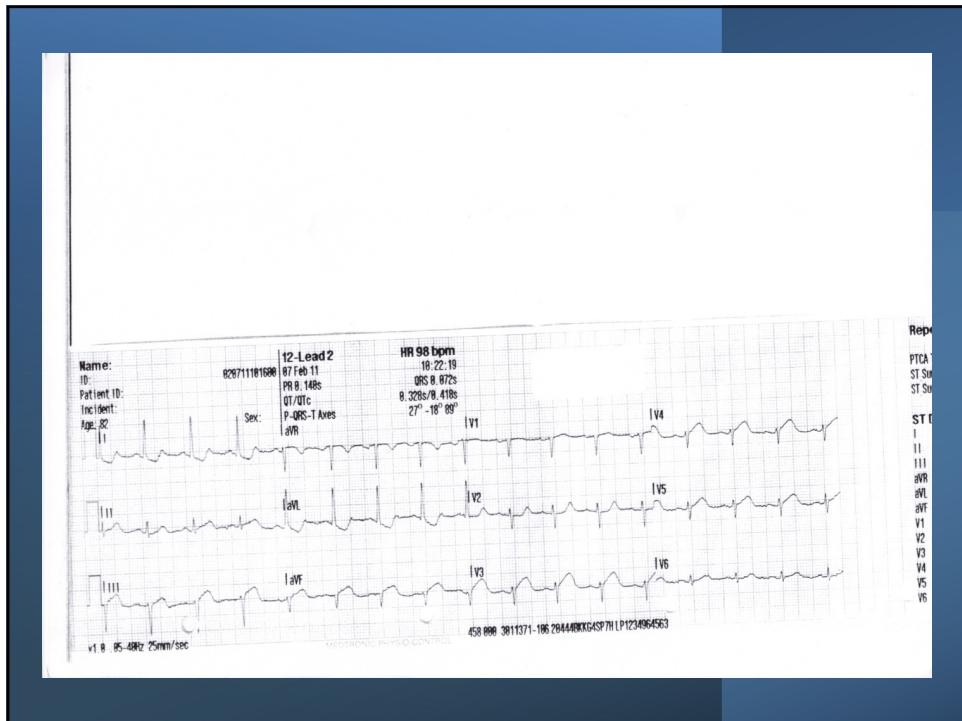


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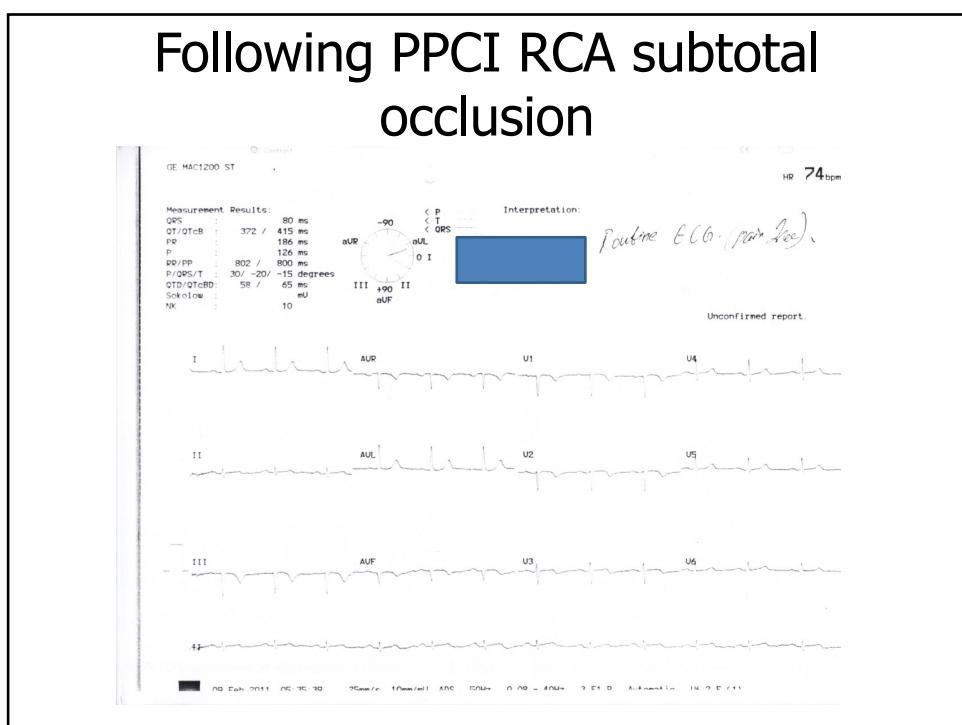
**82 yo lady with 4 h intermittent chest pain  
Hypertension and hypercholesterolaemia**



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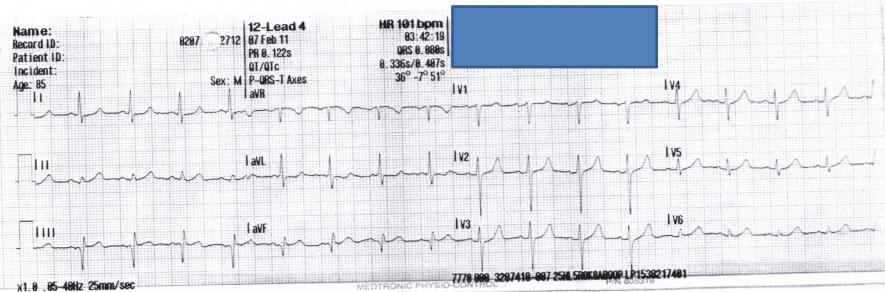
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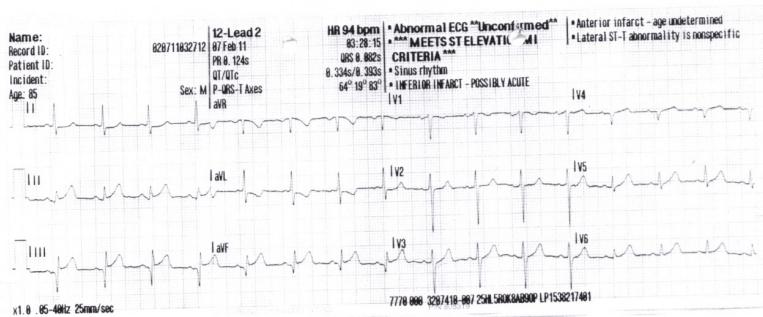
85 yo man woken with chest pain  
DM and hypertension  
Previous 2 stents in 2006 (well since)

- What to do?



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## Repeat ECG after 15 minutes:



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