

# **ECG Interpretation Course**

## **Small group discussion cases**

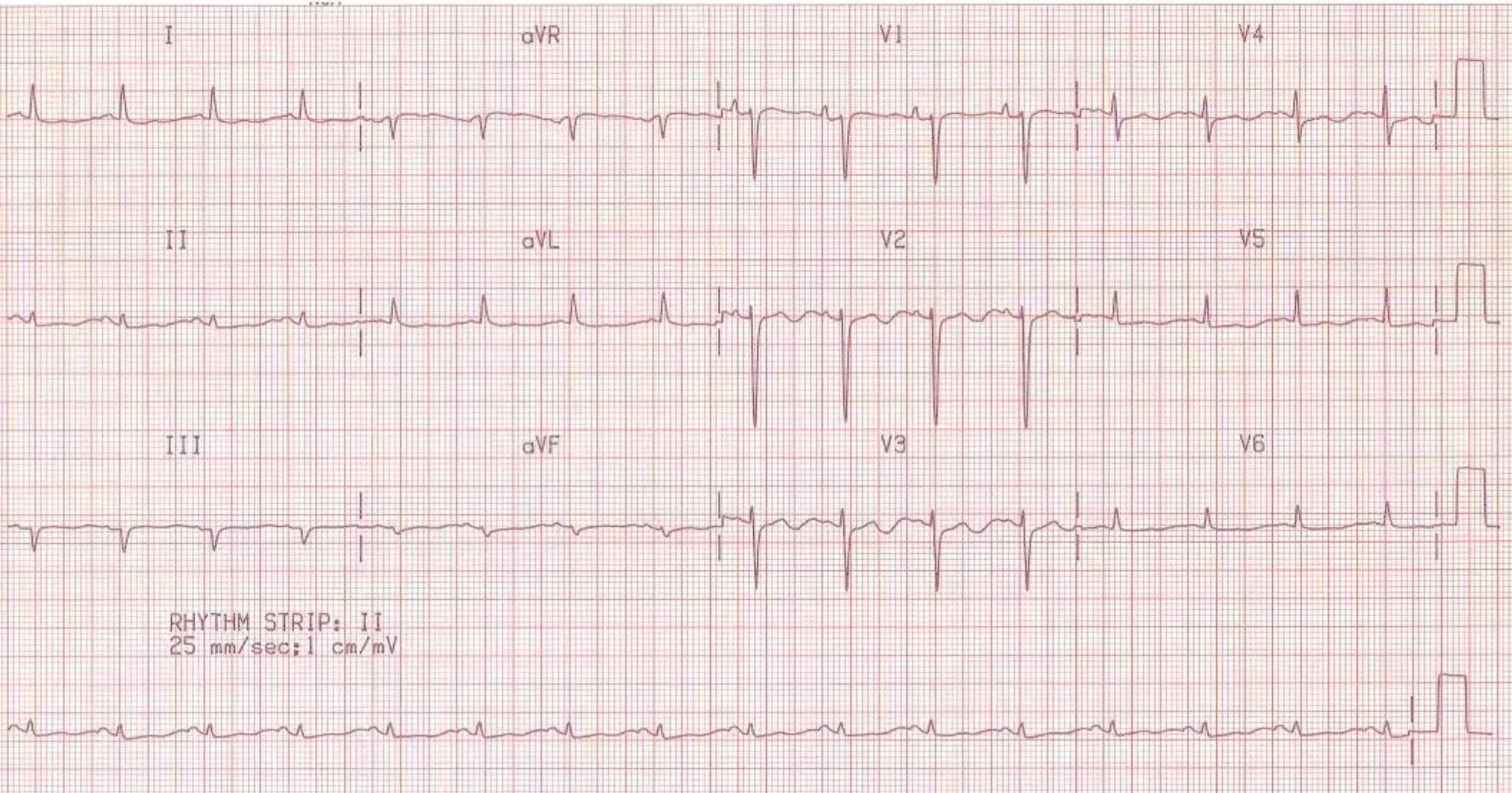
### **Chapter 5**

#### **Non-Specific ST Segment and T-Wave Changes**

**(for participant use)**

*This information is for individual use and not for further dissemination*

Case # 1 - Chapter 5  
73 year-old female with gastric hemorrhage



Case # 1 – Chapter 5

**73 year-old female with gastric hemorrhage**

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

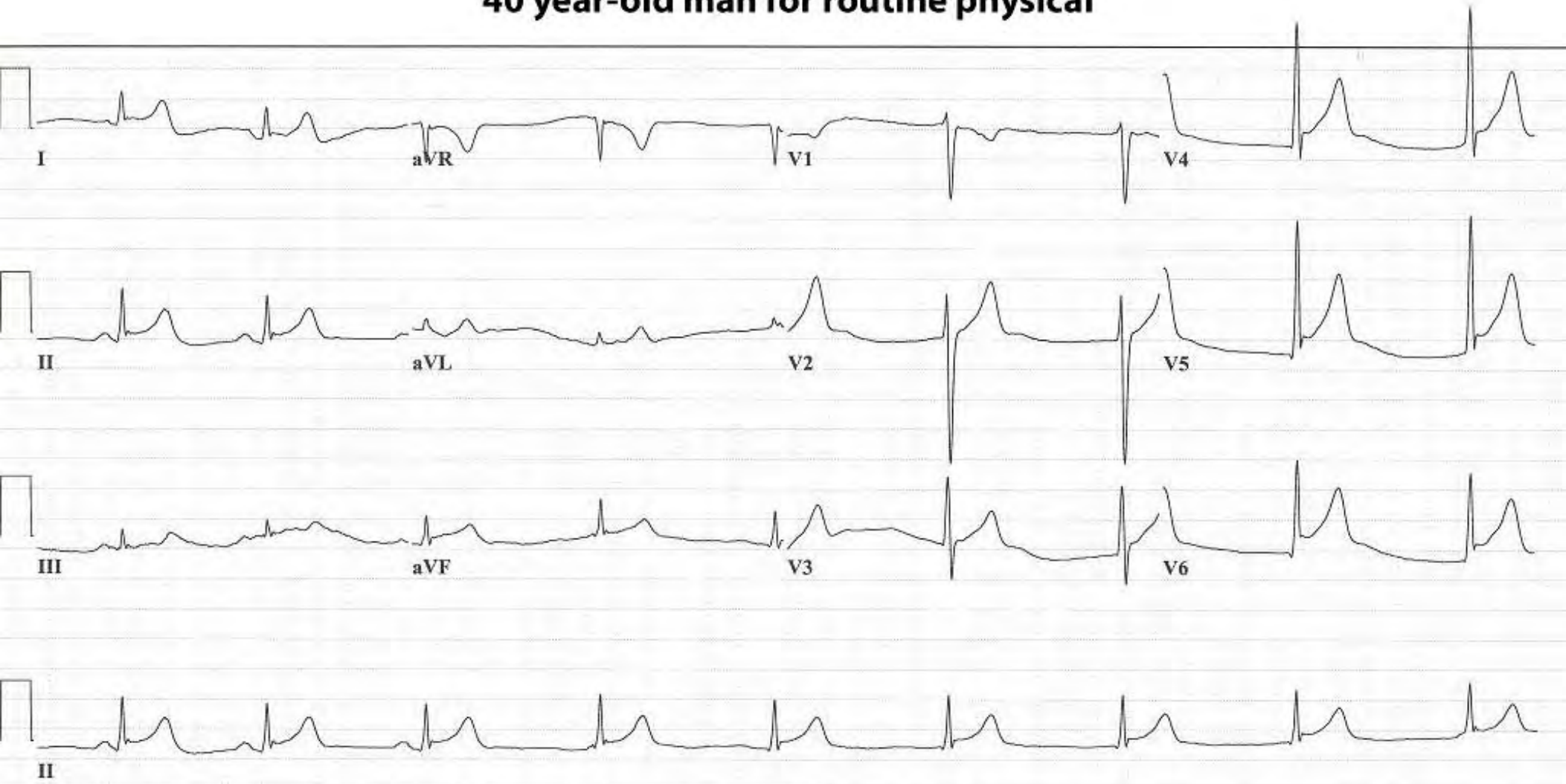
1. What serum value should you check?

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Case #2 - Chapter 5  
40 year-old man for routine physical



Case # 2 – Chapter 5

**40 year-old man for routine physical**

Rate:

PR:

QRS:

Axis:

Rhythm:

Interpretation:

Atrial:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

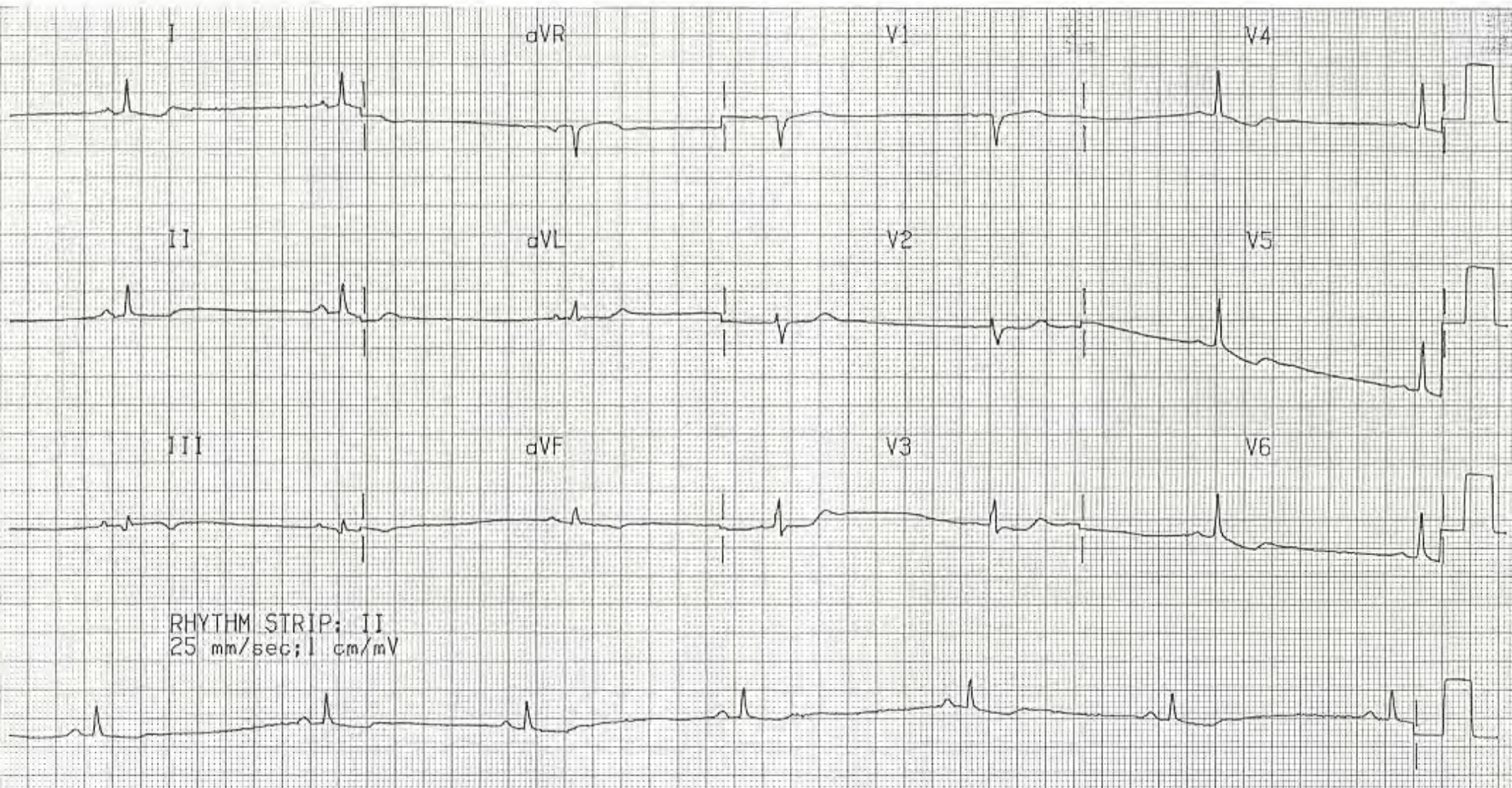
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\_\_\_\_\_

\_\_\_\_\_

Ventricular:\_\_\_\_\_

Case # 3 - Chapter 5  
**81 year-old woman with paroxysmal atrial fibrillation**



Case # 3 – Chapter 5

**81 year-old woman with paroxysmal atrial fibrillation**

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What medication level should be checked?

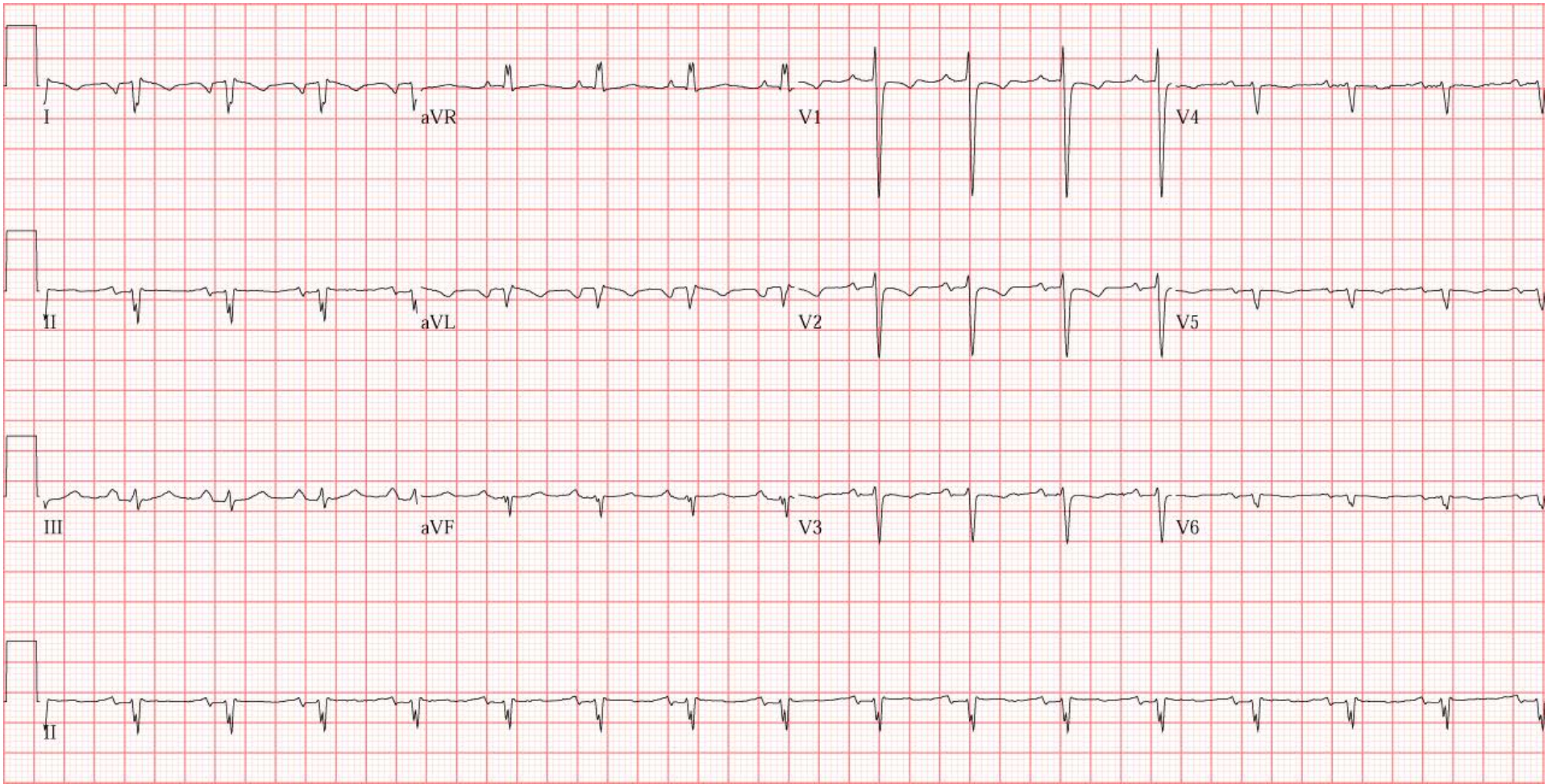
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# Case # 4a – Chapter 5

83 year-old man with an unusual heart





Case 4 a - Chapter 5

**83 year-old man with an unusual heart**

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

What is unusual about the p and QRS axis?

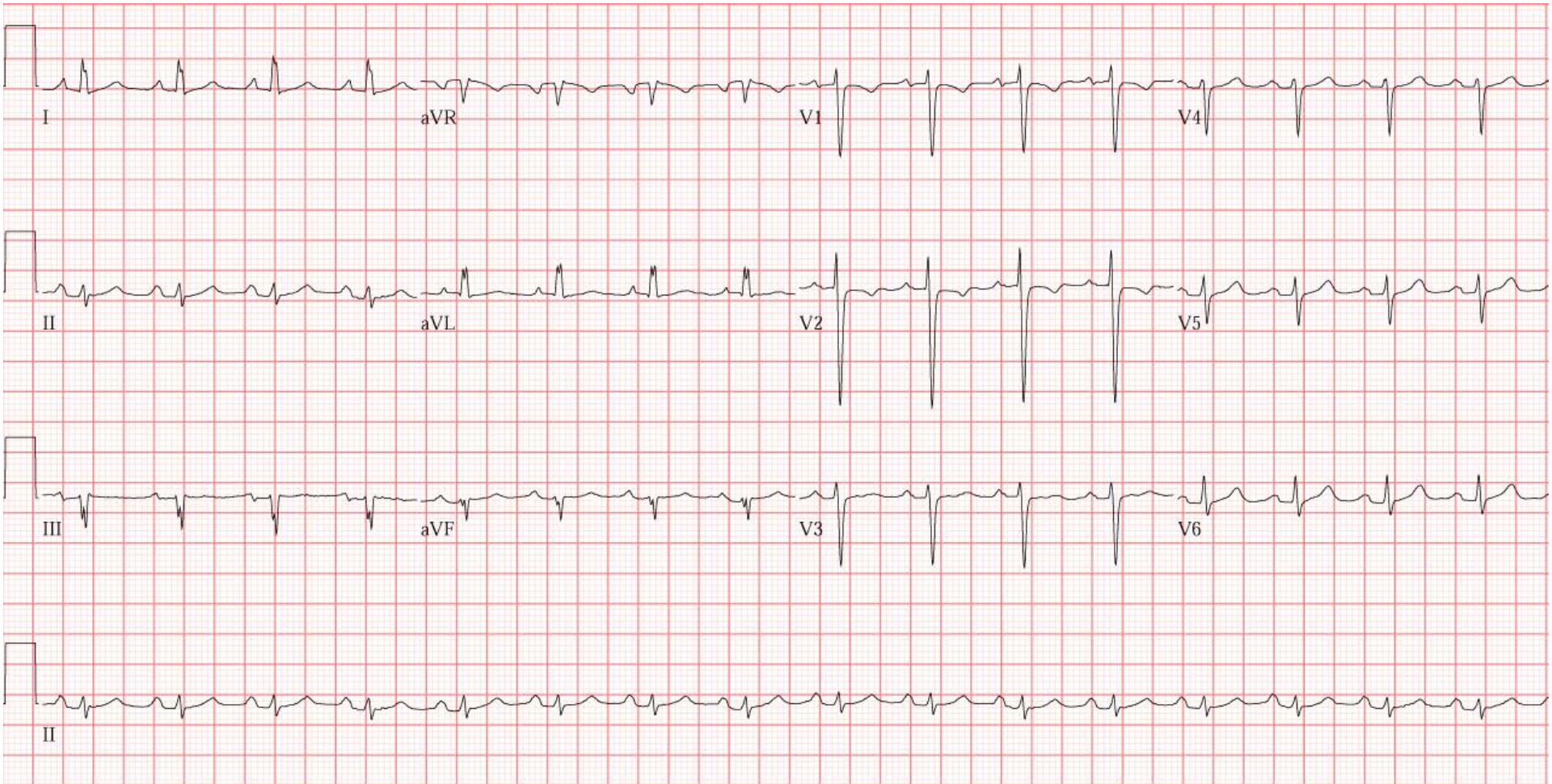
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# Case # 4b – Chapter 5

same patient



Case 4 b - Chapter 5

**Same patient**

Rate: \_\_\_\_\_  
PR: \_\_\_\_\_  
QRS: \_\_\_\_\_  
Axis: \_\_\_\_\_  
Rhythm: \_\_\_\_\_  
Interpretation: \_\_\_\_\_

Ventricular: \_\_\_\_\_

What changes have been made?

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# Case # 5 – Chapter 5

## History of Chronic Renal Failure



Case 5 - Chapter 5

**History of chronic renal failure**

Rate: \_\_\_\_\_  
PR: \_\_\_\_\_  
QRS: \_\_\_\_\_  
Axis: \_\_\_\_\_  
Rhythm: \_\_\_\_\_  
Interpretation: \_\_\_\_\_

Ventricular: \_\_\_\_\_

What serum measurements should be performed?

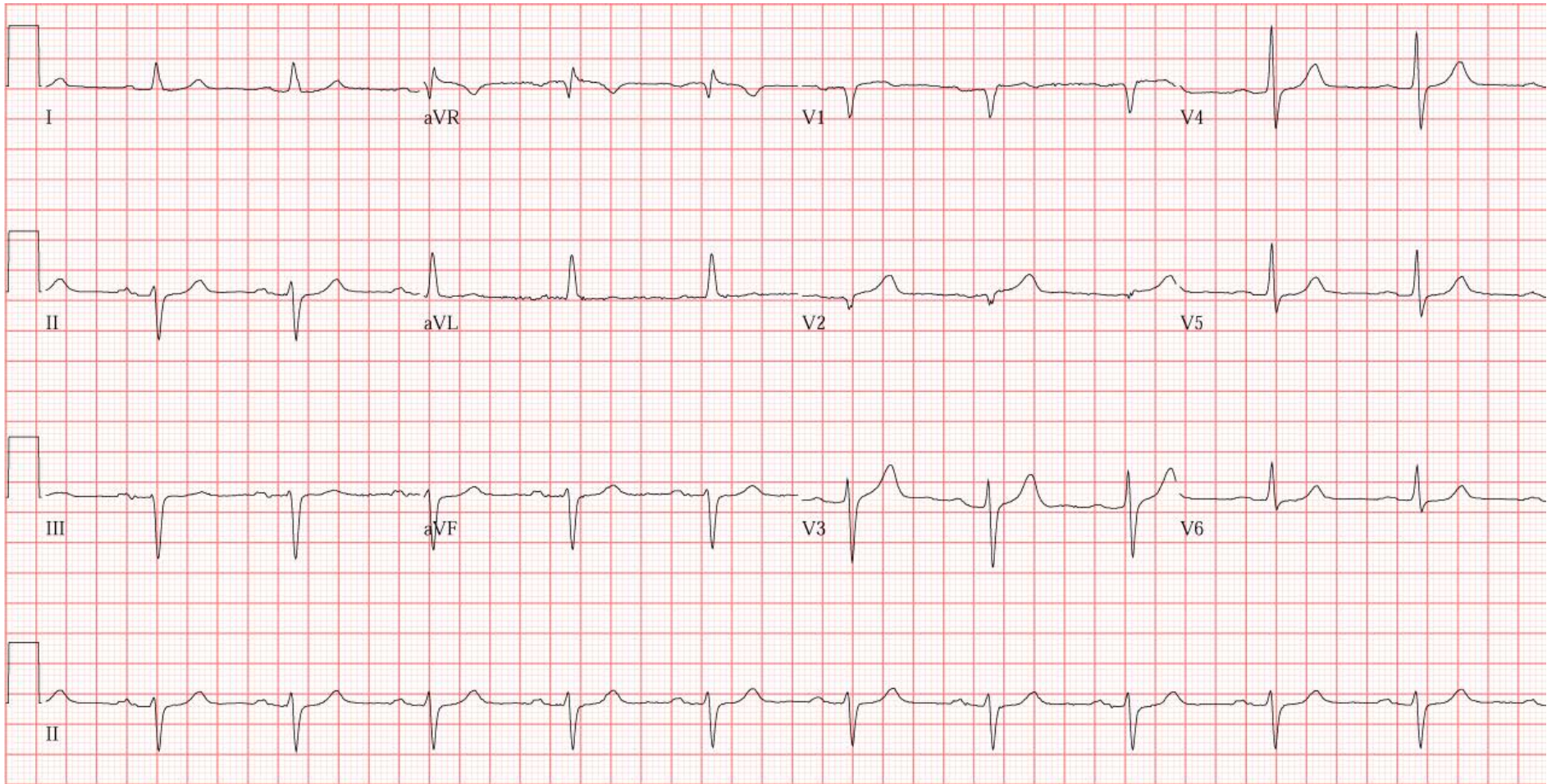
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# Case # 6 – Chapter 5

The same patient the following day post therapy



Case # 6 – Chapter 5

**Same patient the following day post therapy**

Rate:

PR:

QRS:

Axis:

Rhythm:

Interpretation:

Atrial:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

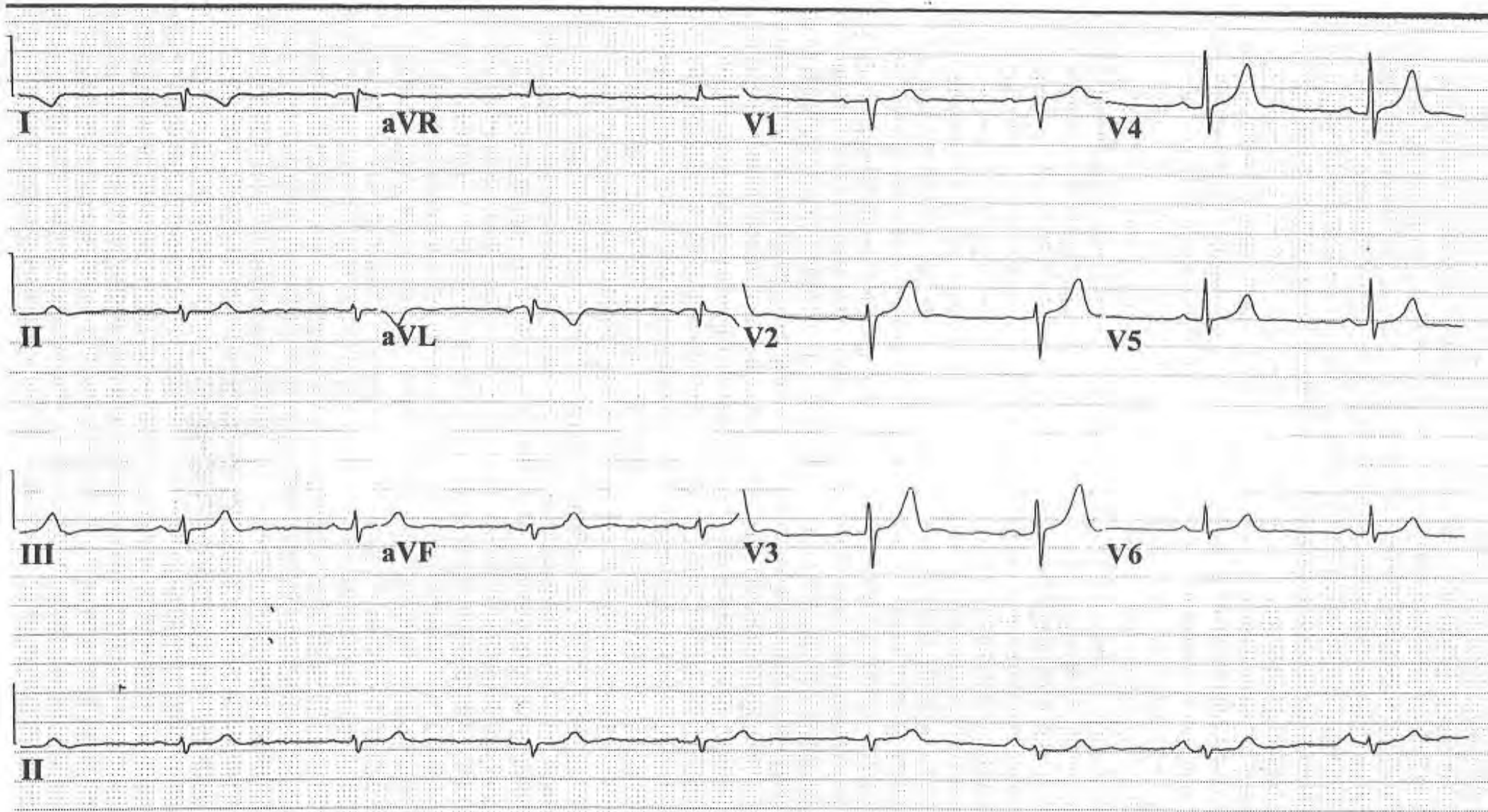
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Ventricular:\_\_\_\_\_

Case # 7a - Chapter 5  
55 year-old female. Routine ECG





Case # 7a – Chapter 5

**55 year-old female. Routine ECG**

Rate:

Atrial:\_\_\_\_\_

Ventricular:\_\_\_\_\_

PR:

\_\_\_\_\_

QRS:

\_\_\_\_\_

Axis:

\_\_\_\_\_

Rhythm:

\_\_\_\_\_

Interpretation:

\_\_\_\_\_

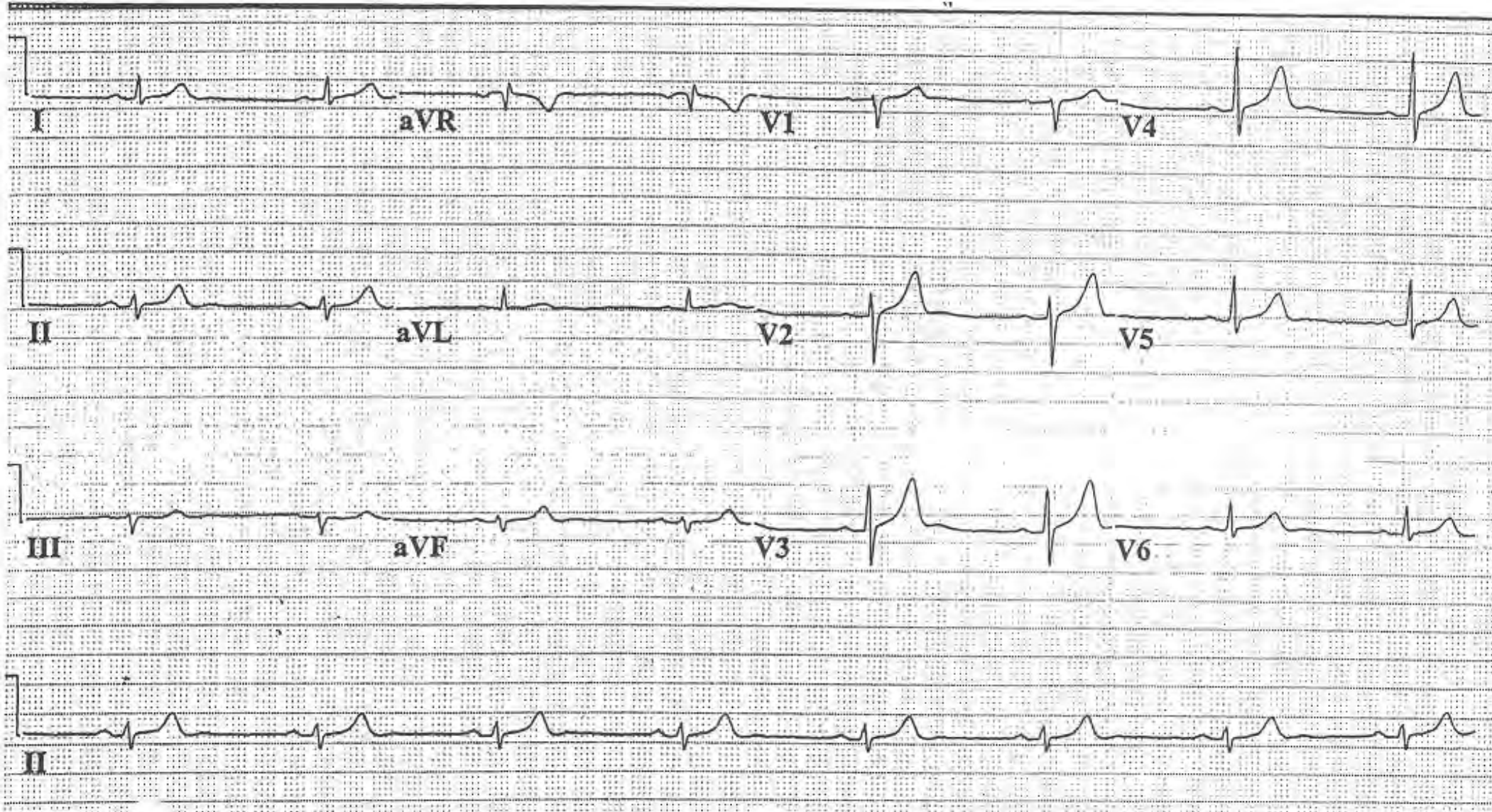
1. What is the axis? Is this a pathological or a technical problem?

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Case #7b - Chapter 5  
55 year-old female. Routine ECG. ECG retaken



Case # 7b – Chapter 5

**55 year-old female. Routine ECG. ECG retaken**

Rate:

PR:

QRS:

Axis:

Rhythm:

Interpretation:

Atrial:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

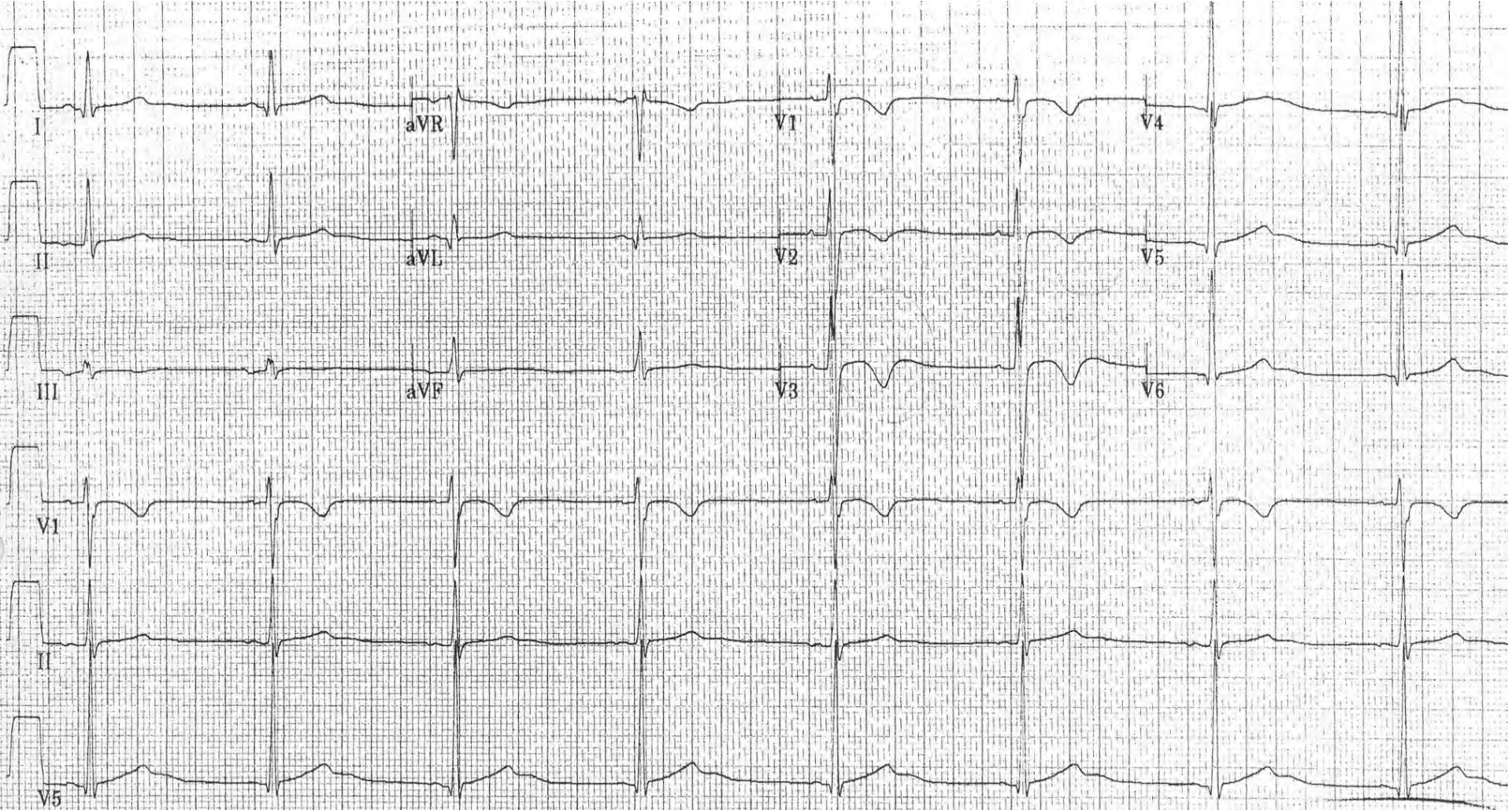
\_\_\_\_\_

\_\_\_\_\_

Ventricular:\_\_\_\_\_

# Case # 8 – Chapter 5

21 year-old female with syncope



Case 8 - Chapter 5

**21 year-old female with syncope**

Rate: \_\_\_\_\_ Atrial: \_\_\_\_\_ Ventricular: \_\_\_\_\_  
PR: \_\_\_\_\_  
QRS: \_\_\_\_\_  
Axis: \_\_\_\_\_  
Rhythm: \_\_\_\_\_  
Interpretation: \_\_\_\_\_

1. What leads show the longest intervals?

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2. Why is she having syncope?

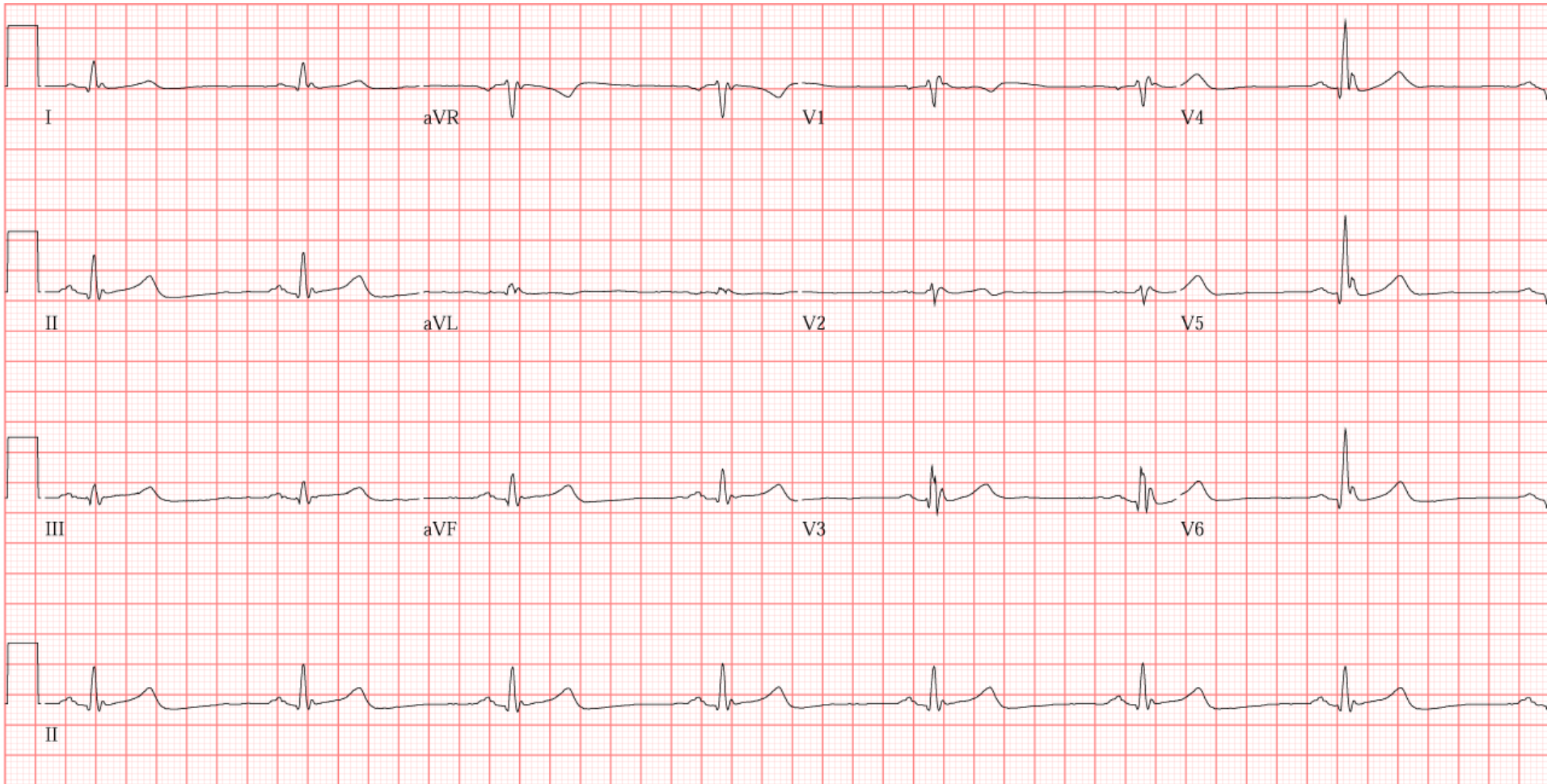
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# Case # 9 a – Chapter 5

60 year old man with a cardiac arrest and brain injury and therapeutically cooled to 34 degrees



Case 9 a - Chapter 5

**60 year-old man with a cardiac arrest and brain injury and therapeutically cooled to 34 degrees**

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

What is the positive deflection in lead V4 at the terminal part of the QRS?

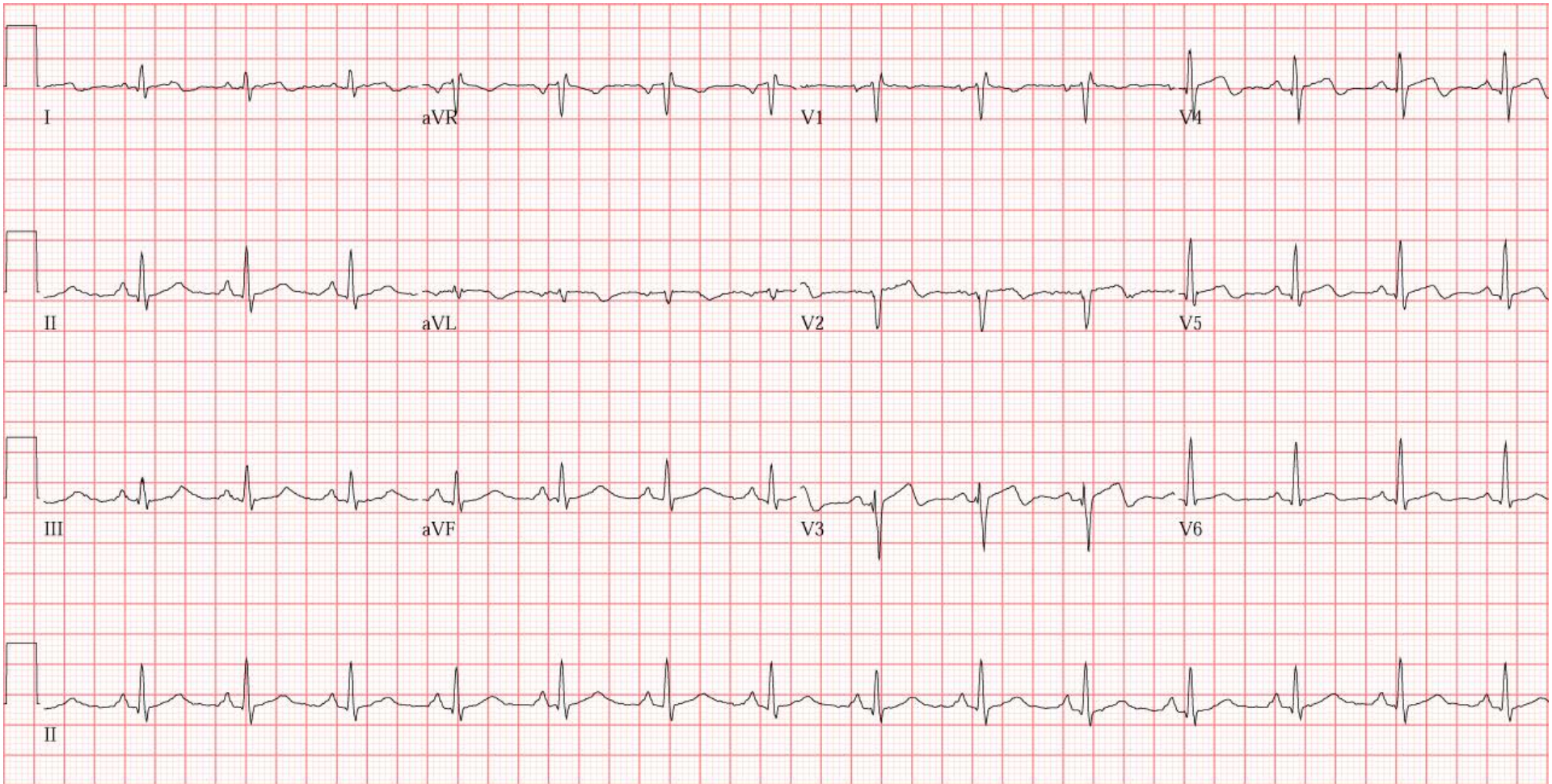
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# Case # 9' – Chapter 5

same patient the following day





Case 9 b - Chapter 5

**same patient the following day**

Rate: \_\_\_\_\_  
PR: \_\_\_\_\_  
QRS: \_\_\_\_\_  
Axis: \_\_\_\_\_  
Rhythm: \_\_\_\_\_  
Interpretation: \_\_\_\_\_

Ventricular: \_\_\_\_\_

What is the reason for the cardiac arrest?

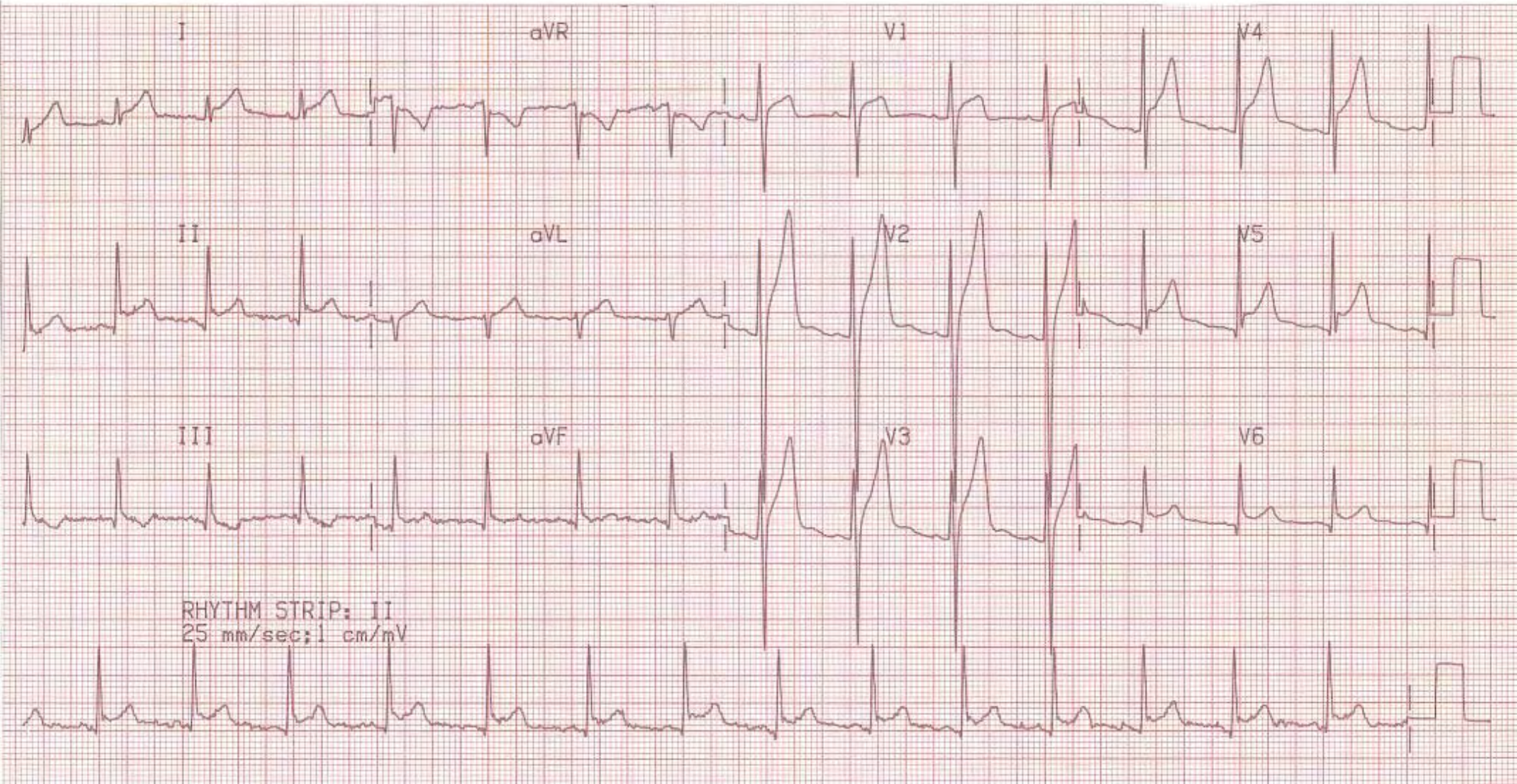
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Case # 10 - Chapter 5

**25 year-old man with a stab wound to the pericardium, diaphragm and abdomen**



Case # 10 - Chapter 5

**25 year-old man with a stab wound to the pericardium, diaphragm and abdomen**

Rate: \_\_\_\_\_ Atrial:\_\_\_\_\_ Ventricular:\_\_\_\_\_

PR: \_\_\_\_\_

QRS: \_\_\_\_\_

Axis: \_\_\_\_\_

Rhythm: \_\_\_\_\_

Interpretation: \_\_\_\_\_

What further ECG changes can occur with this condition?

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# Case # 11 – Chapter 5

## Unconscious in the Emergency Room



Case # 11 – Chapter 5

**Unconscious in the Emergency Room**

Rate:

Atrial:\_\_\_\_\_

Ventricular:\_\_\_\_\_

PR:

\_\_\_\_\_

QRS:

\_\_\_\_\_

Axis:

\_\_\_\_\_

Rhythm:

\_\_\_\_\_

Interpretation:

\_\_\_\_\_

1. What causes the T wave changes?

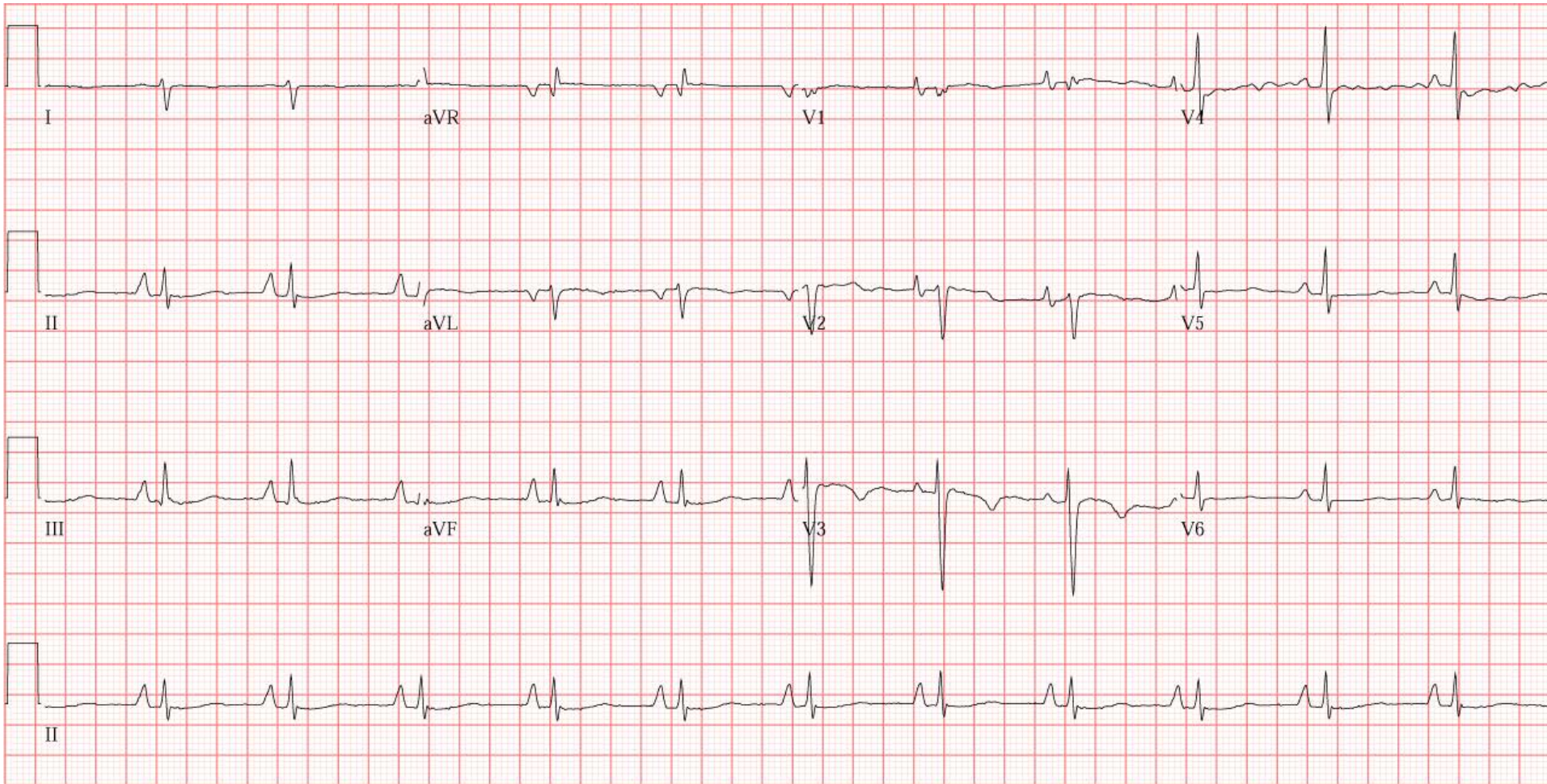
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# Case # 12 – Chapter 5

51 year-old woman with acute exacerbation of dyspnea



Case # 12 – Chapter 5

**50 year-old woman acute exacerbation of dyspnea**

Rate: \_\_\_\_\_ Atrial: \_\_\_\_\_ Ventricular: \_\_\_\_\_  
PR: \_\_\_\_\_  
QRS: \_\_\_\_\_  
Axis: \_\_\_\_\_  
Rhythm: \_\_\_\_\_  
Interpretation: \_\_\_\_\_

1. Is this likely to be a cardiac or respiratory cause of dyspnea?

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