ECG QUIZ

SAHA

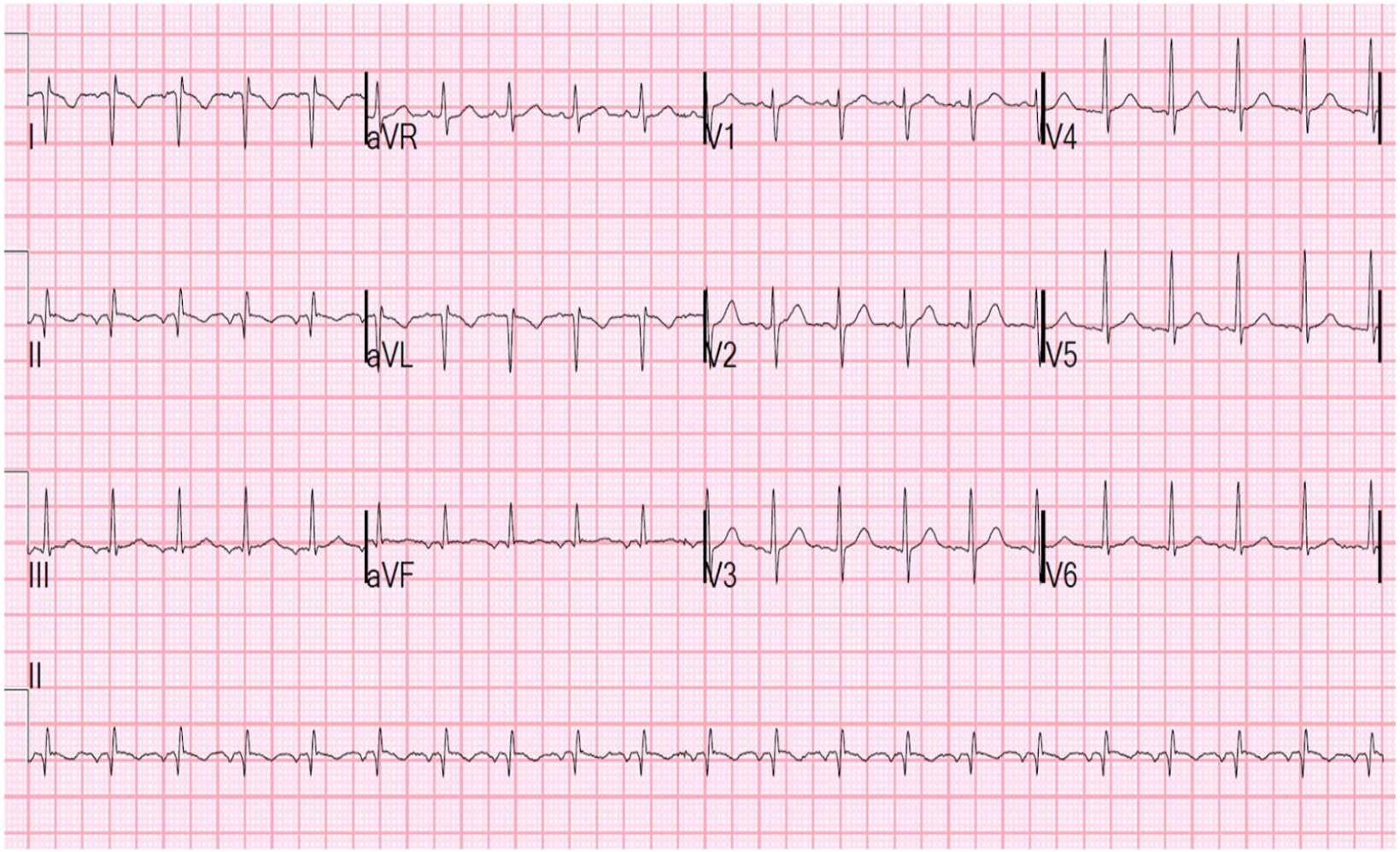
October 2015

brian vezi

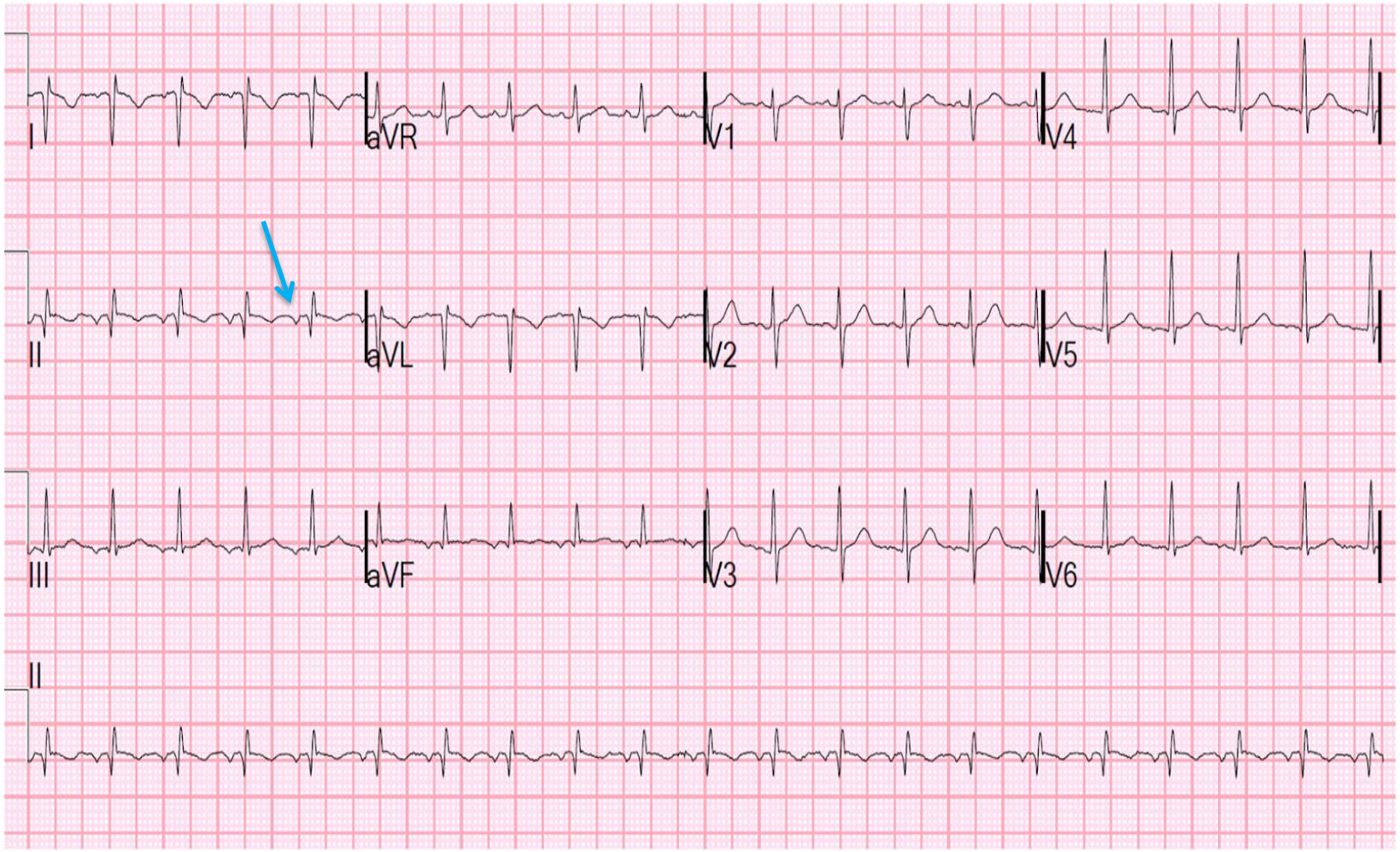
How *I* analyze the ECG

- **Rate** — **(6 x number of QRS complexes)**
- **Rhythm** — **How does P wave look in LII (+ve) = Sinus Rhythm**
- **P waves** — **Morphology? Leads II (2.5-small blocks) and V1 (mainly +ve)**
- **PR** — **Normal (130 – 200ms), short (<130ms) or long (>200ms)**
  - **PR segment (Pericarditis)**
- **QRS** — **V1, V6 (duration / morphology – LBBB or RBBB? / Q waves)**
- **Axis** — **Quick method (aVL & LII) or detailed**
- **ST** — **Normal; elevated or depressed**
- **T waves** — **Usually same direction as the QRS**
- **QT interval** — **Long QT syndromes (V5-6, LII)**

Is this Sinus Rhythm?



Is this Sinus Rhythm?



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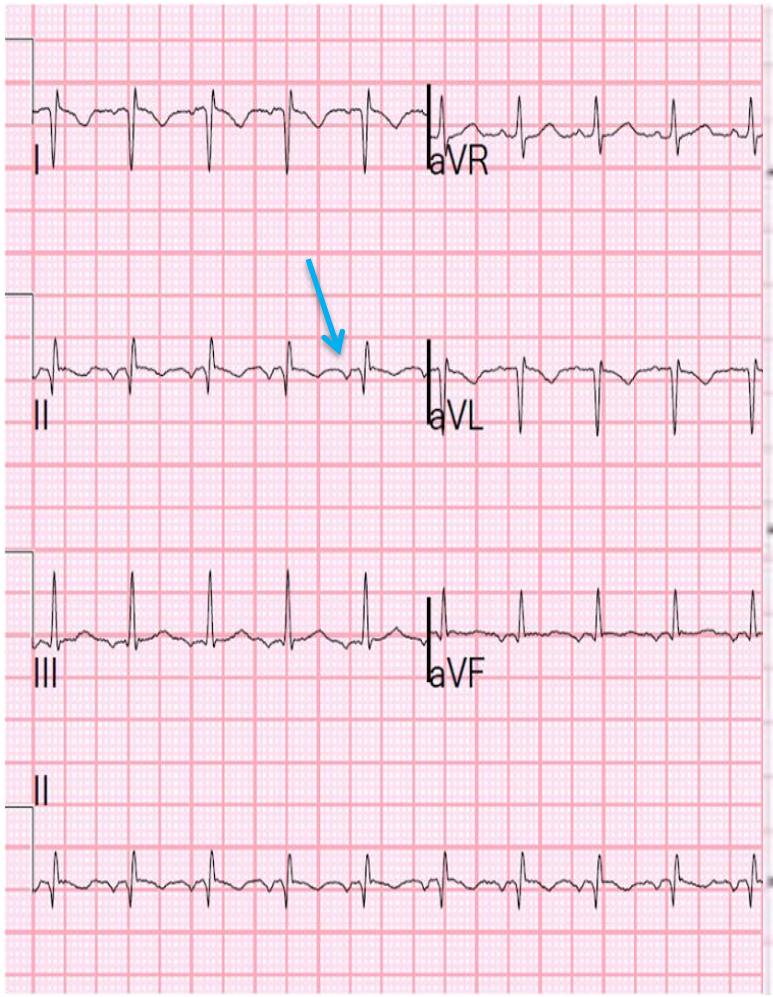
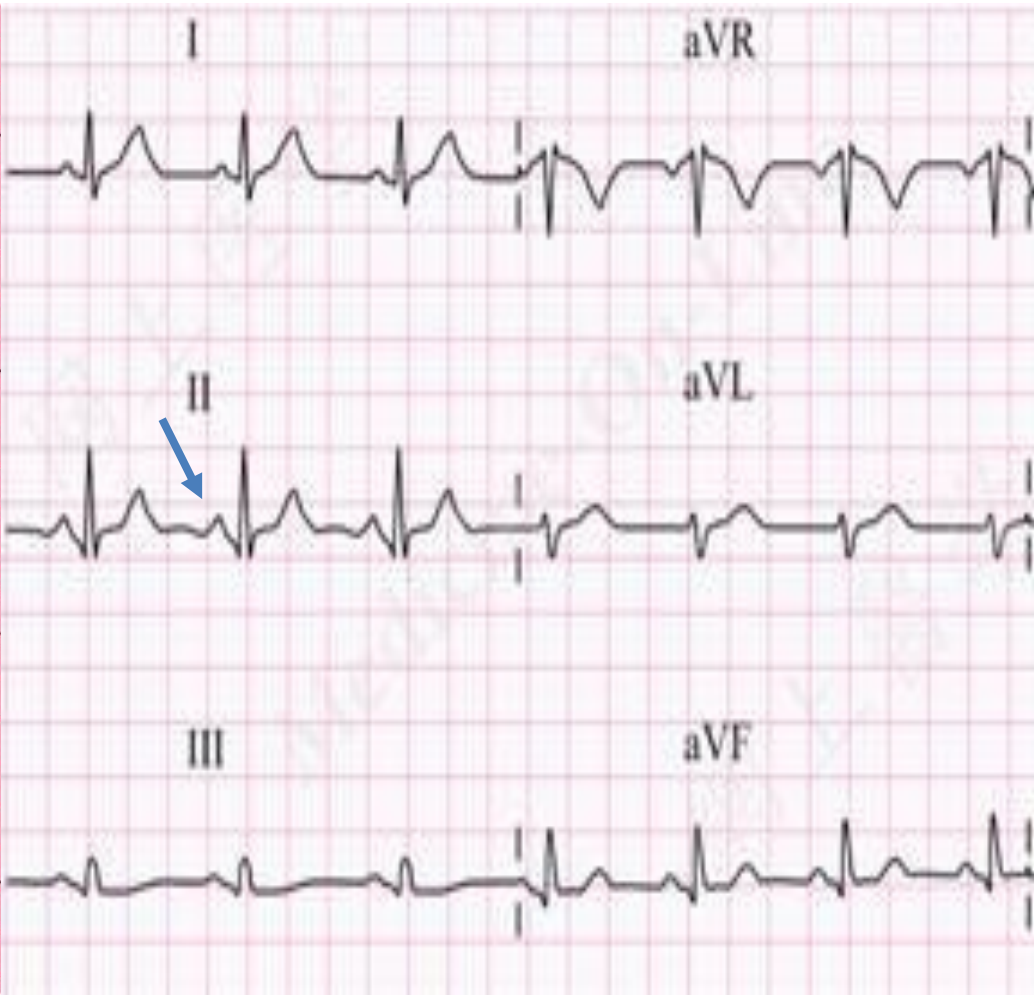
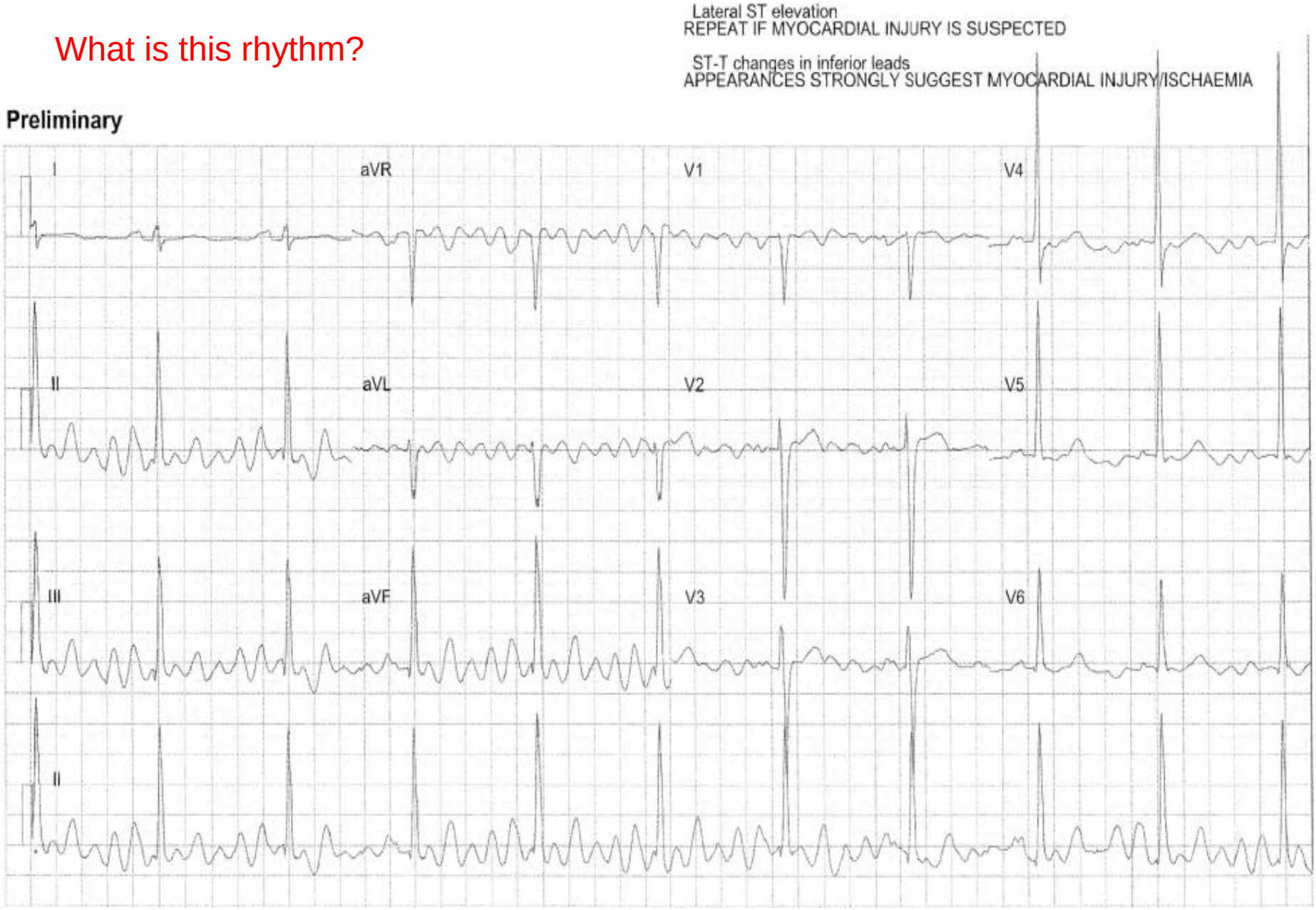




What is this rhythm?



ID: 15-[redacted] 1:24:27 EHHC Mrs K. Rassool

Vent. rate 46 bpm
PR interval 148 ms
QRS duration 142 ms
QT/QTc 430/376 ms
P-R-T axes 65 -80 78

Electronic ventricular pacemaker

BP: 144/91 (On Admission)

HR: 44

Temp: 36.1

Gm: 12,8mmol/l

Room:
Loc: 9

Technician:
Test ind:

Referred by:

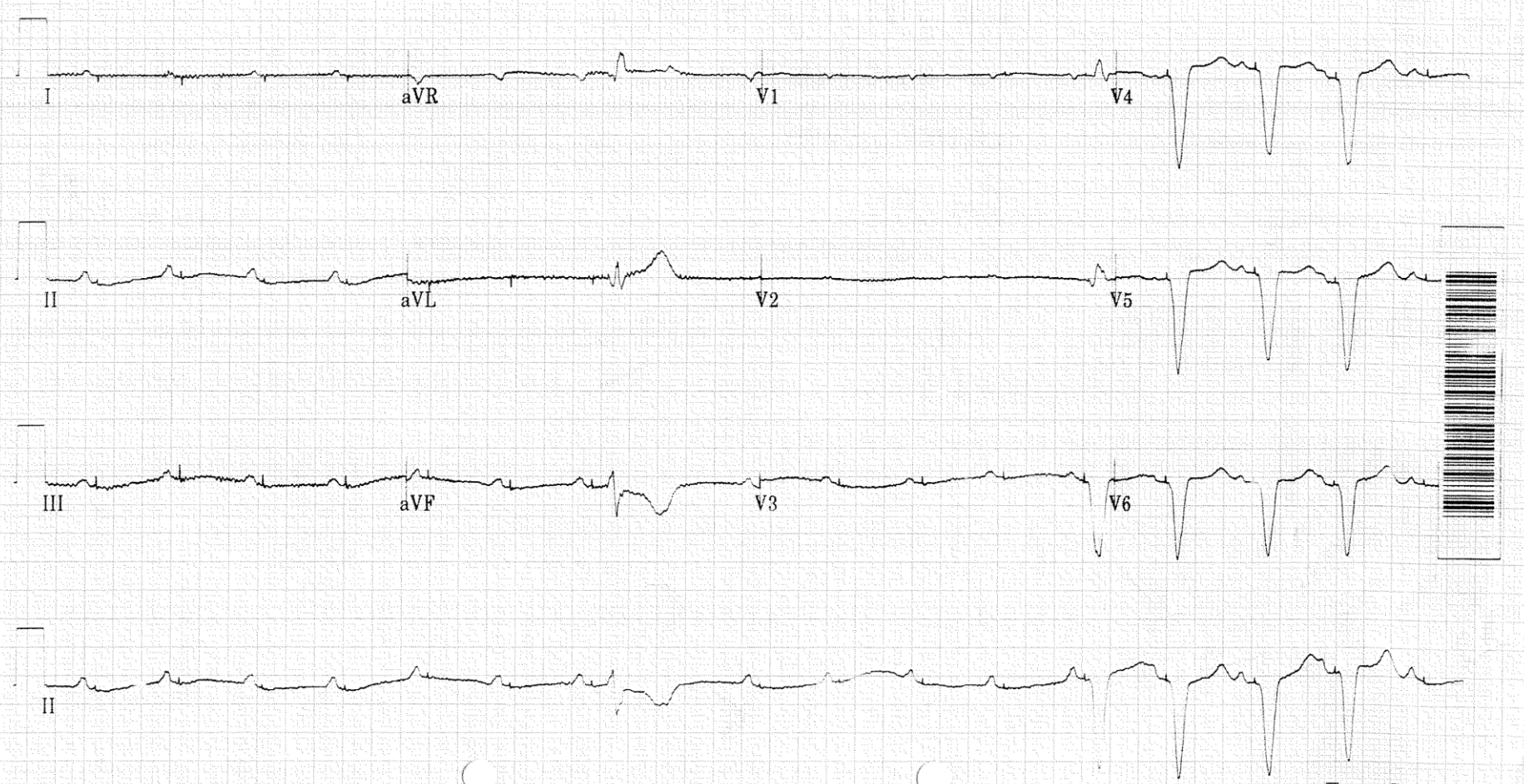
C/ :4147550 PMI:1052995 Dr. Naidoo, RY (5423805) 15.07.2015 01:43:37
R/A:
Ethekwini Hospital & Heart Centre
PR:0580000305251 Tel:031-5812400 Fax:031-5812697

[redacted]

MAIN MEMBER: [redacted]
MEMBER ID#: 5401305042082
DEPENDANT: 01
AUTHORISATION #:

PHOENIX
REDFERN
4068

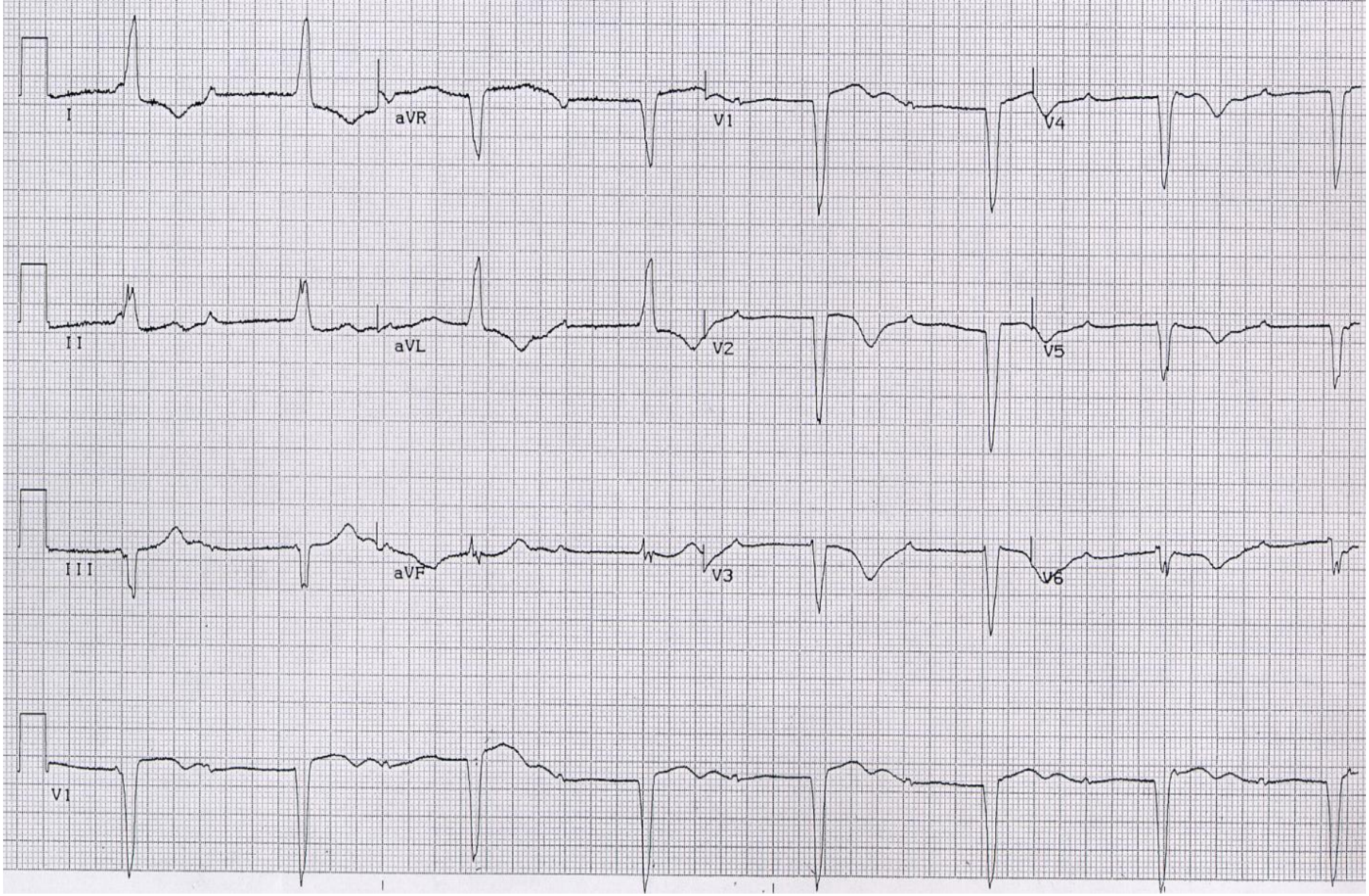
IN



150 Hz 25.0 mm/s 10.0 mm/mV 4 by 2.5s + 1 rhythm MAC35 009B 12SL™v239

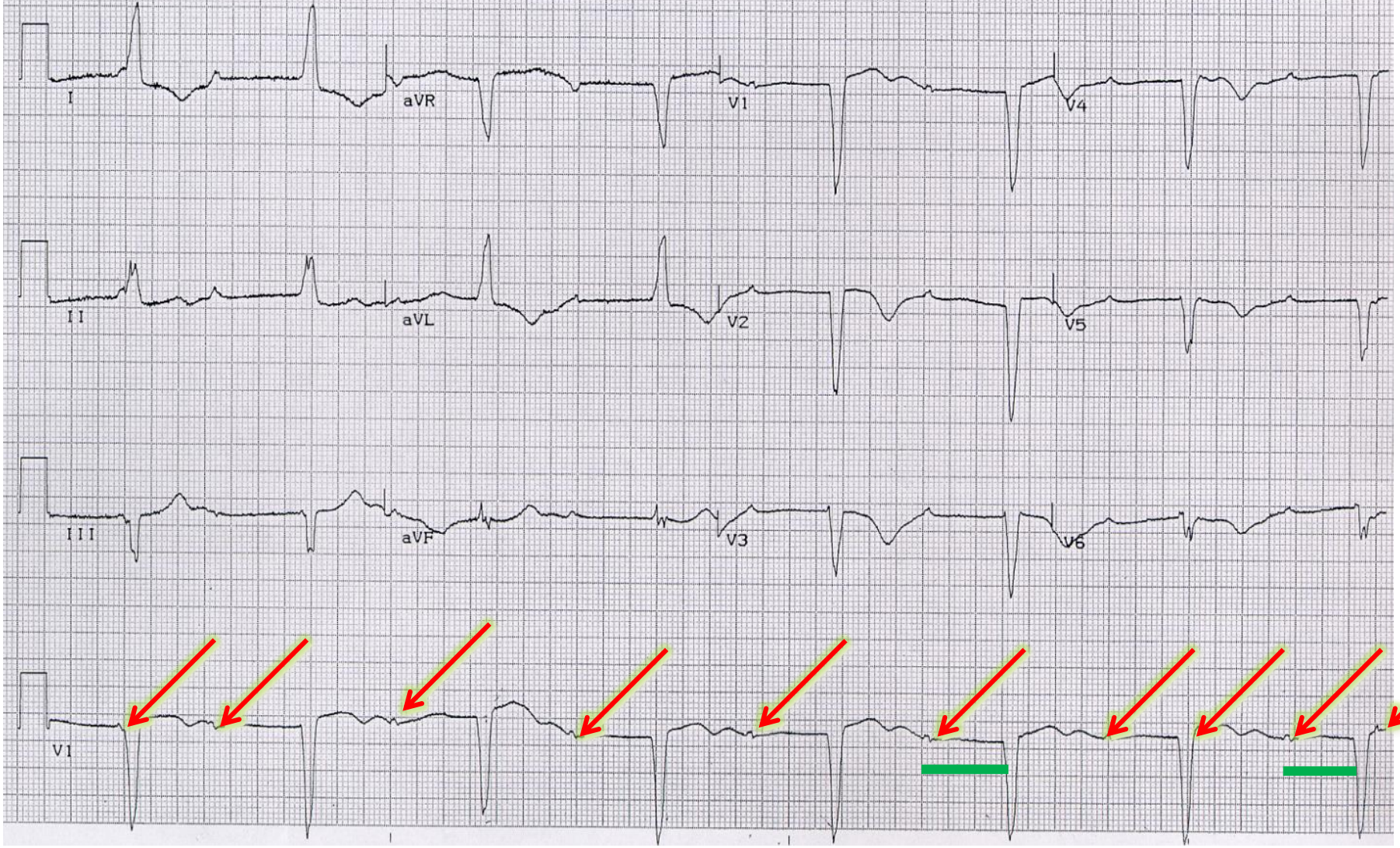
Bradycardia
Pattern Recognition & Management

- If slow and regular
  - Complete Heart Block
  - Mobitz II
  - Sinus Bradycardia
- If slow, irregular & ‘groups-of-QRS’
  - Mobitz I
- If you see 3 P waves unconducted = High AV block



76 yr old man: complains of feeling very tired and short of breath on minimal exertion.
Which ONE of the following is the <u>best</u> ECG diagnosis?

a. First degree heart block
b. Complete heart block/3^{o} AV block
c. Sinus bradycardia with first degree heart block

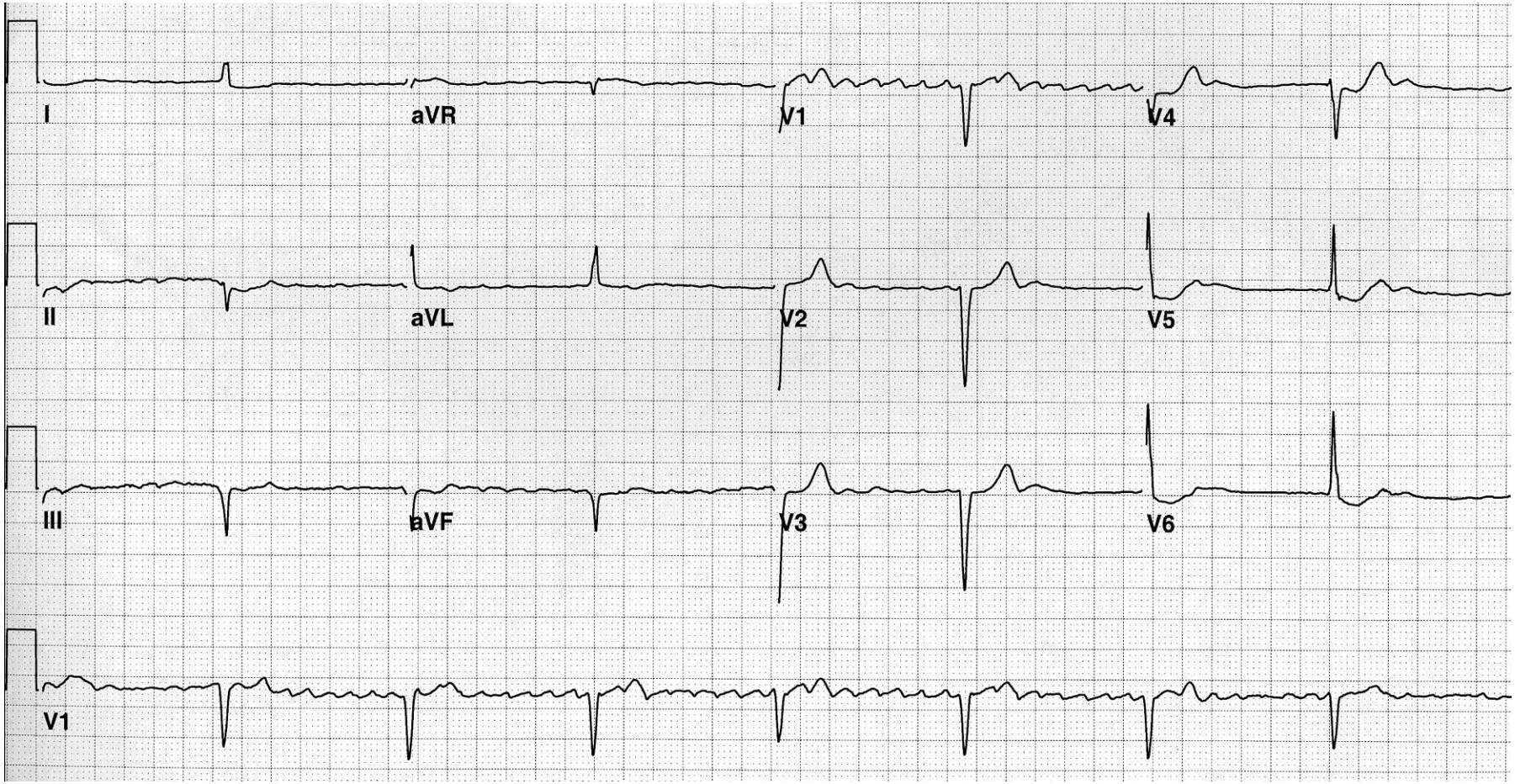


76 yr old man: complains of feeling very tired and short of breath on minimal exertion.
Which ONE of the following is the best ECG diagnosis?

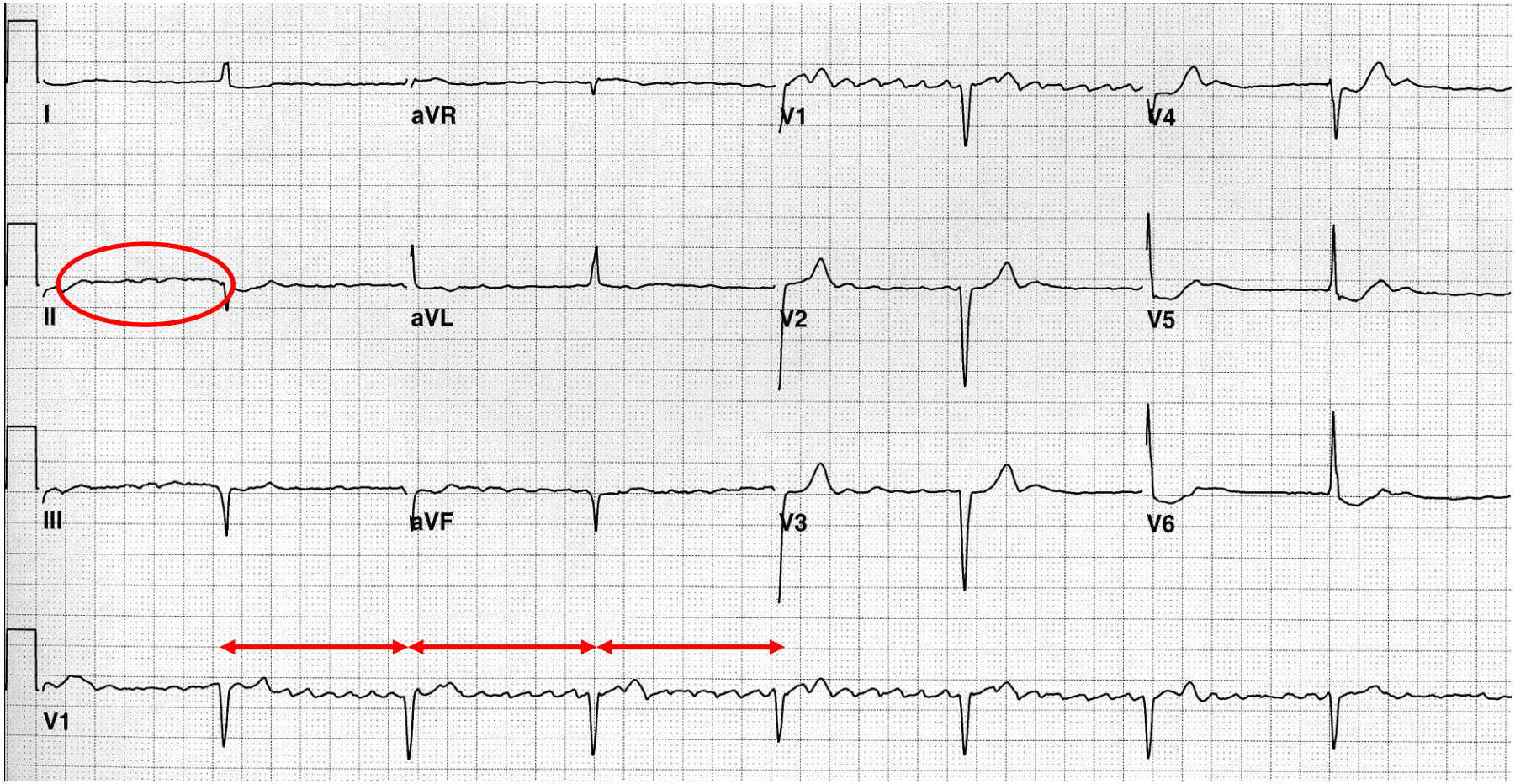
(b) Complete heart block/3° AV block – blocked P's hidden by QRS/ST segment, + AV dissociation


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II

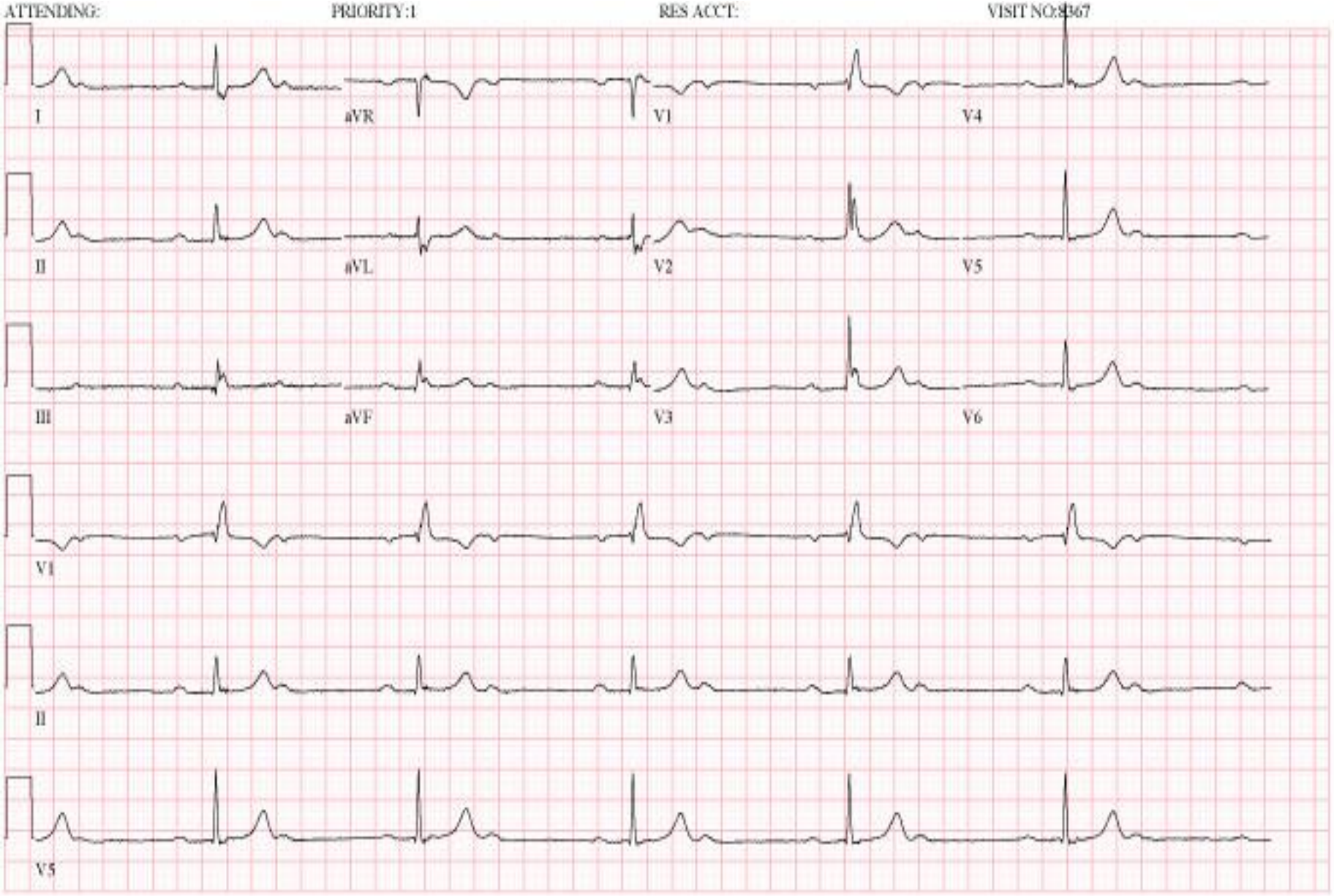
What is this rhythm?



What is this rhythm?



c/o fatigue


ATTENDING:
PRIORITY:1
RES ACCT:
VISIT NO:8367
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1
II
V5

c/o fatigue


ATTENDING:
PRIORITY:1
RES ACCT:
VISIT NO:8367
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1
II
V5

HR 59/min

Intervals:
RR 1015 ms
P - ms
PR - ms
QRS 104 ms
QT 388 ms
QTC 388 ms

Axis:
P - °
QRS 79 °
T 43 °

P (II) - mV
S (V1) -1.69 mV
R (V5) 4.30 mV
Sokol. 7.61 mV

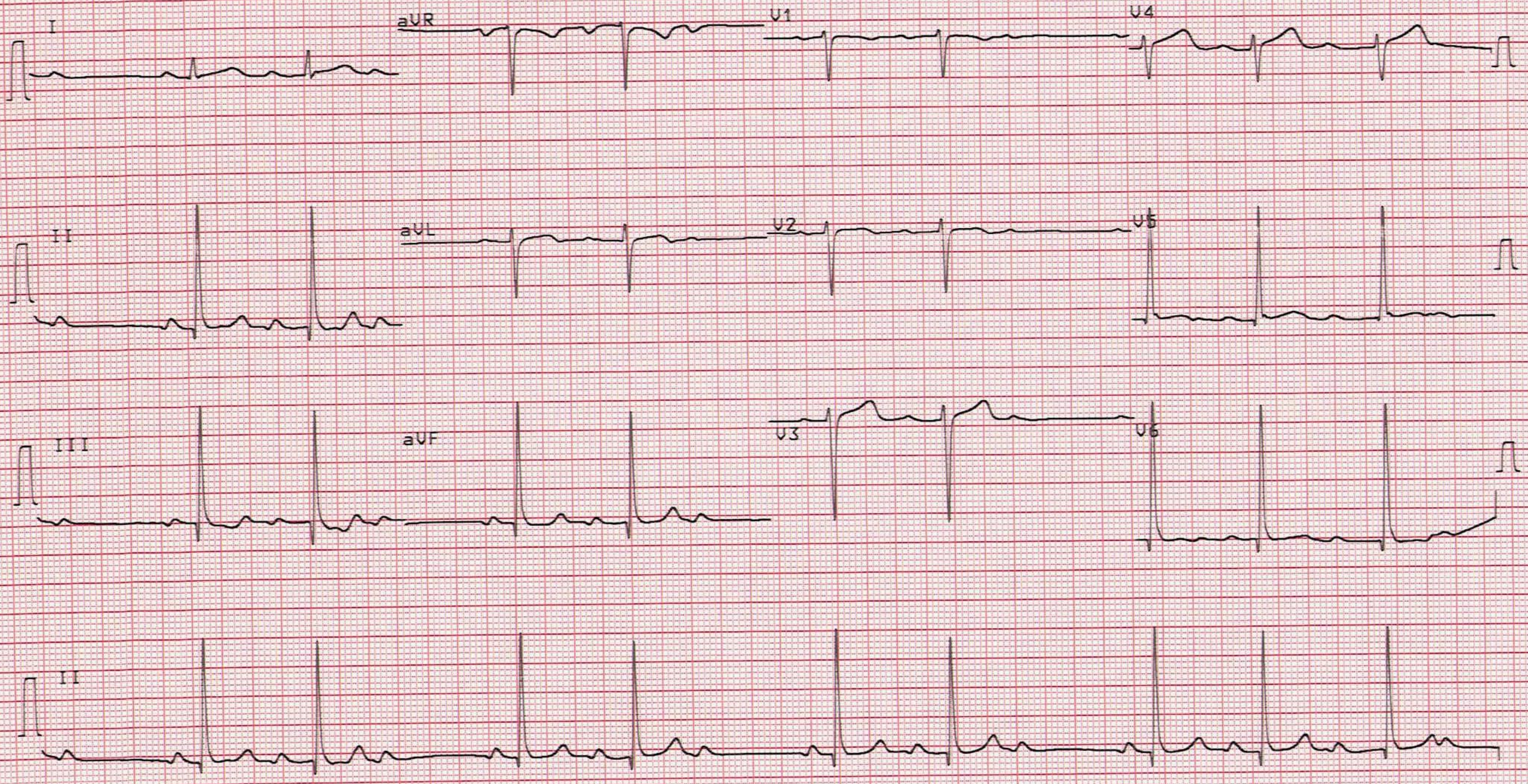
IRREGULAR RHYTHM, NO P-WAVE FOUND
AMPLITUDE CRITERIA FOR LVH
POSSIBLY ABNORMAL ECG

5.78

UNCONFIRMED REPORT

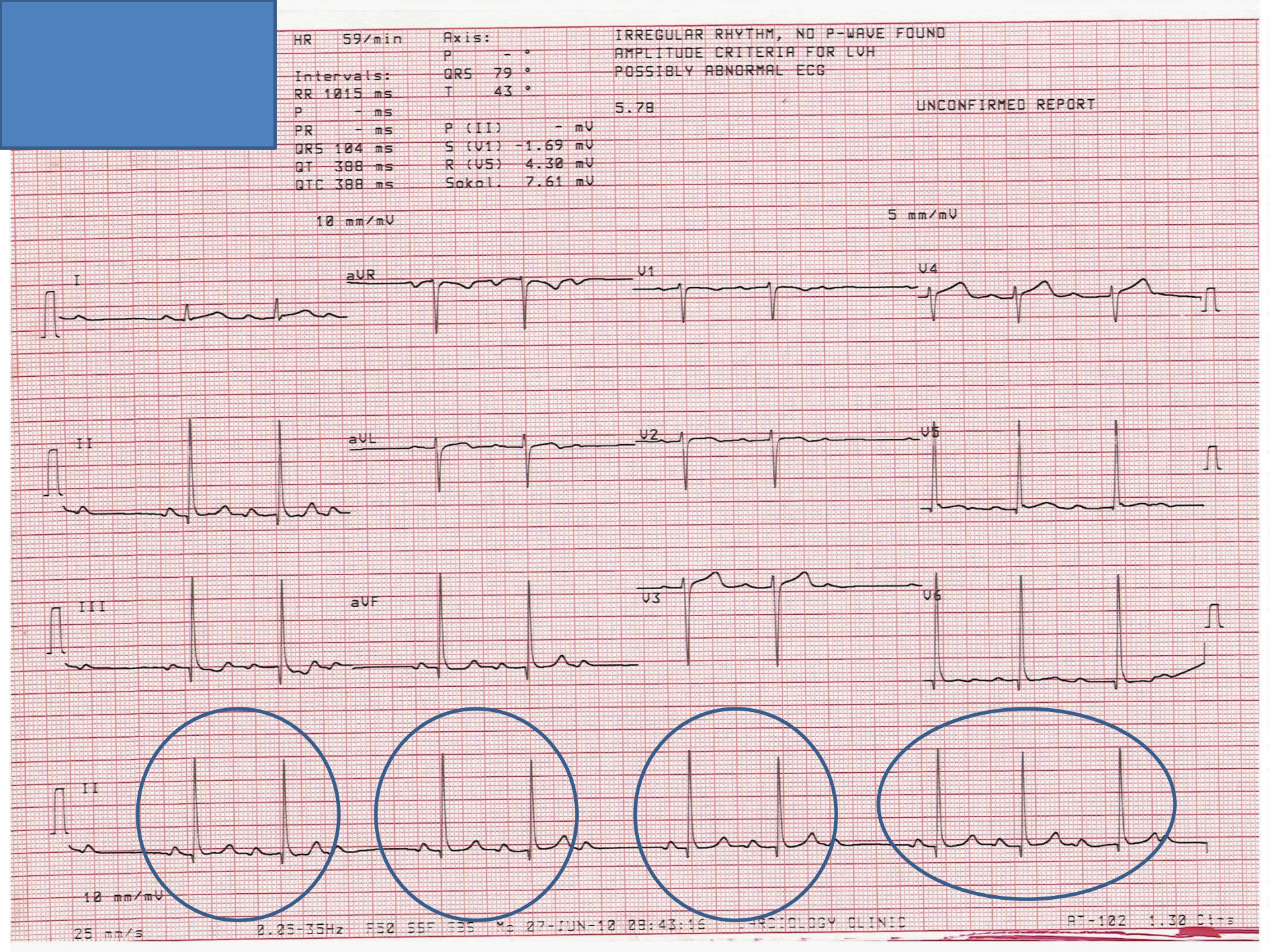
10 mm/mV

5 mm/mV



10 mm/mV

25 mm/s 0.05-35Hz F50 55F 535 Mo 07-JUN-10 09:43:16 CARDIOLOGY CLINIC AT-102 1.30 Cits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I
aVR
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V3
V6
II
10 mm/mV
25 mm/s
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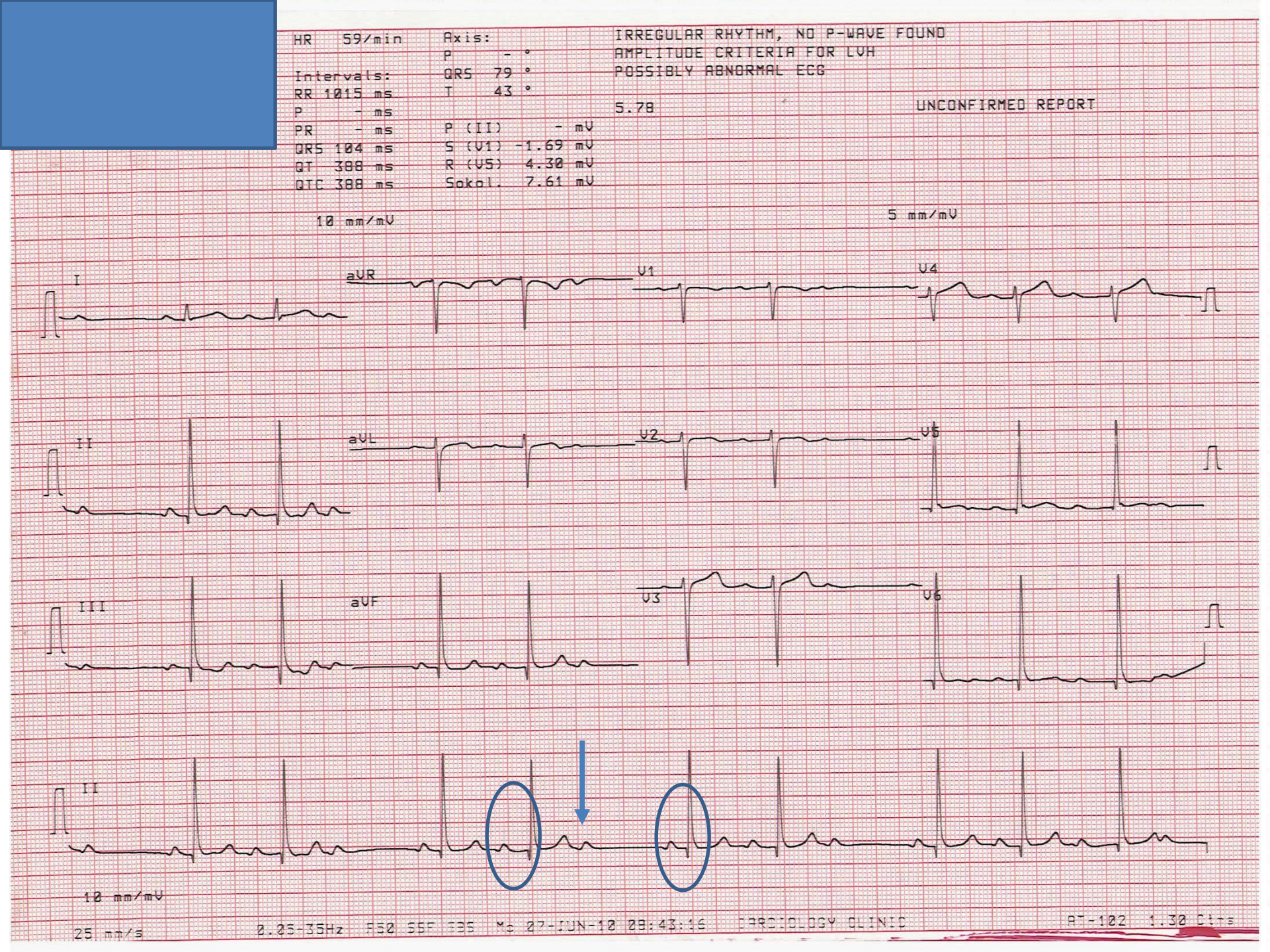
07-JUN-10 09:43:16
CARDIOLOGY CLINIC
AT-102
1.30 Cits


HR 59/min
Axis:
P - °
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Intervals:
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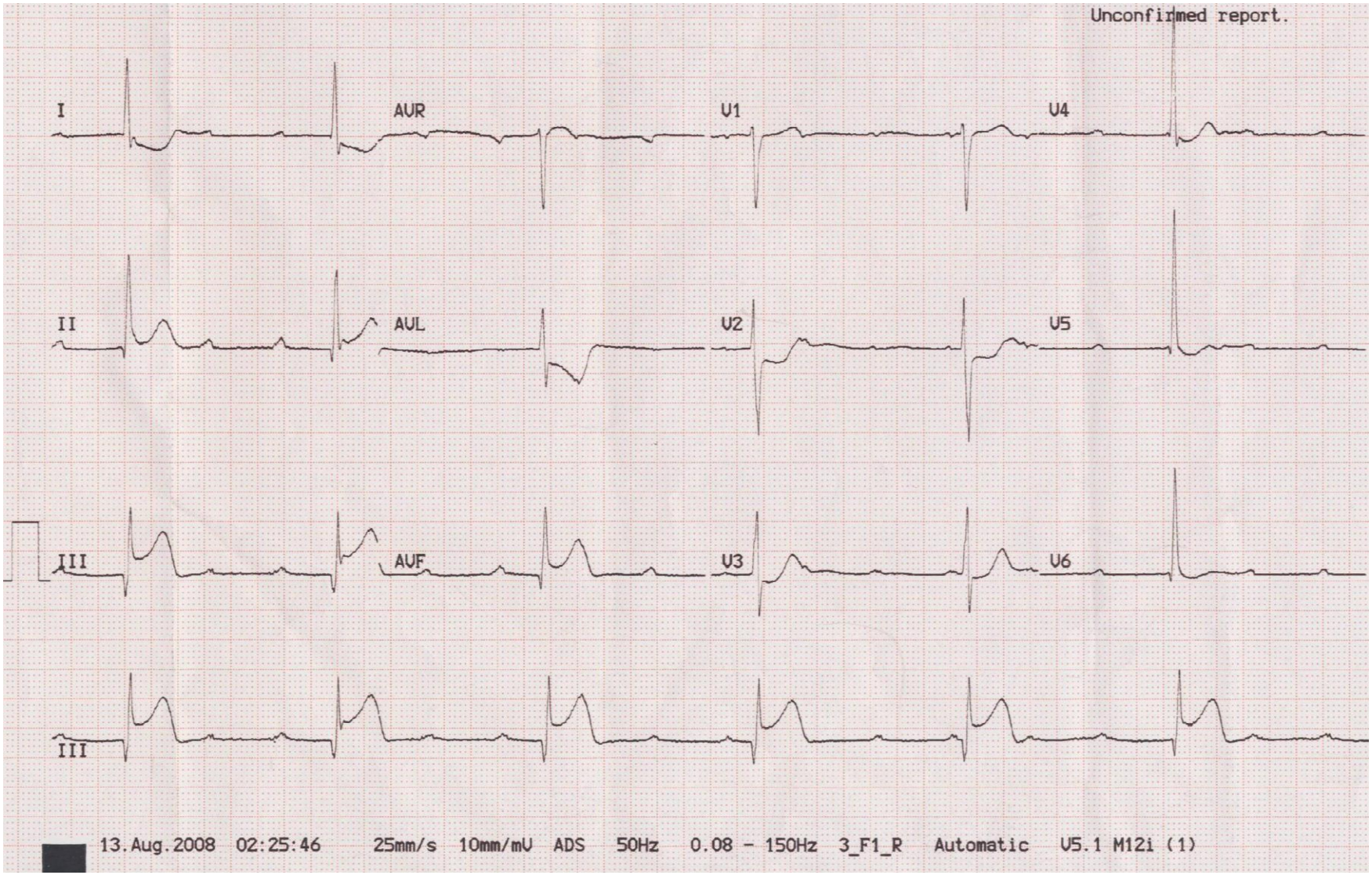
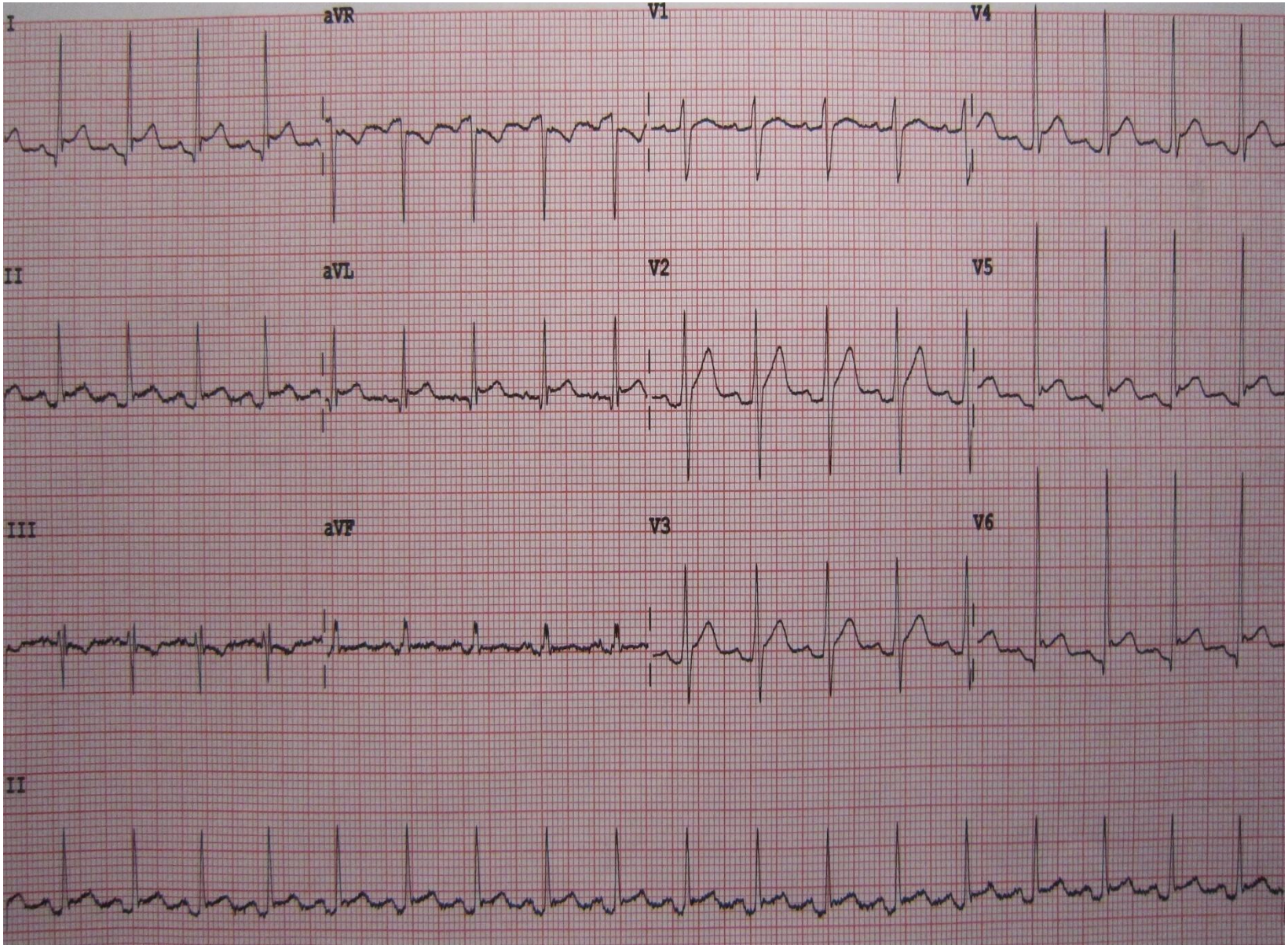
10 mm/mV
5 mm/mV
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
10 mm/mV
25 mm/s
0.25-35Hz
CARDIOLOGY CLINIC
AT-102
1.30 Cits

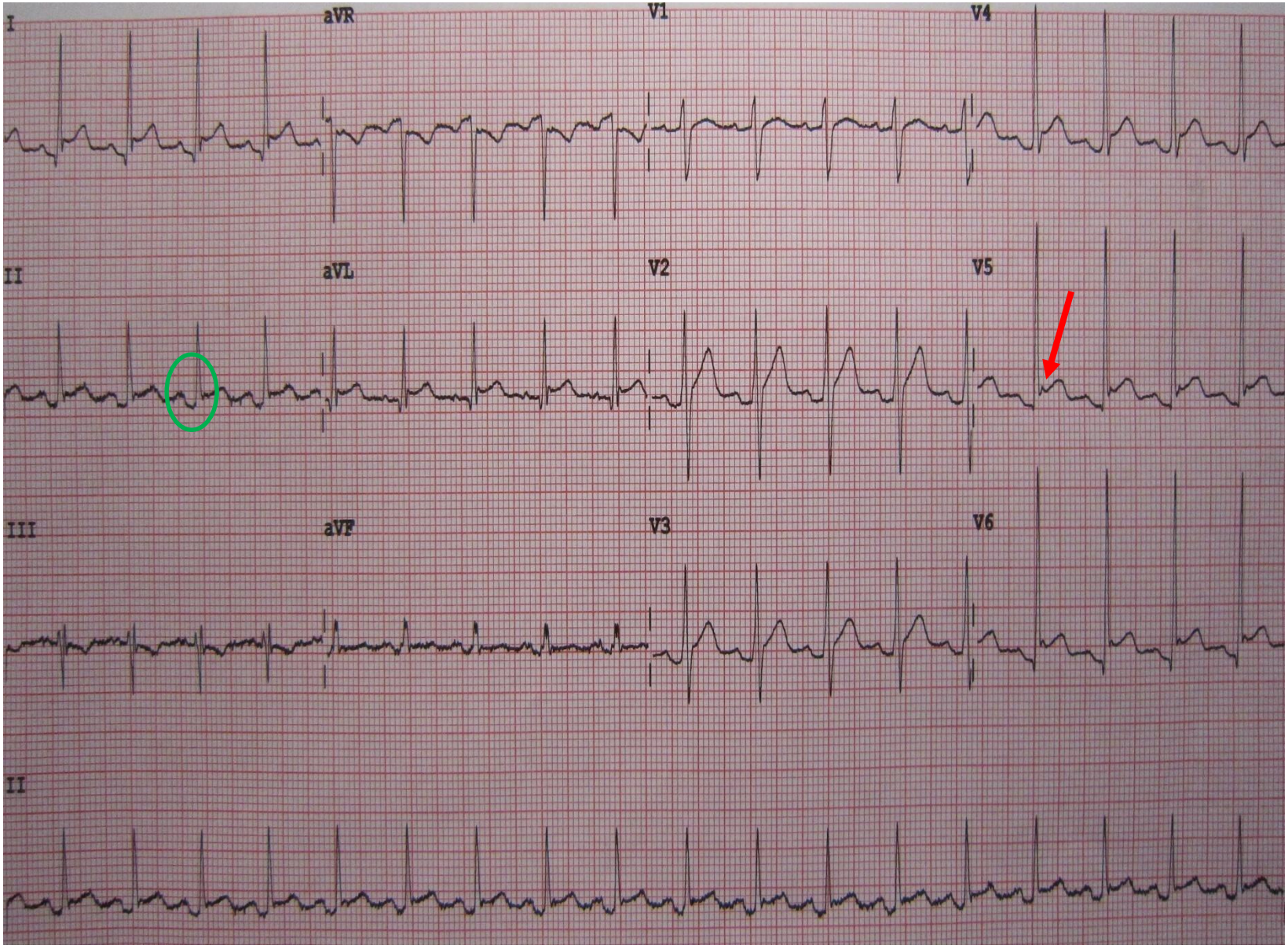
How many problems?



45y M with chest pain



45y M with chest pain



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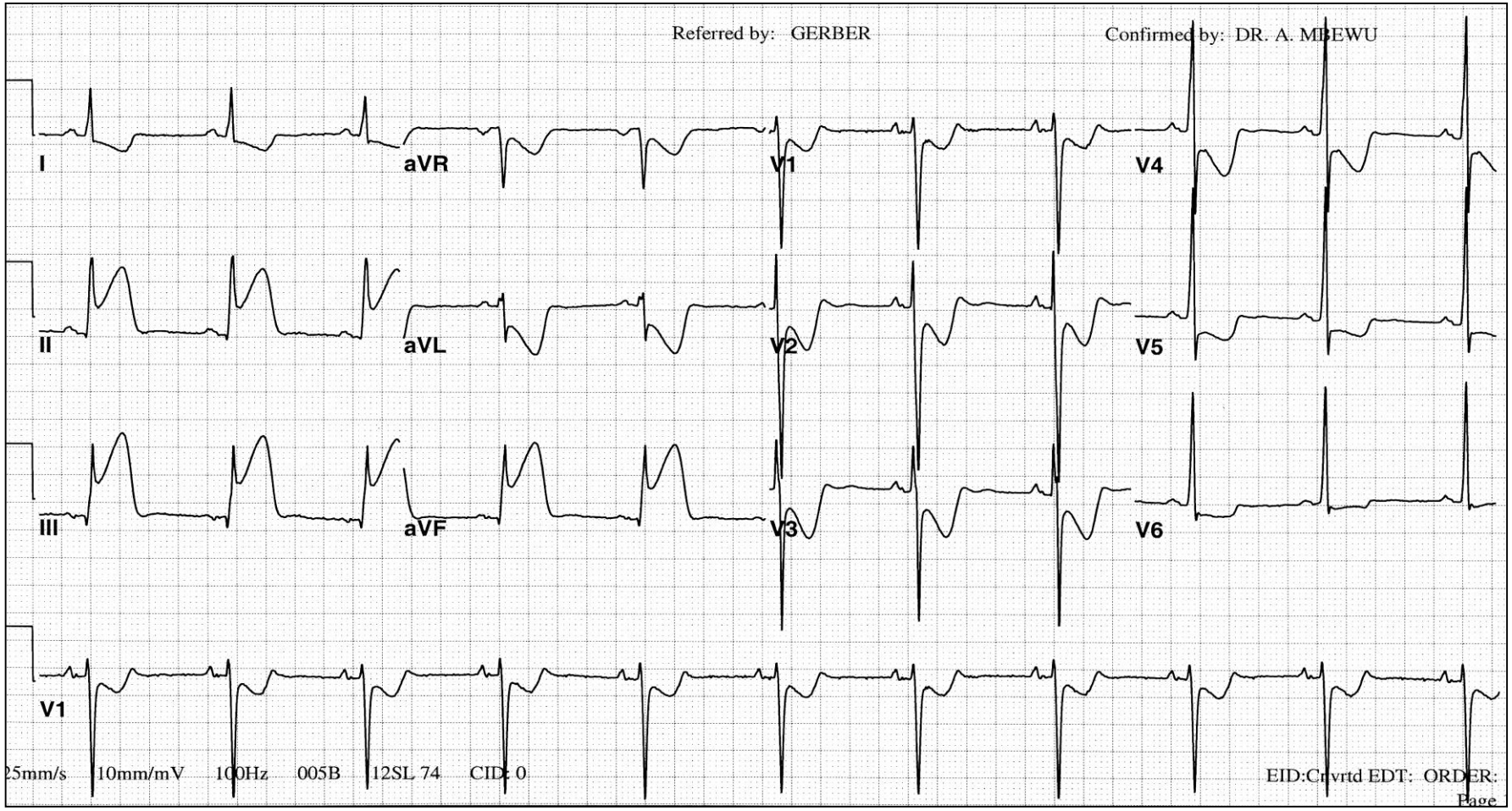
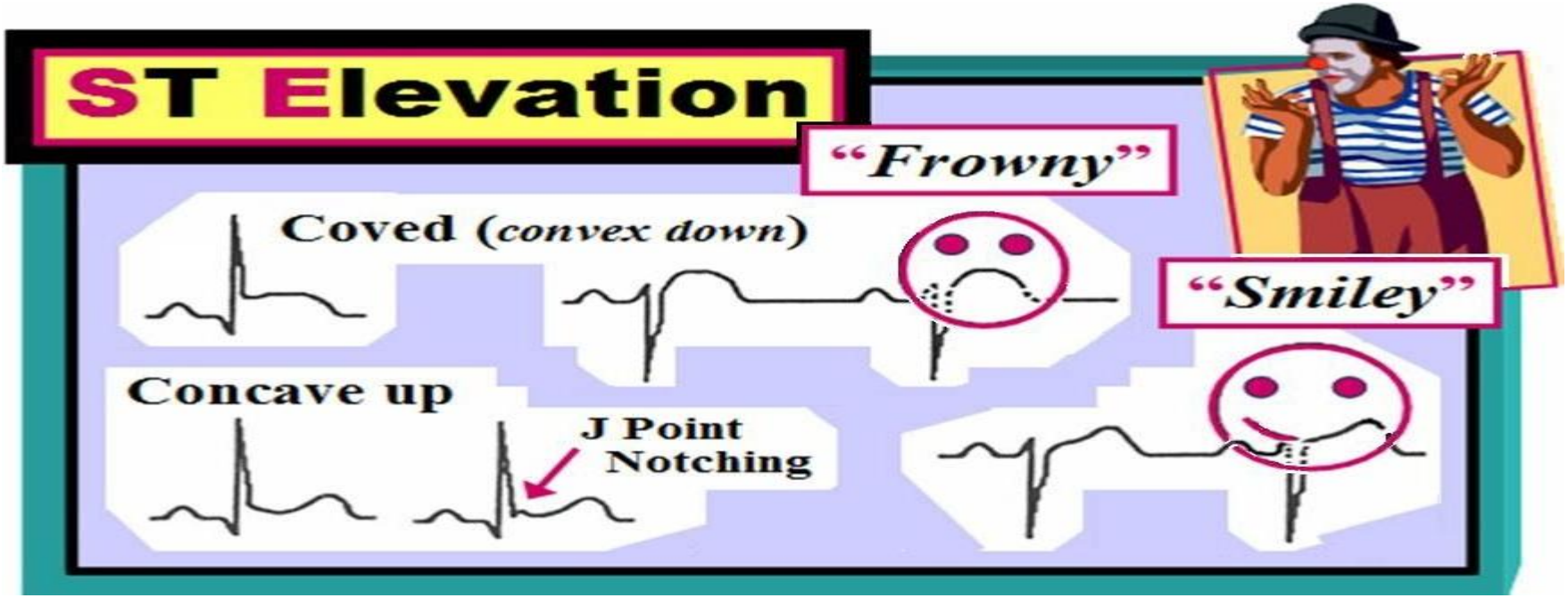
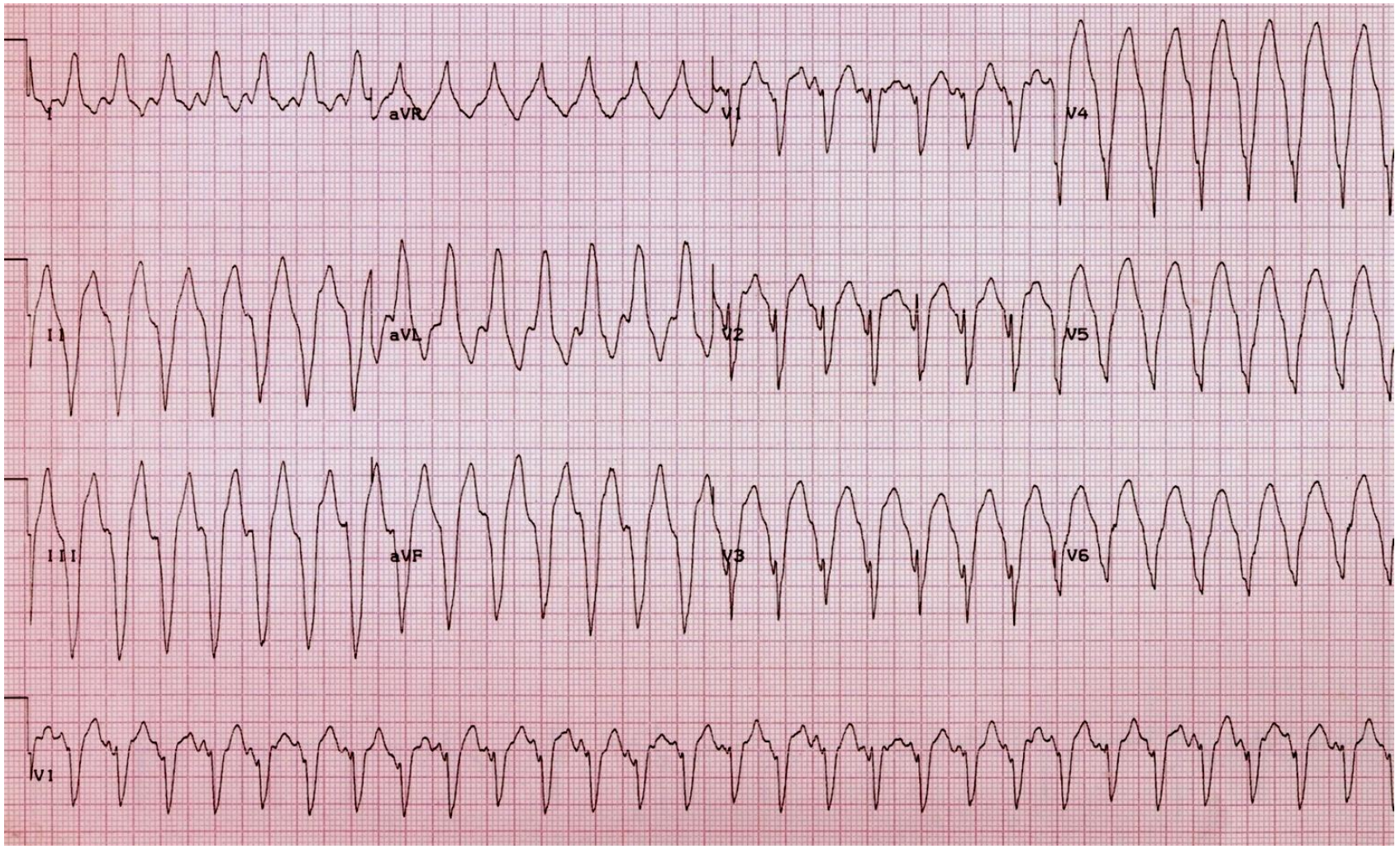
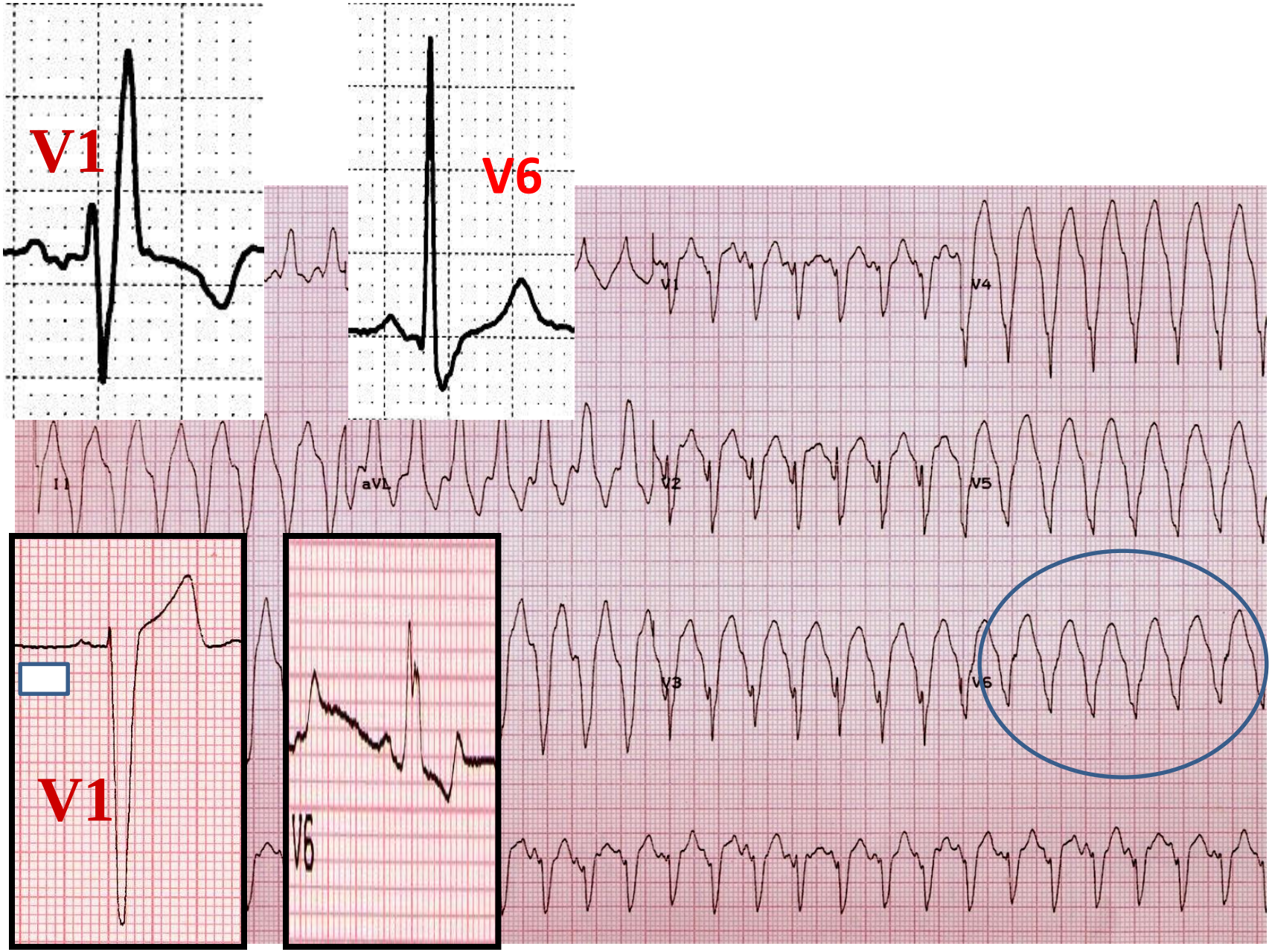
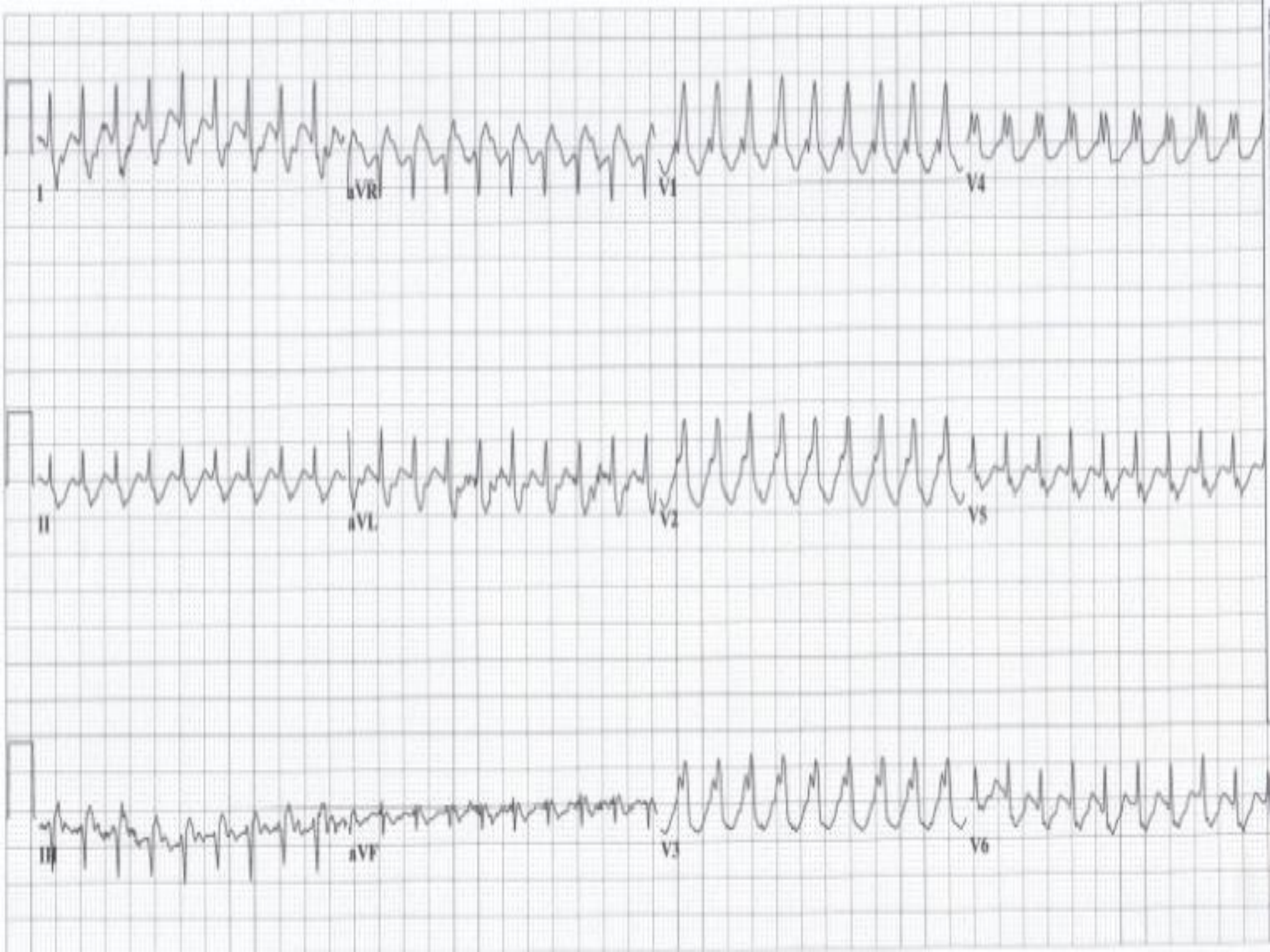


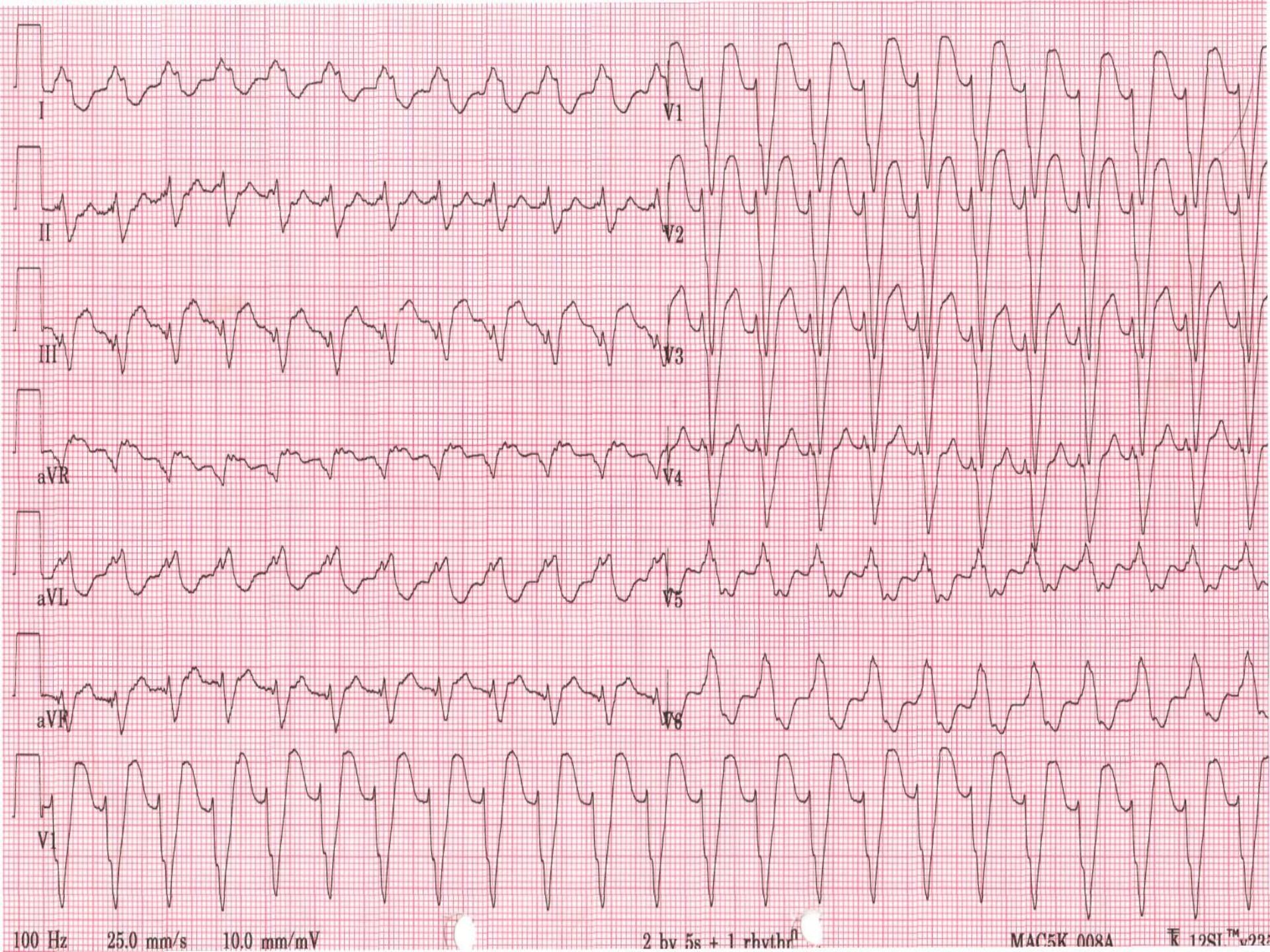


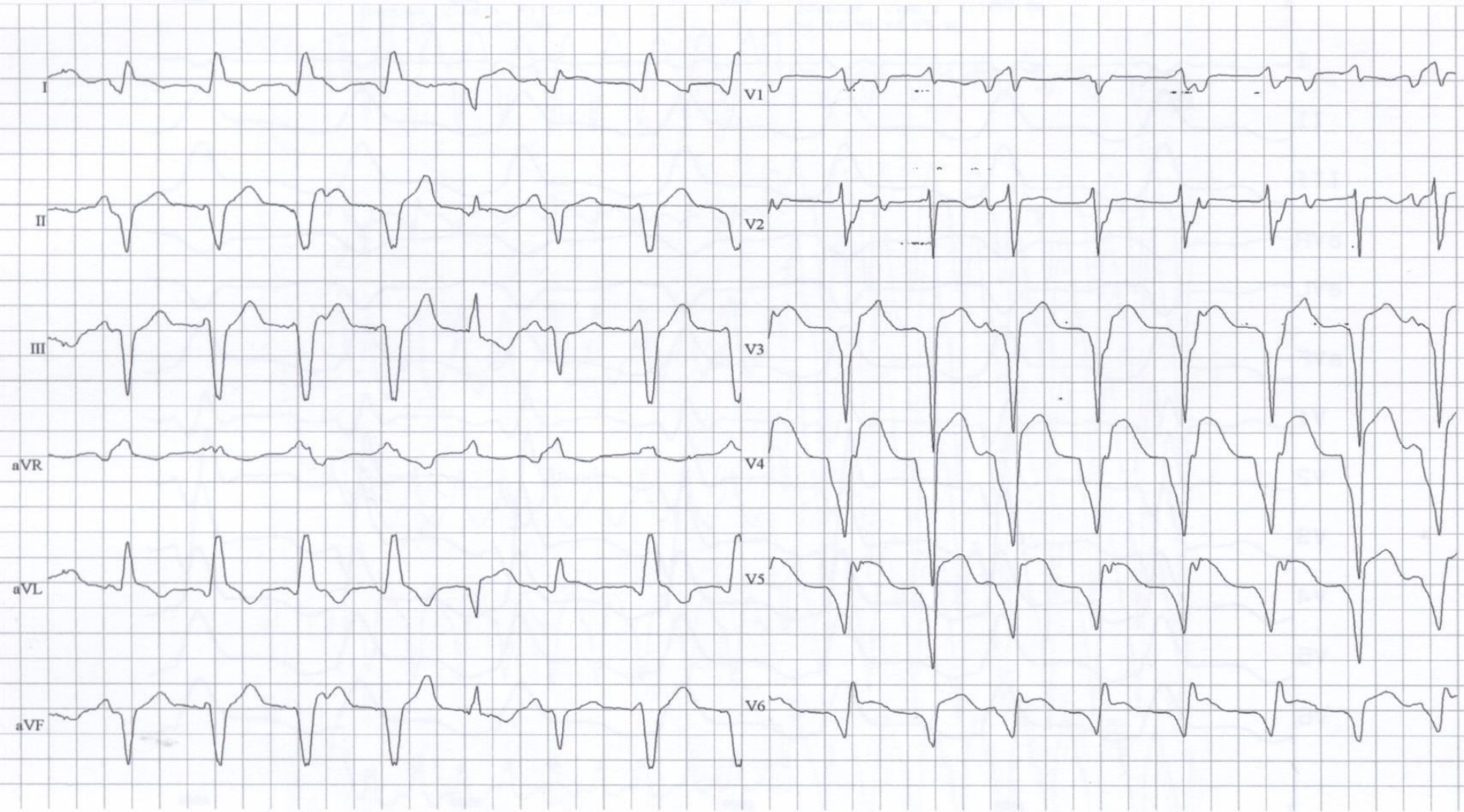
EKG feature	Acute pericarditis	Acute myocardial infarction
PR-segment depression	Common	Rare
Q-waves	Absent	Present
ST-segment elevation	Diffuse Concave-up	Localized Convex-up
Reciprocal T-wave changes	Absent	Often
T-wave inversion	Occurs after ST-segments have normalized	Occurs concomitantly

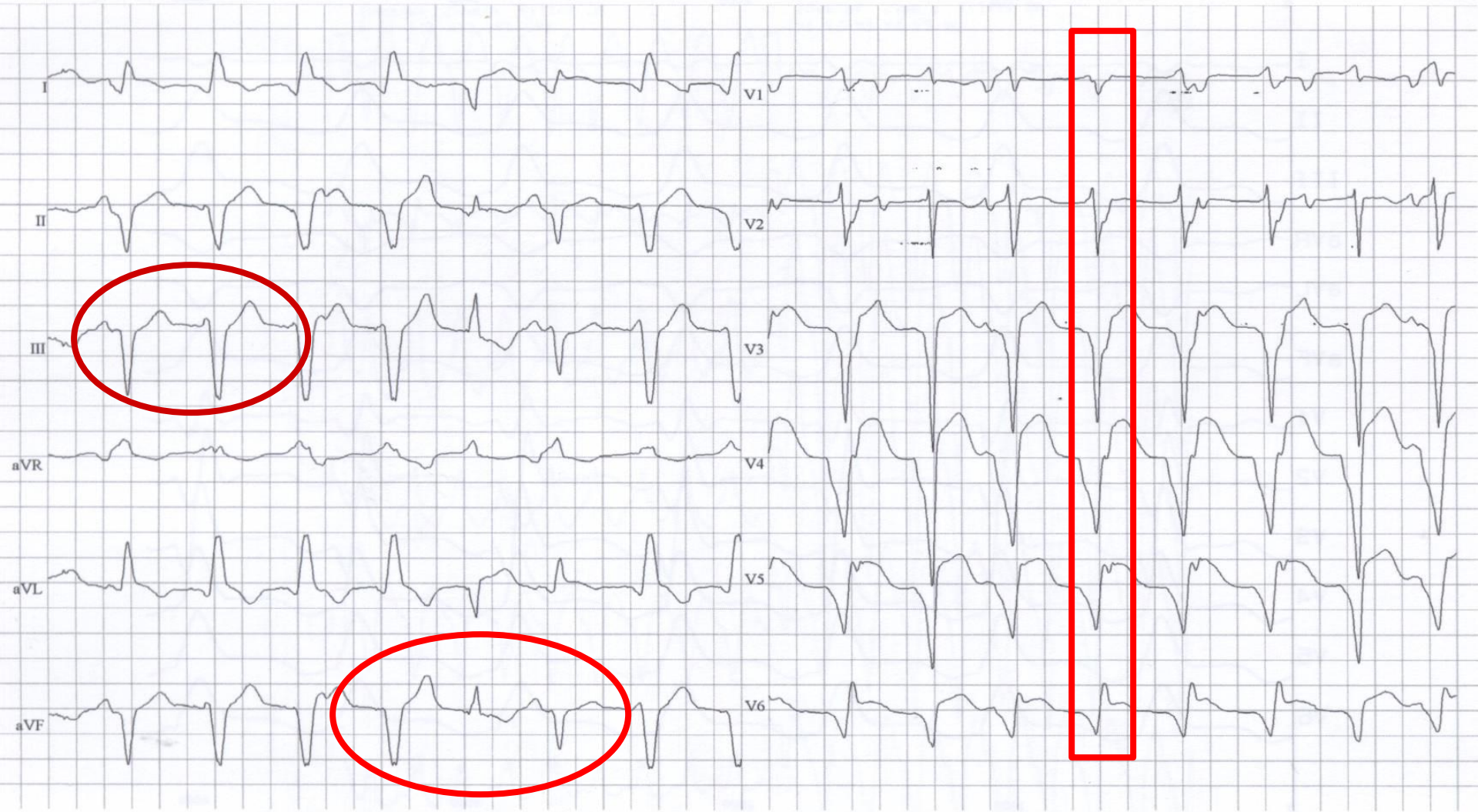

I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1


V1
V6
I
aVL
V2
V5
V3
V6
V1
V6


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6


I
II
III
aVR
aVL
aVF
V1
V1
V2
V3
V4
V5
V6
100 Hz
25.0 mm/s
10.0 mm/mV
2 by 5s + 1 rhythm
MAC5K 008A
12SL™v23

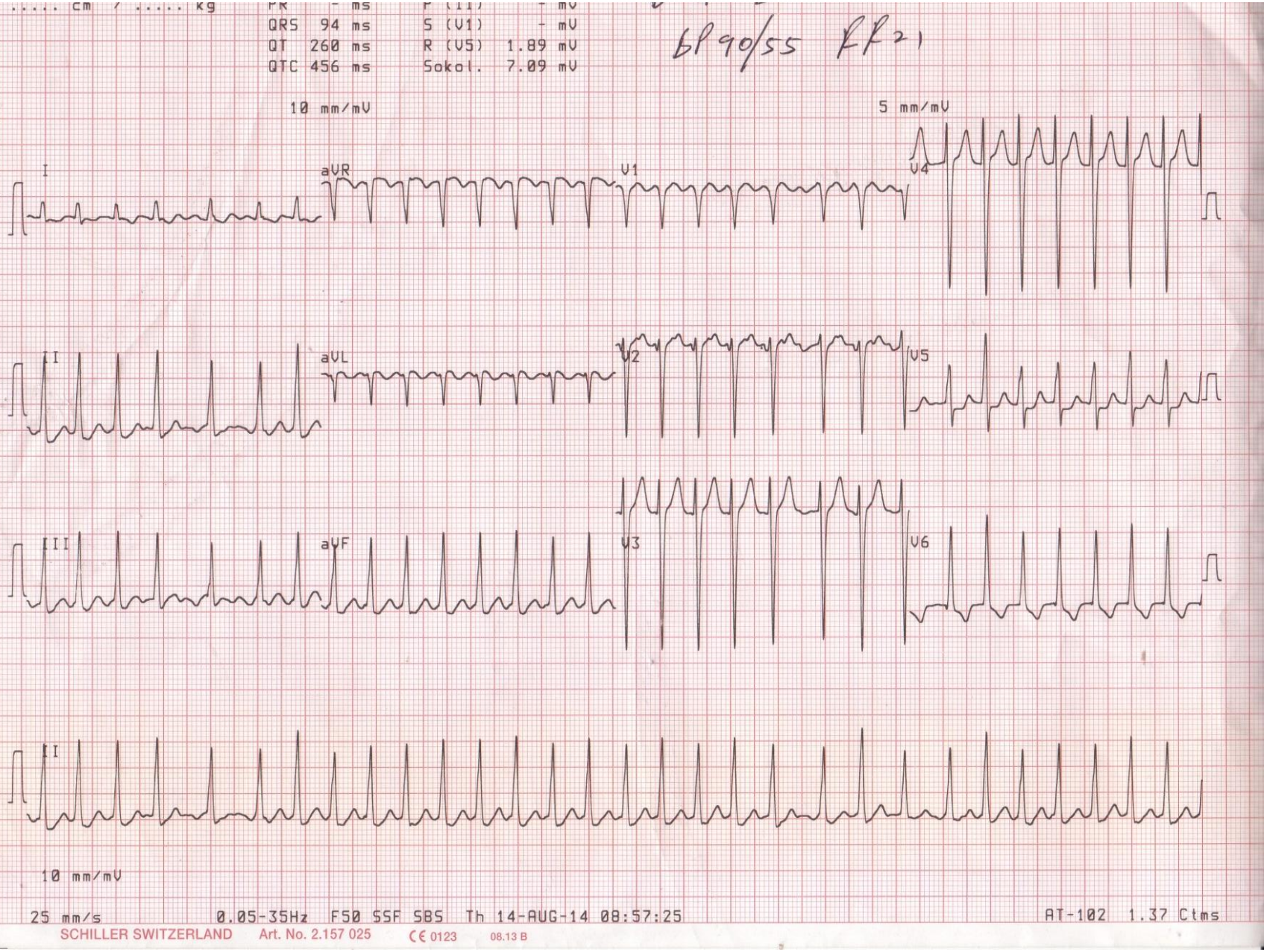

I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6

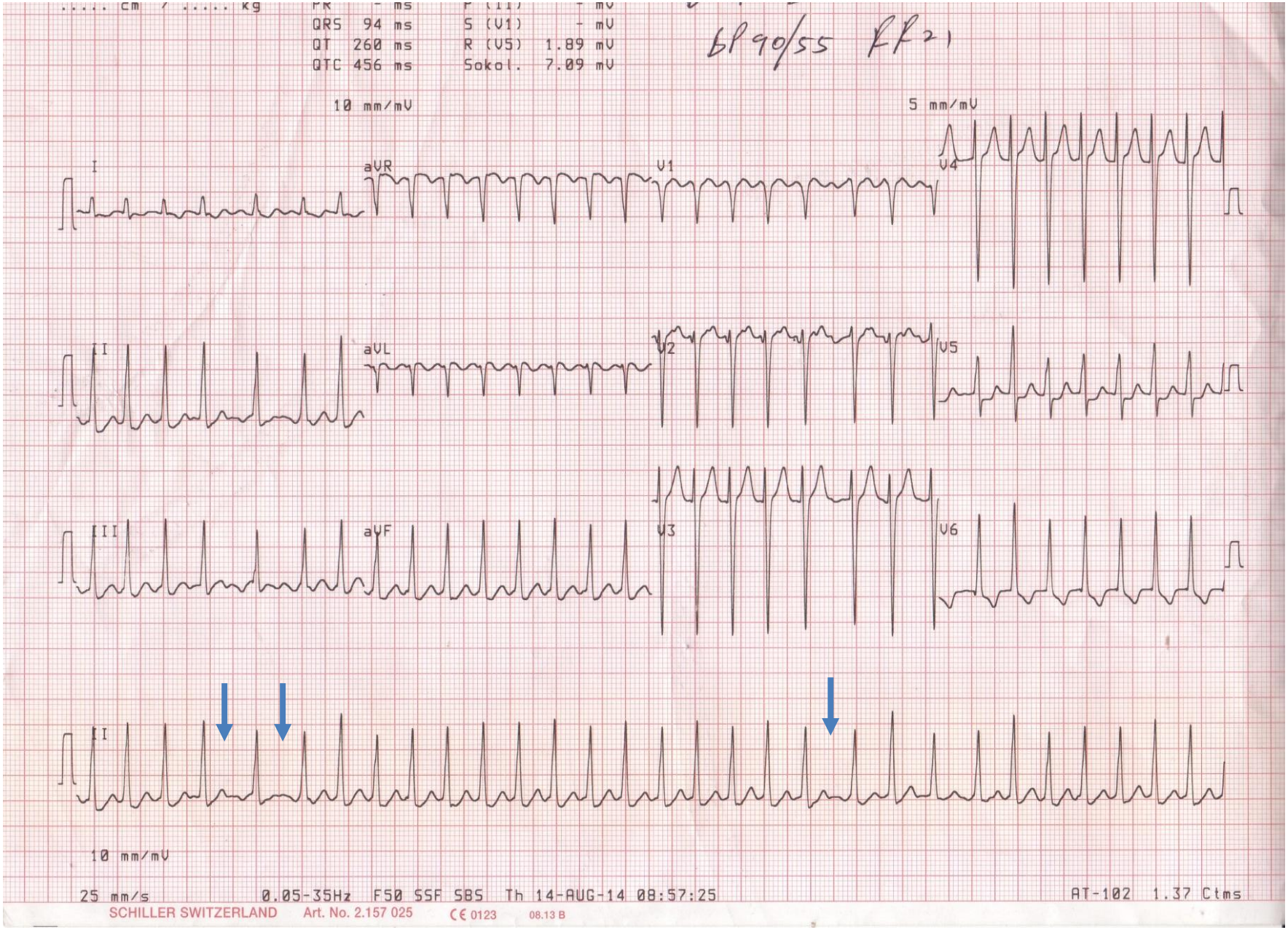


AV dissociation

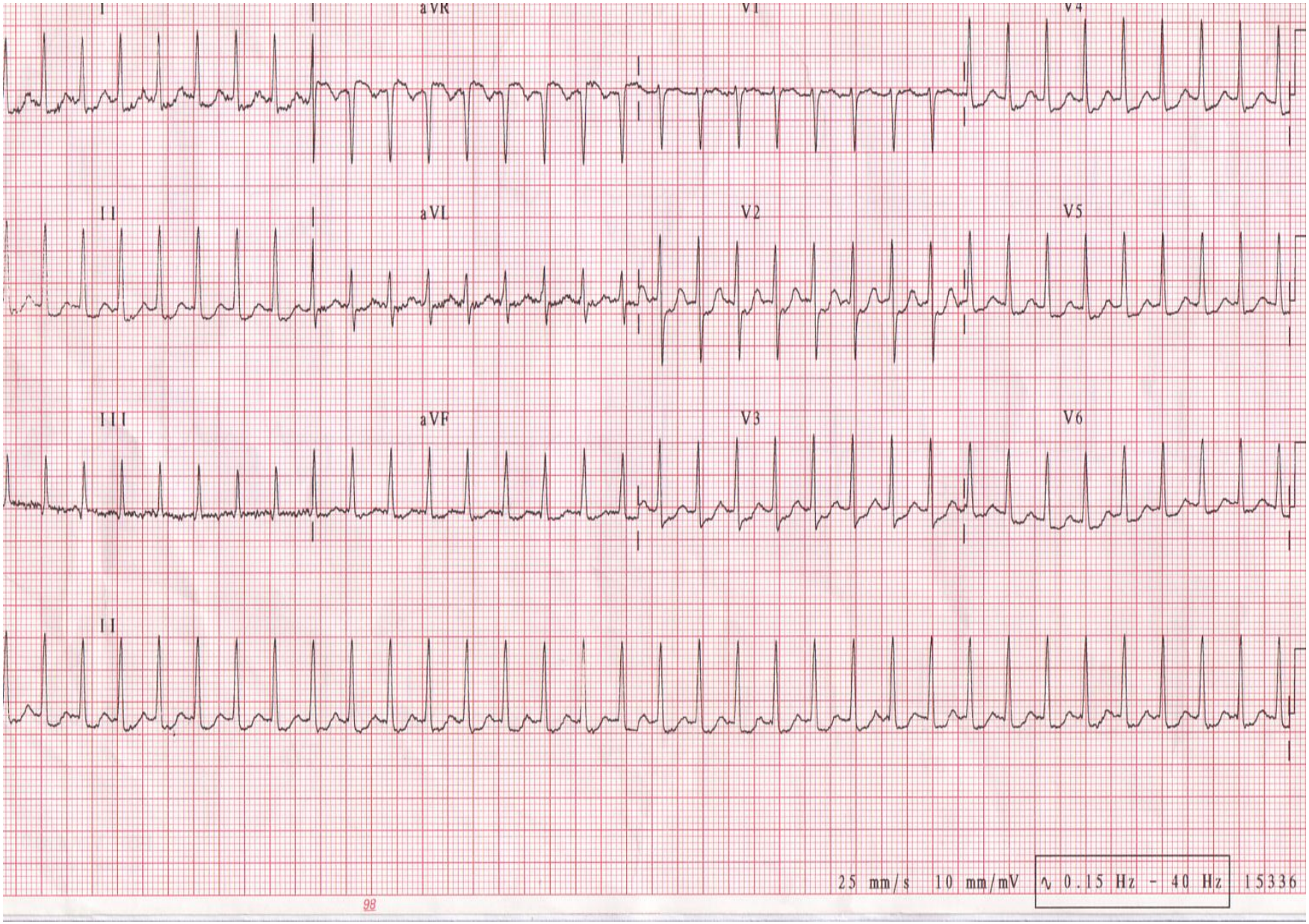
Capture beats and Fusion beats

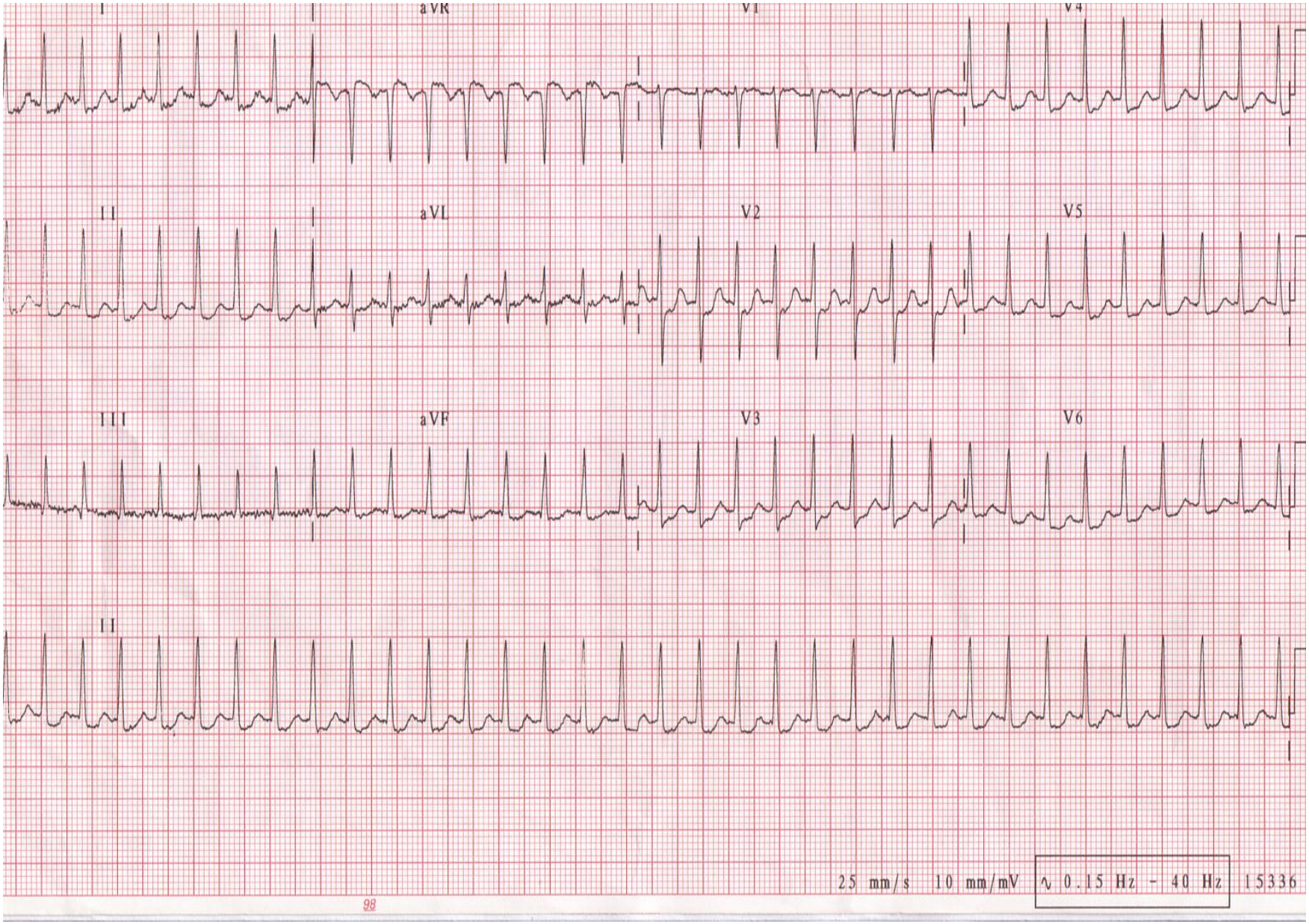
Negative concordance


..... cm / ..... kg
PR - ms
QRS 94 ms
QT 260 ms
QTC 456 ms
P (II) - mV
S (V1) - mV
R (V5) 1.89 mV
Sokol. 7.09 mV
bp 90/55 RR 21
10 mm/mV
5 mm/mV
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
10 mm/mV
25 mm/s
0.05-35Hz F50 SSF SBS Th 14-AUG-14 08:57:25
AT-102 1.37 Ctms
SCHILLER SWITZERLAND Art. No. 2.157 025 CE 0123 08.13 B

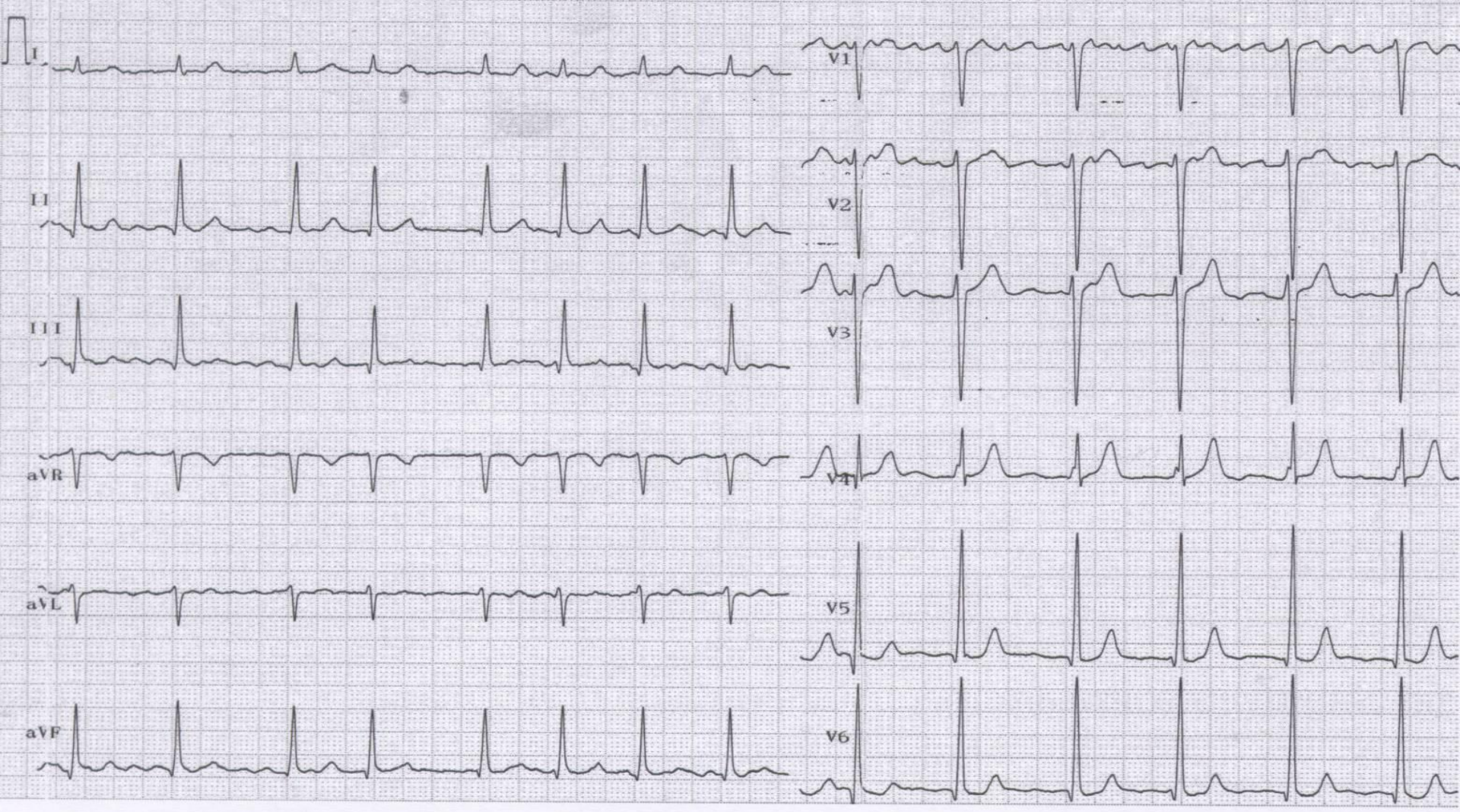


Fast, irregular, no ‘clear' P waves = AF

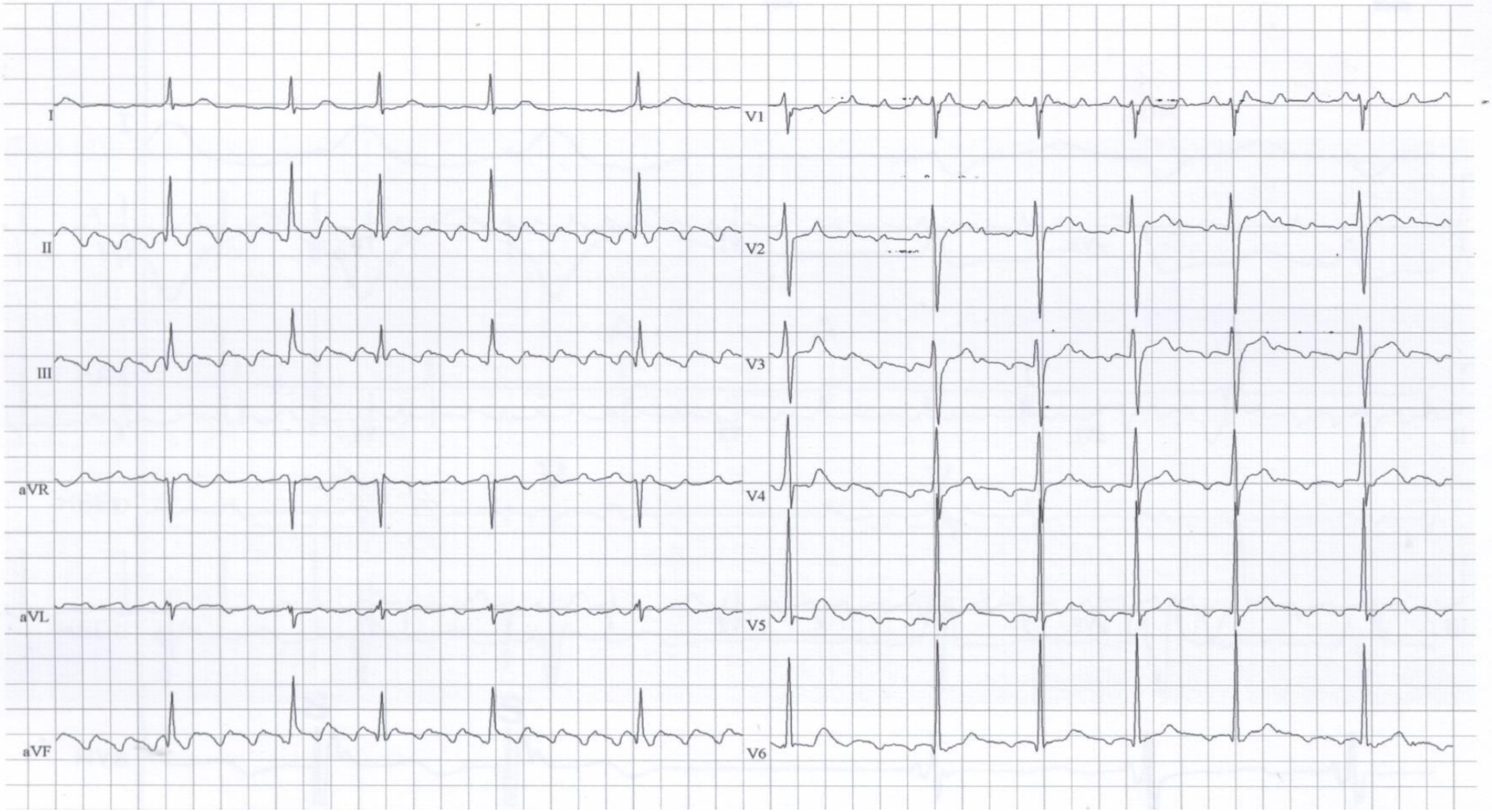

I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
25 mm/s 10 mm/mV ∿ 0.15 Hz - 40 Hz 15336



Fast, regular and no P waves = AVNRT (AVRT)



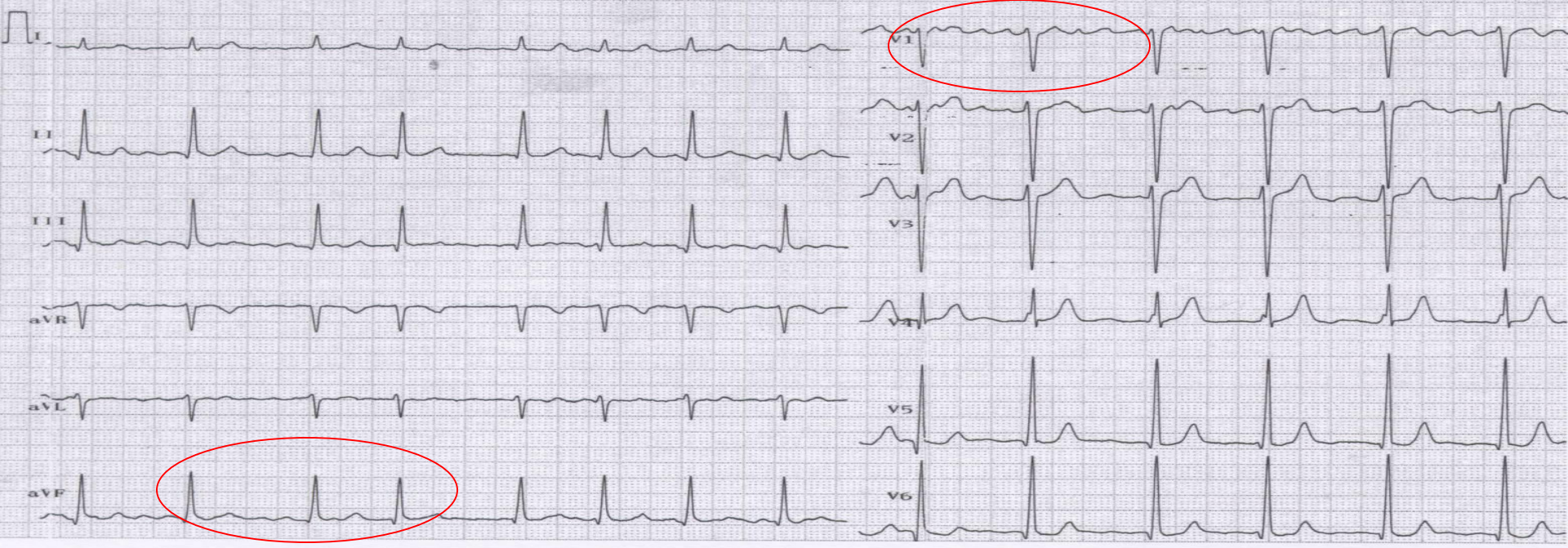
This tracing shows: 1- Atrial fibrillation, 2-Atrial flutter

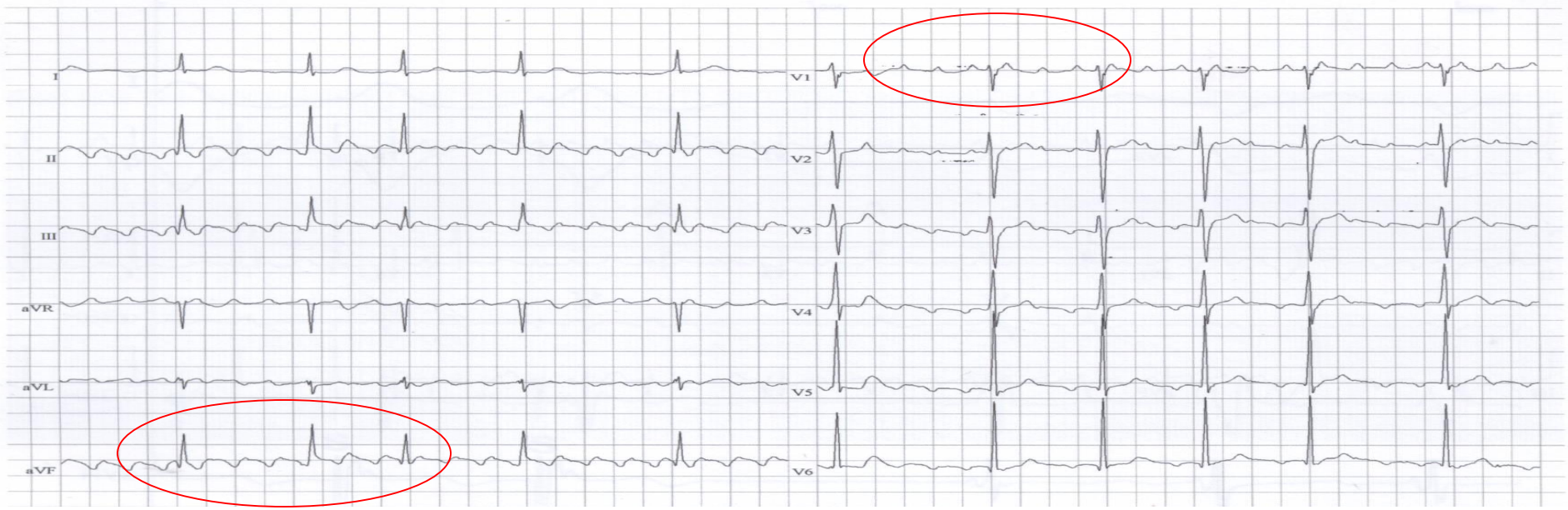


Best management:

1. Adenosine
2. Electrical cardioversion
3. Amiodarone IV
4. Electrocardioversion and Ablation

10b

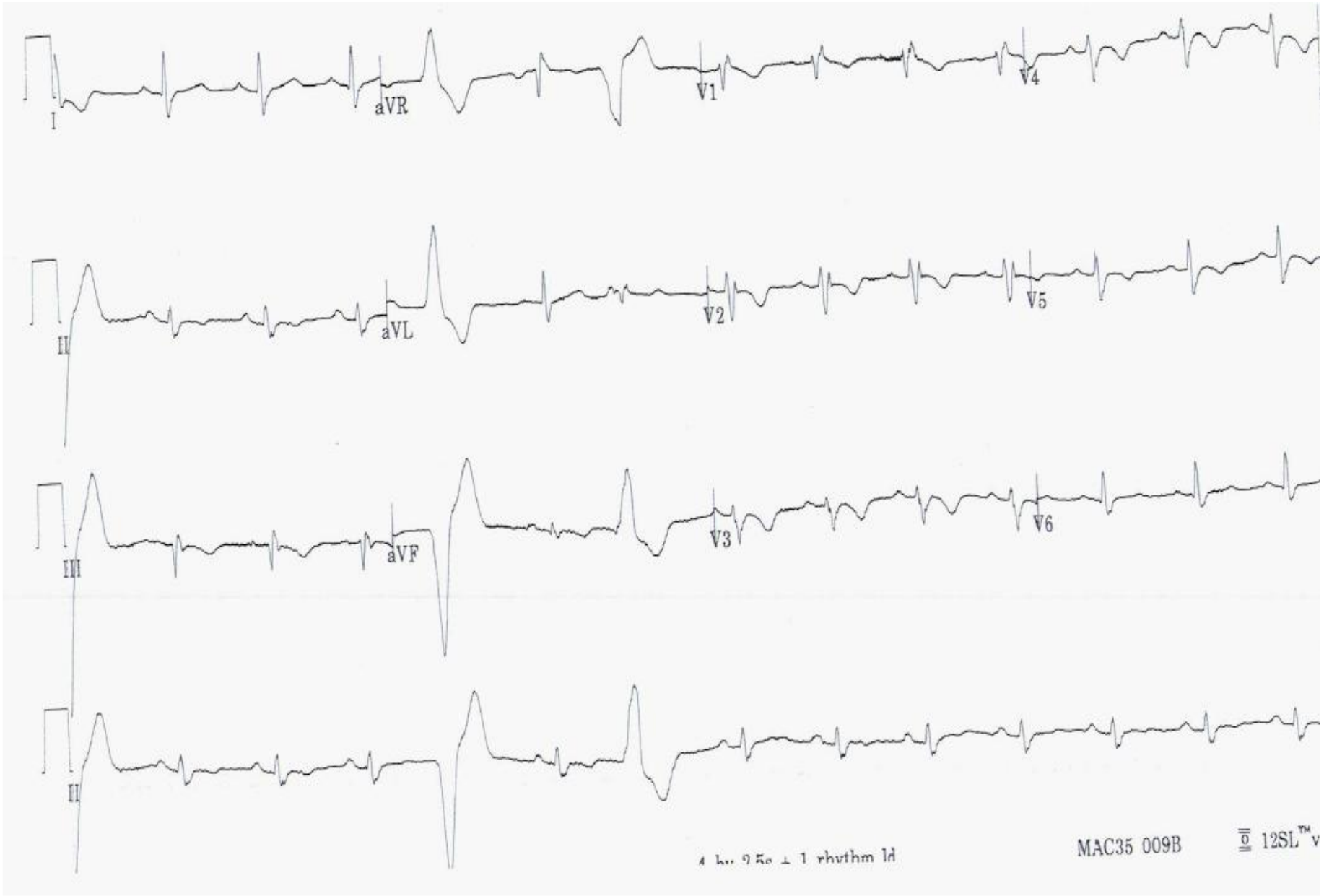

I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6


I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6

Thank You

How *You* analyze the ECG *a bit easier*

- **Rate** — (6 x number of QRS complexes)
- **Rhythm** — How does P wave look in LII (+ve) = Sinus Rhythm
- **P waves** — Morphology? Leads II (2.5-small blocks) and V1 (mainly +ve)
- **PR** — Normal (130 – 200ms), short (<130ms) or long (>200ms)
  - PR segment (Pericarditis)
- **QRS** — V1, V6 (duration / morphology – LBBB or RBBB? / Q waves)
- **Axis** — Quick method (aVL & LII) or detailed
- **ST** — Normal; elevated or depressed
- **T waves** — Usually same direction as the QRS
- **QT interval** — Long QT syndromes (V5-6, LII)


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
MAC35 009B
12SL™


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II