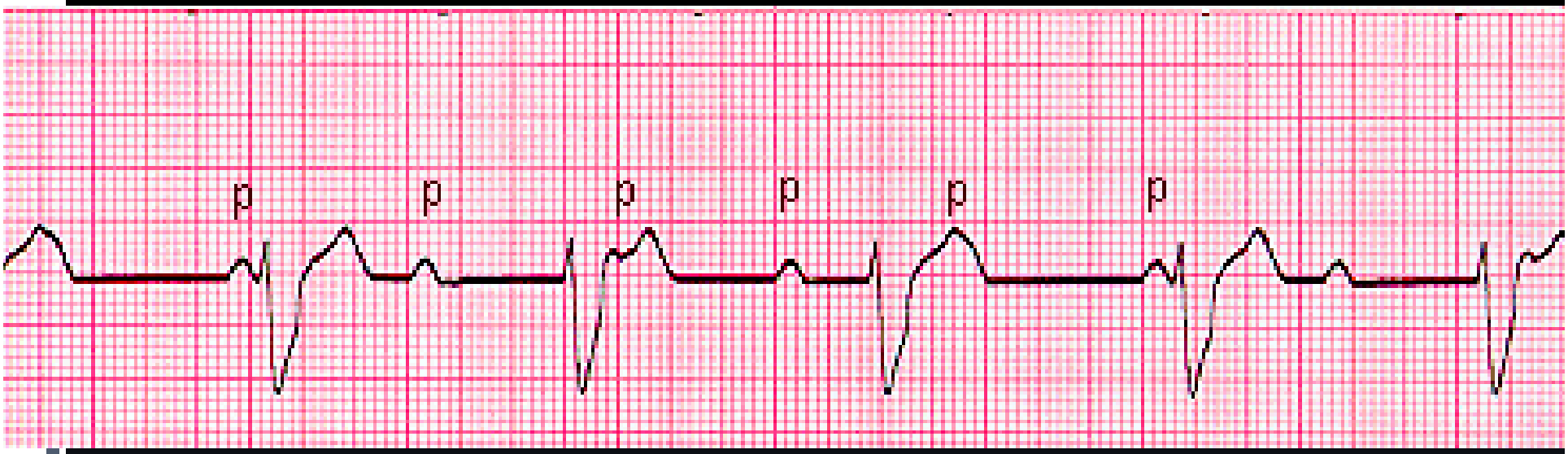
by dhammoudi,MD

LAB LECTURE REVIEW

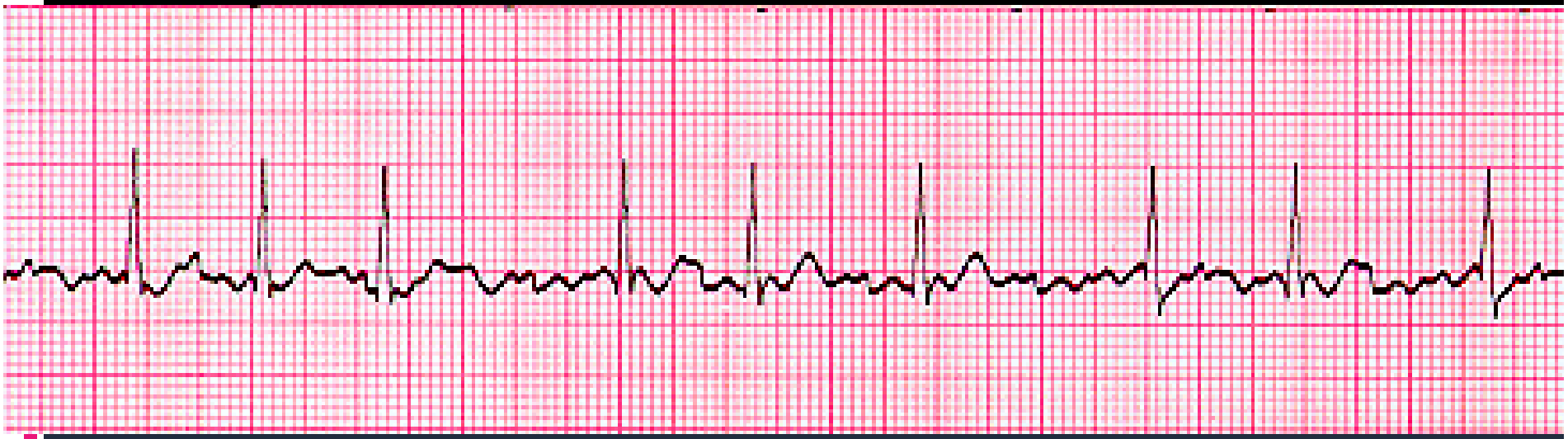
1st degree block

2nd degree

2nd degree

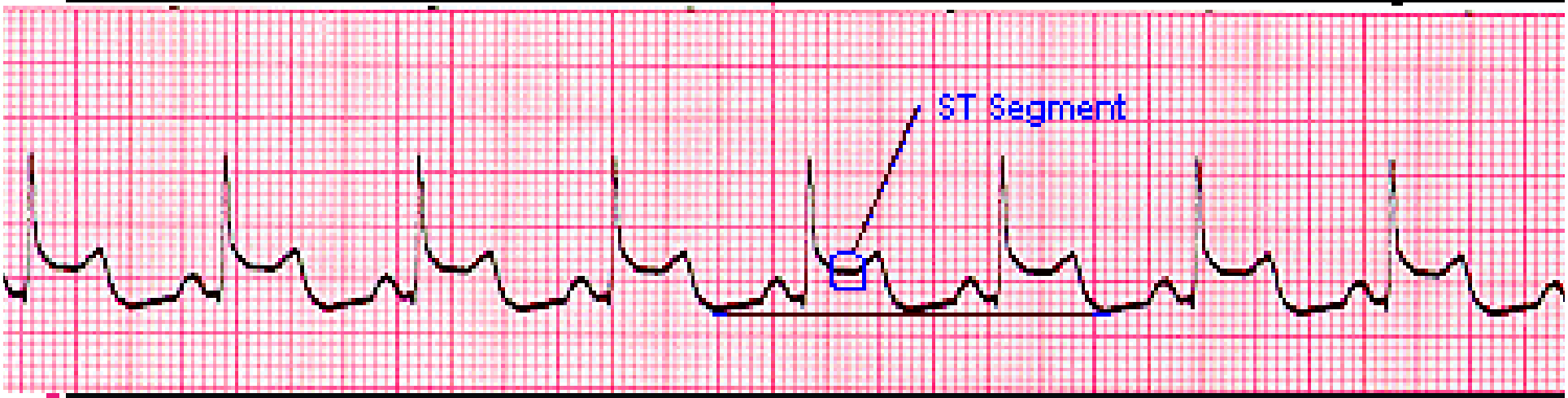

p
p
p
p
p
p

3rd degree

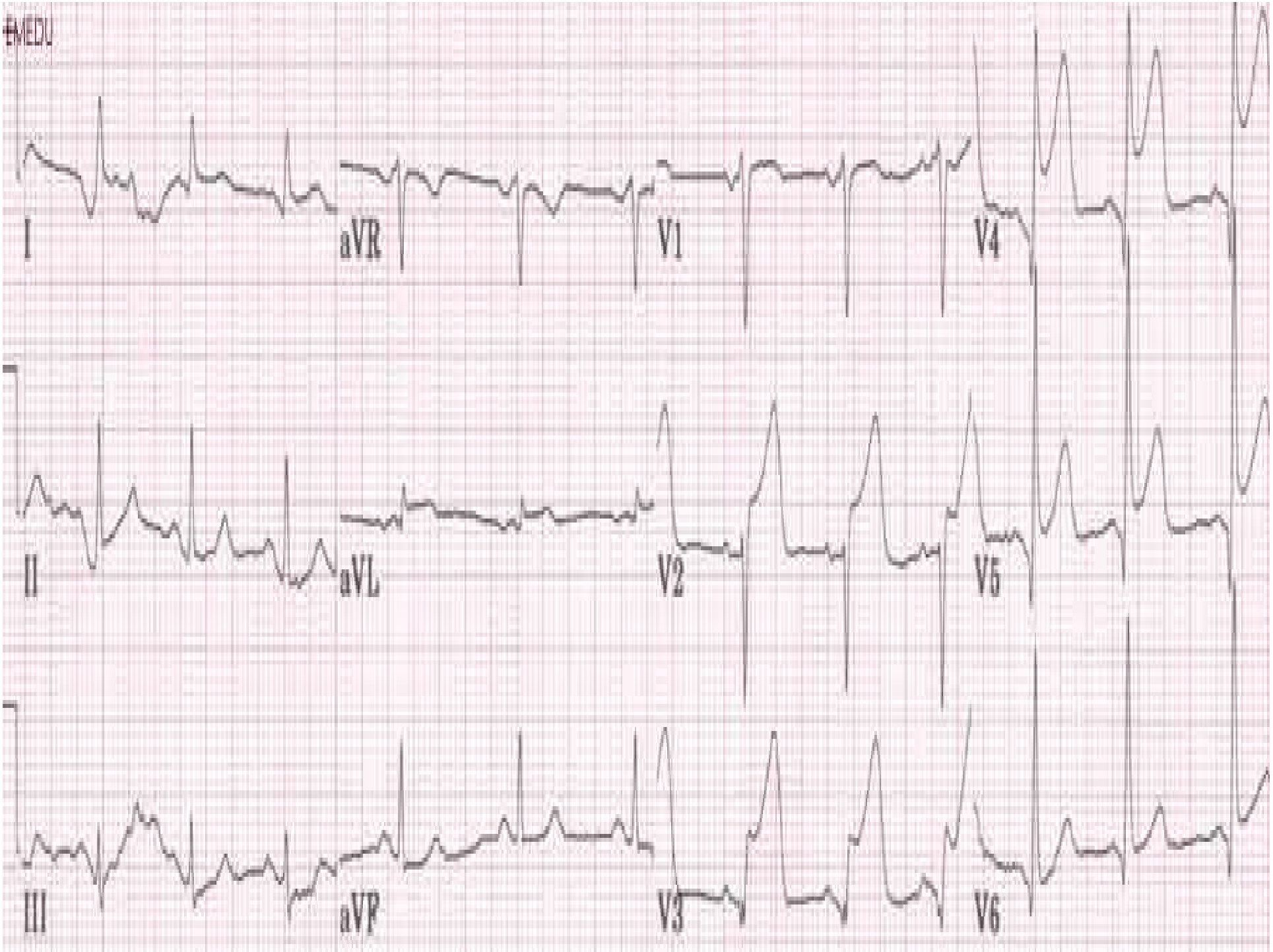


Atrial fibrillation

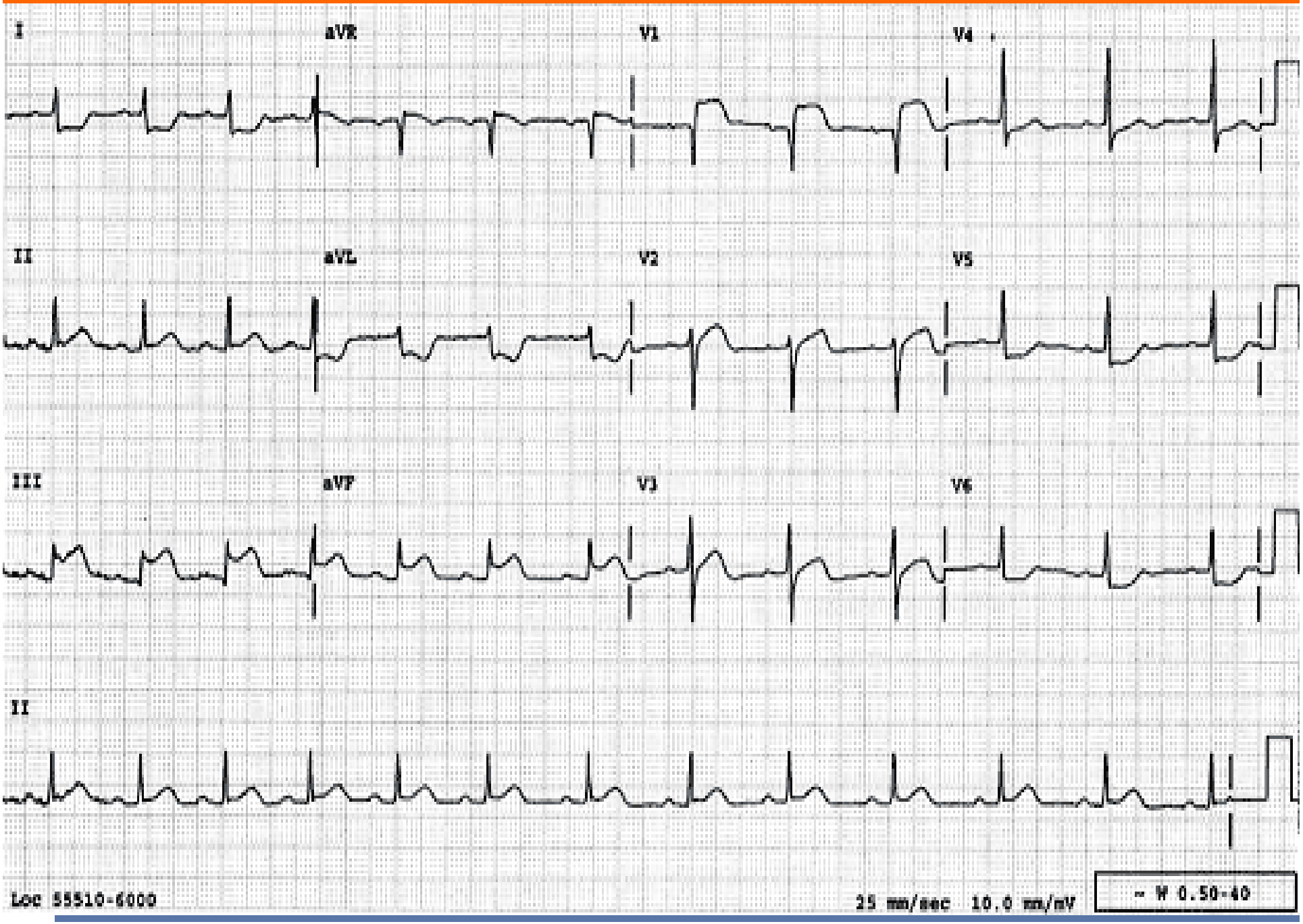
Atrial flutter


ST Segment

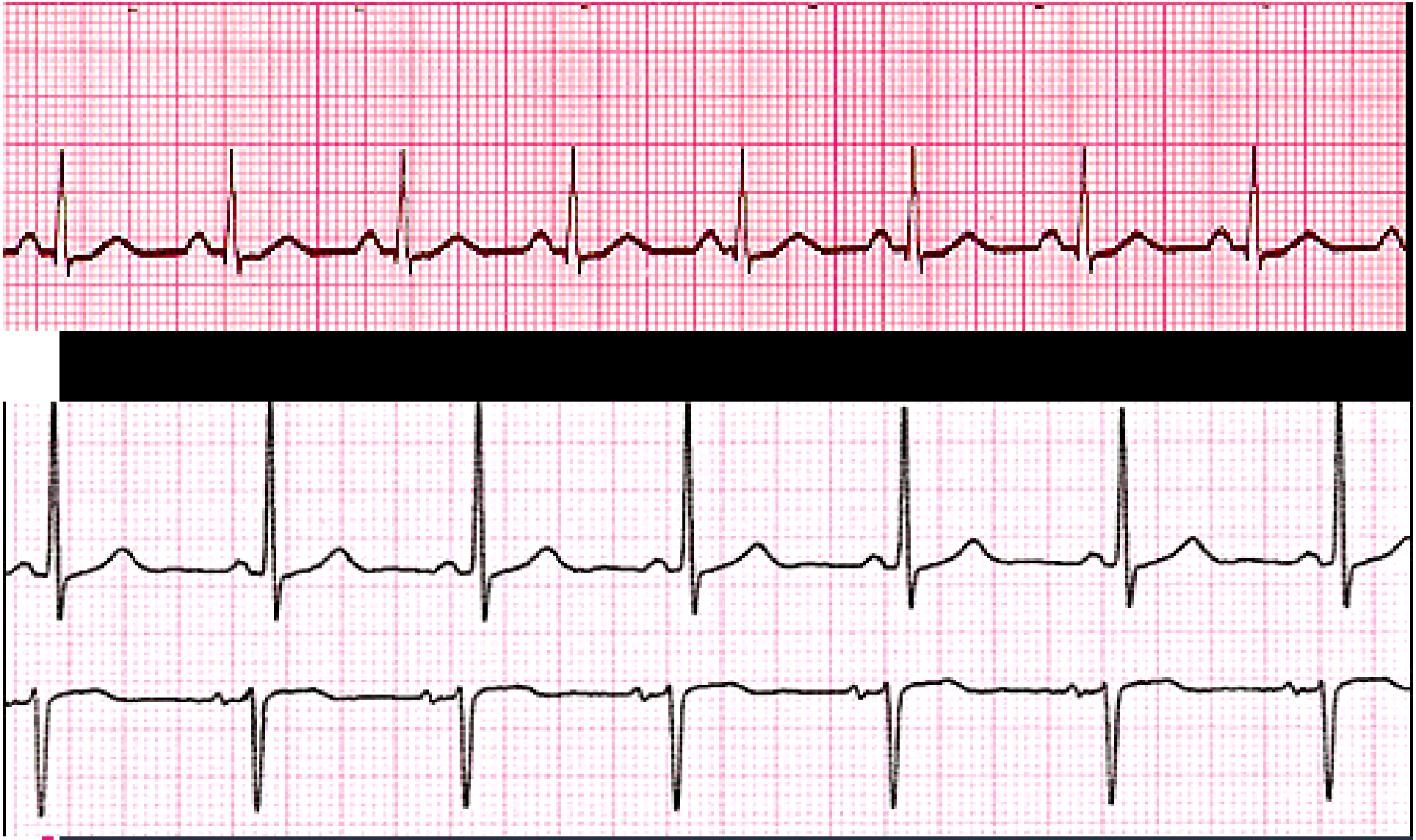
Myocardial infarct

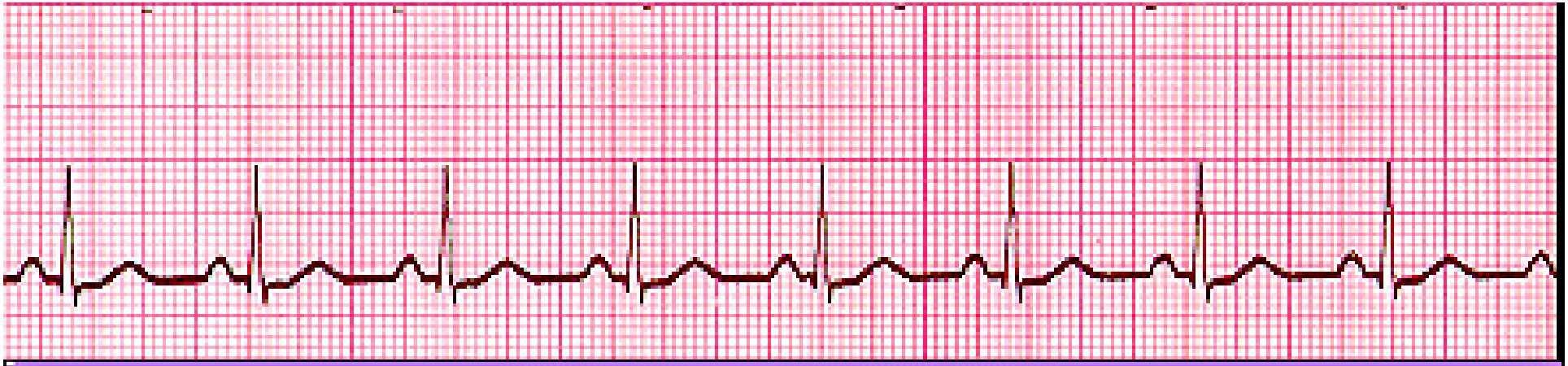

I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6

MI

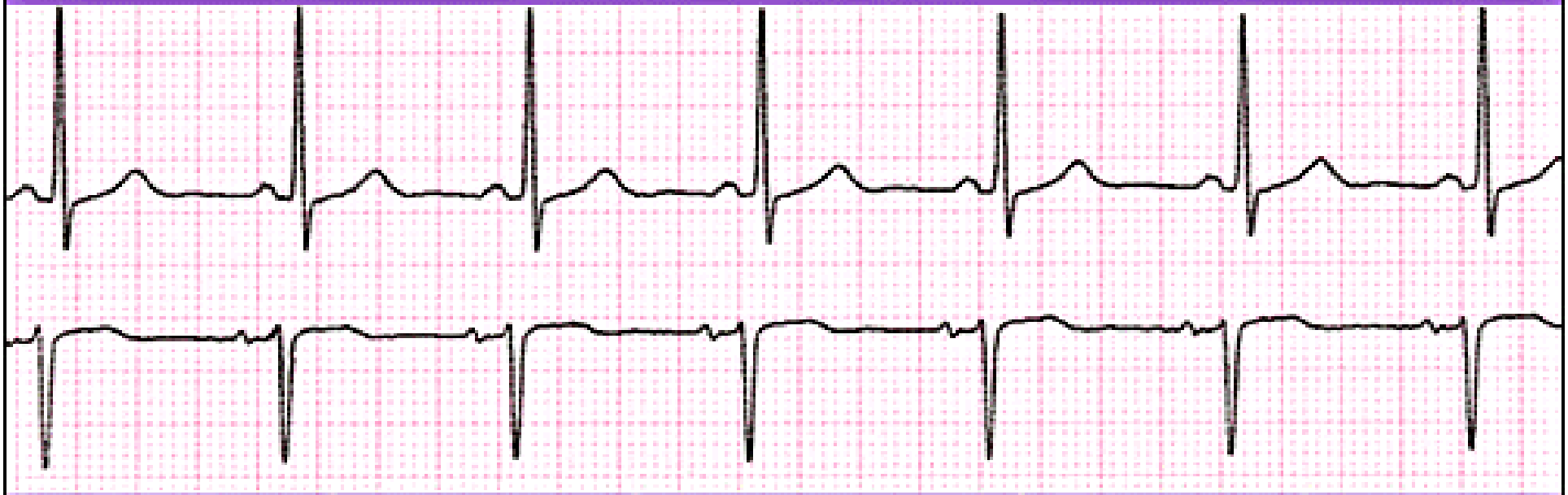

I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
Loc 55510-6000
25 mm/sec 10.0 mm/mV
~ W 0.50-40

Myocardial infarct

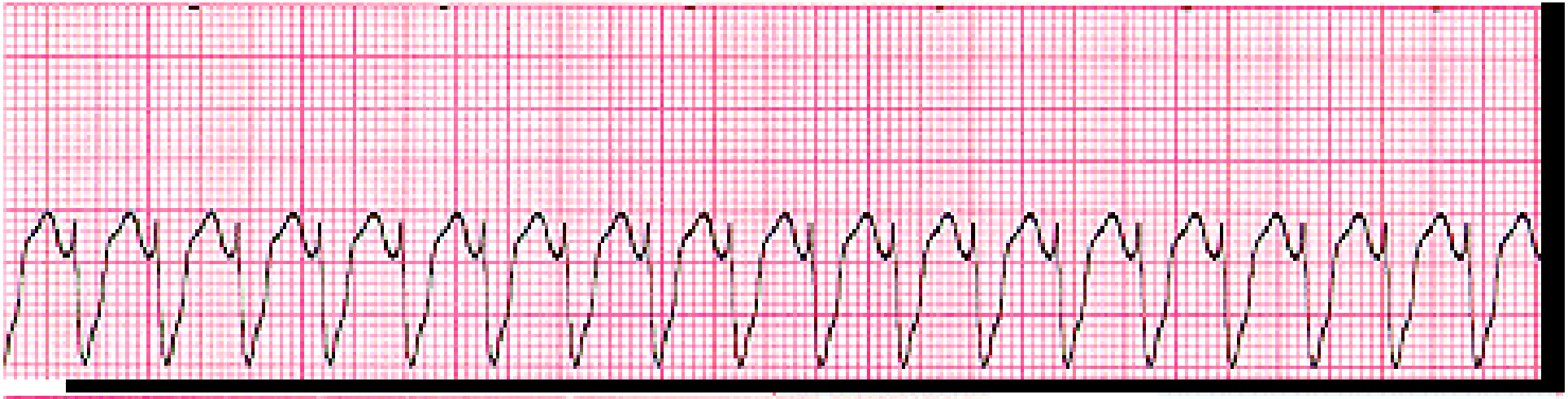


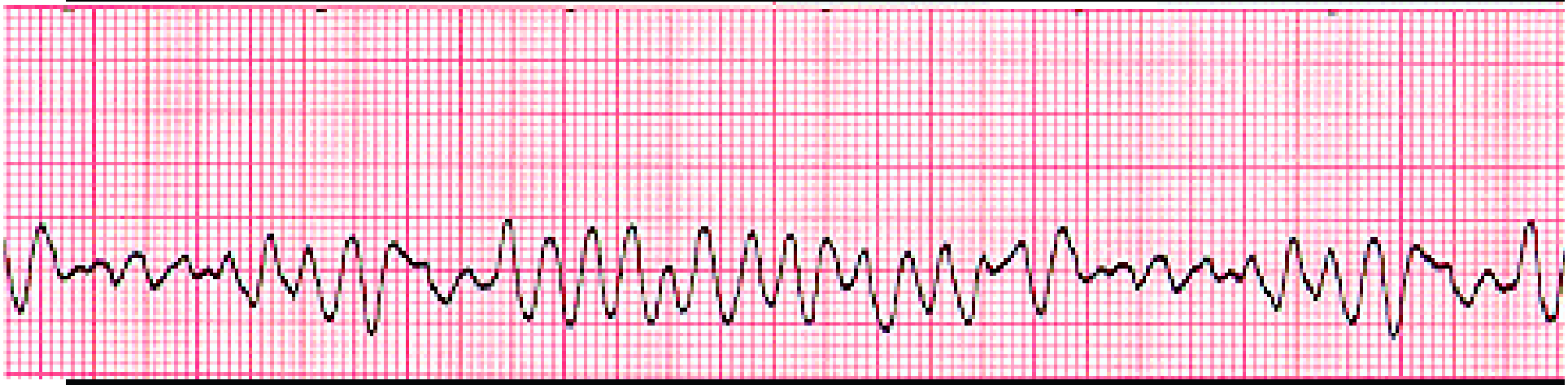


Normal Sinus Rhythm



Heart Rate	Rhythm	P Wave	PR interval (in seconds)	QRS (in seconds)
60-100 bpm	Regular	Before each QRS, identical	.12 to .20	<.12





VENTRICULAR TACHYCARDIA

What 2 blood vessels deliver blood to the liver?

What 2 blood vessels deliver blood to the liver?

Hepatic artery and hepatic portal vein

Large veins that are considered part of the *portal venous system* are the:

Roughly, the portal venous system corresponds to areas supplied by the ?

Large veins that are considered part of the *portal venous system* are the:

Hepatic portal vein
Splenic vein

Roughly, the portal venous system corresponds to areas supplied by

the celiac trunk,
the superior mesenteric artery,
and the inferior mesenteric artery.

When recording the EKG in lab you noticed that the lead 2 recording was nice, but the traces for leads 1 and 3 looked strange. Your instructor looks at the EKG and tells you the problem is probably a loose electrode. Which electrode is most likely malfunctioning?

•When recording the EKG in lab you noticed that the lead 2 recording was nice, but the traces for leads 1 and 3 looked strange. Your instructor looks at the EKG and tells you the problem is probably a loose electrode. Which electrode is most likely malfunctioning?

The electrode on the left arm.

The lead 2 trace was okay, so r arm and l leg electrodes must be working.

The left arm electrode is utilized for leads 1 and 3 and they were the bad ones, so it must be the culprit.

An increase in heart rate would cause the distance between T waves and P waves to:

An increase in heart rate would cause the distance between T waves and P waves to:

DECREASE

What are the specific causes of the 2 sounds associated with each heart beat?

In a healthy person, does pulse rate vary depending on the artery measured? Explain your answer.

What are the specific causes of the 2 sounds associated with each heart beat?

1st sound is caused by the closing of the AV valves while the 2nd sound is caused by the closing of the semilunar valves.

In a healthy person, does pulse <u>rate</u> vary depending on the artery measured? Explain your answer.

No, pulse rate depends only on ventricular rate. It should be the same for each artery.

Given the following data:
Cardiac output = 4080 mL/min
Heart rate = 60 beats/min
Systolic blood pressure = 127 mmHg

Calculate the mean blood pressure

$SV = CO/HR = 4080/60 = 68\ mL/beat$

$PP = SV/2 = 68/2 = 34\ mmHg$

$DP = SP - PP = 127 - 34 = 93\ mmHg$

$MP = DP + \frac{1}{3}PP = 93 + \frac{1}{3}(34) = 93 + 11.3 = 104.3\ mmHg$

Given the following data:
Mean Blood Pressure = 120 mmHg
Diastolic Blood Pressure = 100 mmHg
Pulse rate = 50 pulses/30seconds

Calculate cardiac output.

PR = (50pulses /30seconds) x (60seconds / 1 minute) = 100 pulses / minute
HR = pulse rate = 100 b/min

MP = DP + ⅓PP
PP = 3(MP – DP) = 3(120-100) = 3(20) = 60 mmHg
SV = PP (2(mL/beat)/mmHg) = 60(2)= 120 mL/beat

CO = SV x HR = 120(100) = 12000 mL/min

•Morgan ran 8 kilometers. Prior to running, she had the following:
Heart rate = 70 beats/min
Systolic blood pressure = 119mmHg

Diastolic blood pressure = 69mmHg
After running, she had the following:
Heart rate = 200 beats/min
Systolic blood pressure = 152mmHg
Diastolic blood pressure = 82mmHg
Calculate her percent change in cardiac output.

PP = SP – DP = 119 – 69 = 50 mmHg

SV = PP (2) = 50(2) = 100 mL/b

CO = SV(HR) = 100(70) = 7000 mL/min

After

PP = SP – DP = 152 – 82 = 70 mmHg

SV = PP (2) = 70(2) = 140 mL/b

CO = SV(HR) = 140(200) = 28000 mL/min

$\%\Delta$ in CO = $[(CO_a - CO_b)/CO_b]100 = [(28000-7000)/7000]100 =$ 300%

Mr. Elway's resting BP was 120/70 mmHg and his resting heart rate was 50 bpm. After exercising, his cardiac output was 6 times the resting value. Calculate his cardiac output just after exercise.

30 L/min

Mr. Marino is an overweight 59 year old male. You were given the following data on him:

- Post-exercise HR = 100 bpm
- Resting SBP = 120 mmHg
- Resting DBP = 80 mmHg
- Resting pulse rate = 60 pulses / 45 seconds
- Percent change in CO = 500%

Calculate the following:

a. Resting HR
b. Resting PP
c. Resting SV
d. Resting CO
e. Post-exercise CO
f. Post exercise SV
g. Post-exercise PP

80B/MIN
40mmHg
80ml/beats
6.4 L/min
38.4 L/min
384ml/b
192mmHg

If cardiac output = 4800 mL/min and heart rate = 60 bpm, then how much TOTAL BLOOD leaves the heart per cardiac cycle?

A.240mL
b.160mL
c.40mL
d.77.6mL

If cardiac output = 4800 mL/min and heart rate = 60 bpm, then how much TOTAL BLOOD leaves the heart per cardiac cycle?

A.240mL
b.160mL
c.40mL
d.77.6mL

A problem with the mitral valve would be more likely to affect the (*first/second*) heart sound.

A problem with the mitral valve would be more likely to affect the (*first/second*) heart sound.

Mitral valve

Jim has a resting HR of 54bpm while Arnie has a resting HR of 76bpm. One of them must have some sort of cardiac disorder. True or False? Explain.

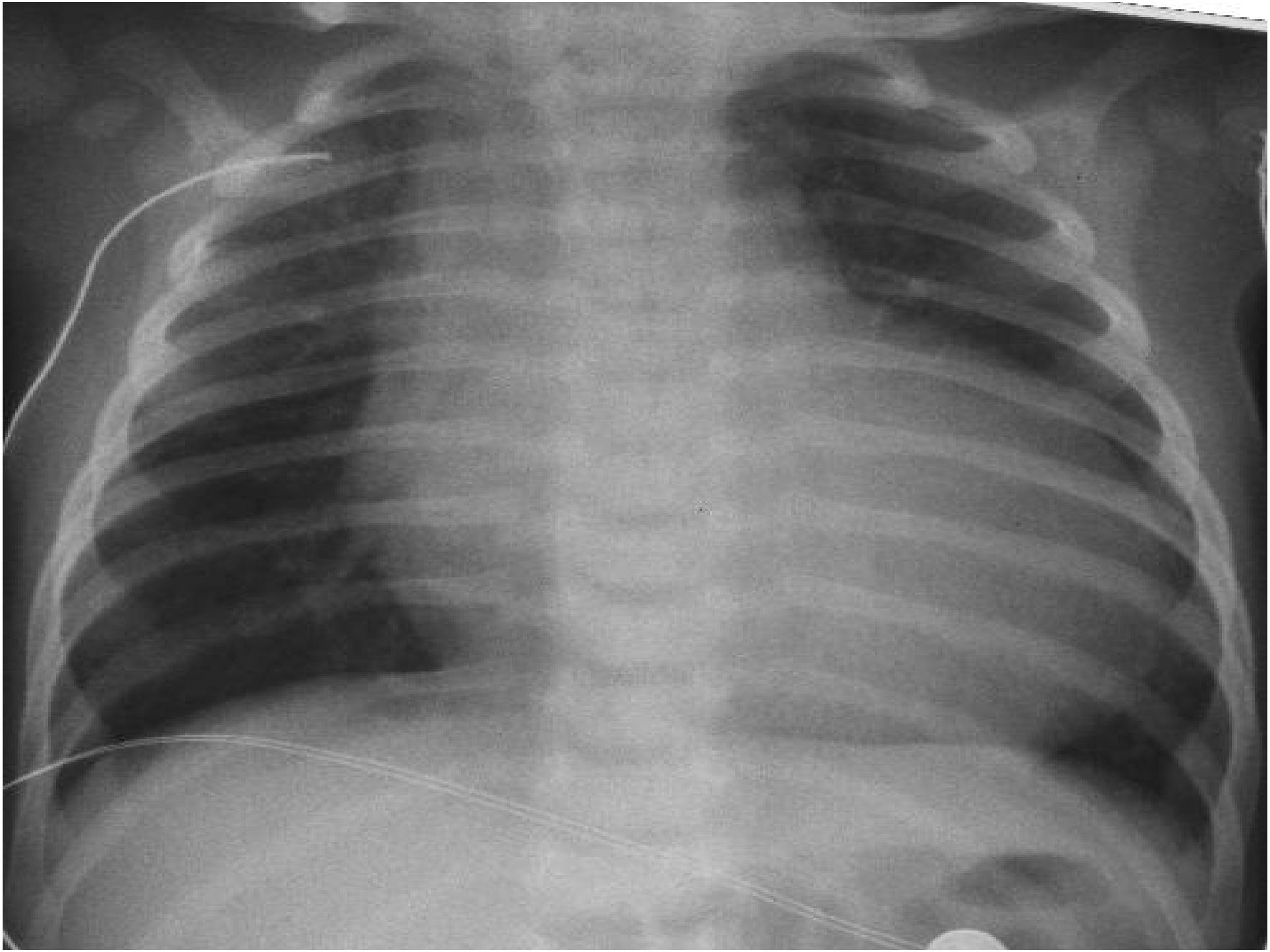
Jim has a resting HR of 54bpm while Arnie has a resting HR of 76bpm. One of them must have some sort of cardiac disorder. True or False? Explain.

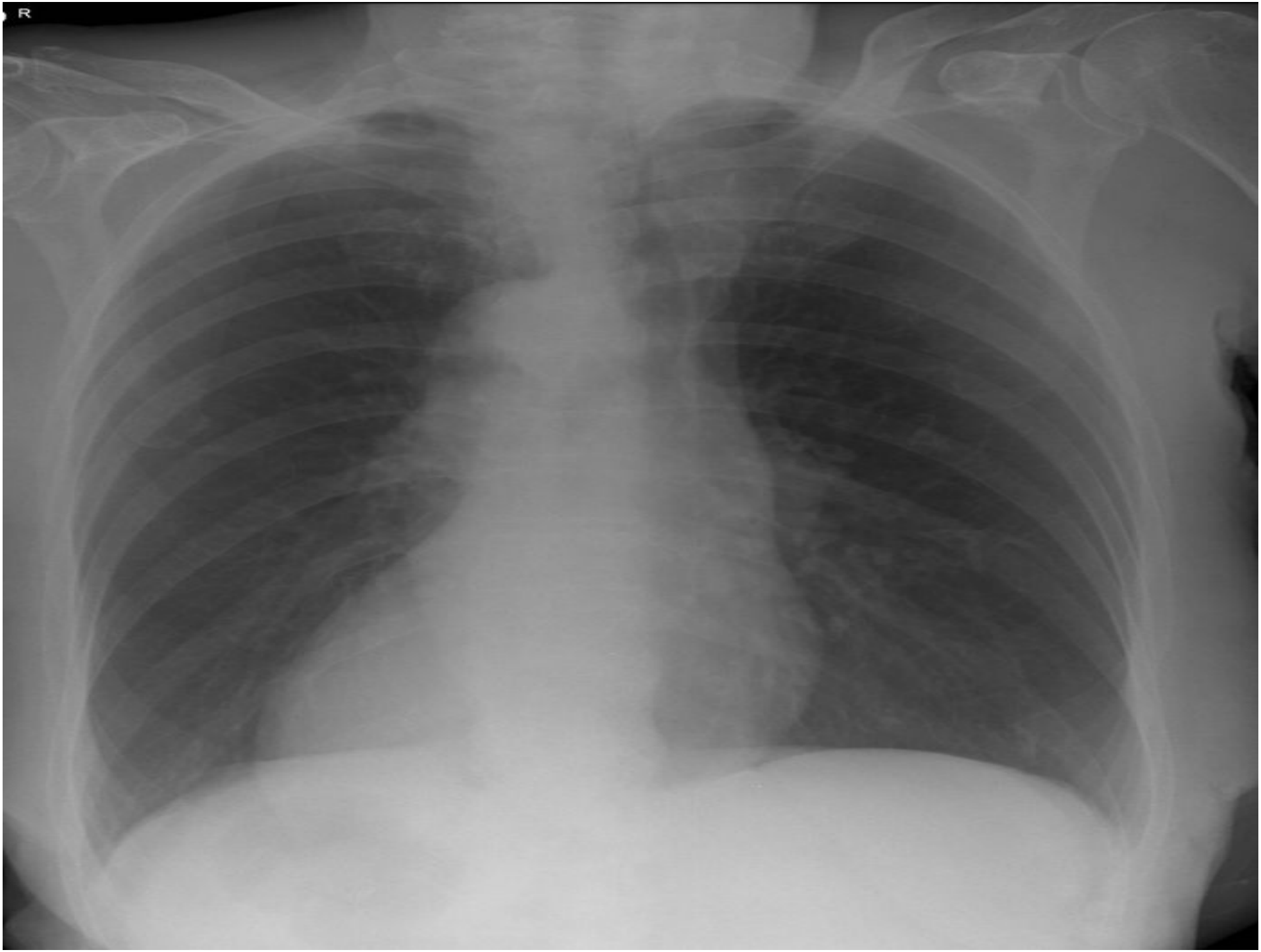
False normal rate

While riding home on the bus (reading the chapter on blood vessels in your text), the elderly woman seated next to you notices your A&P book and strikes up a conversation with you. She tells you that her blood pressure is something over 90 – she's not sure what the systolic BP is. She does, however, remember that the nurse said the systolic was just high enough to be considered hypertensive. You decide to test out what you learned in A&P lab, so you find her radial pulse and count the number of times you feel it in 10 seconds. You feel it 13 times.

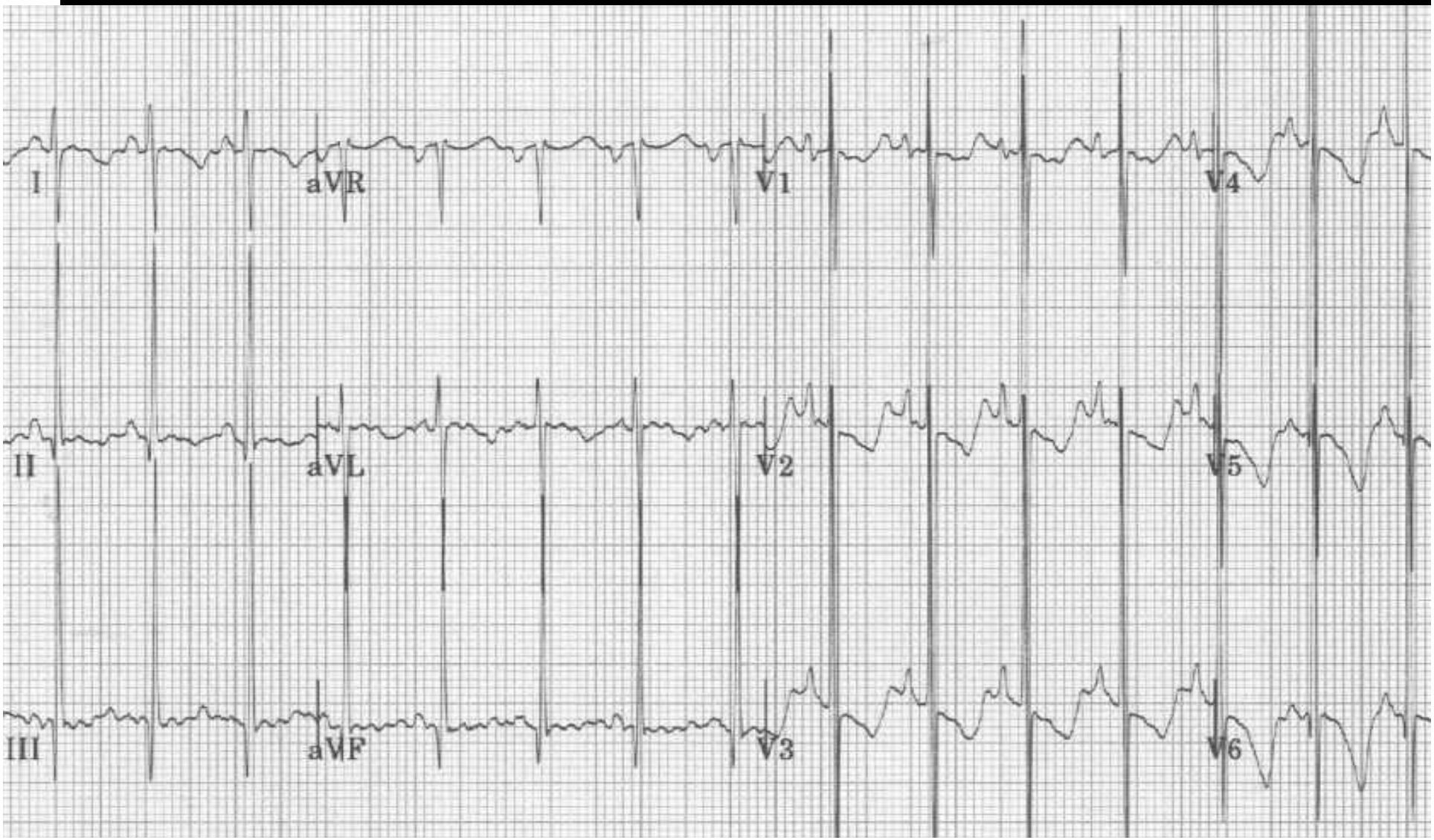
Calculate an approximate value for the woman's cardiac output.

6.24ml/min

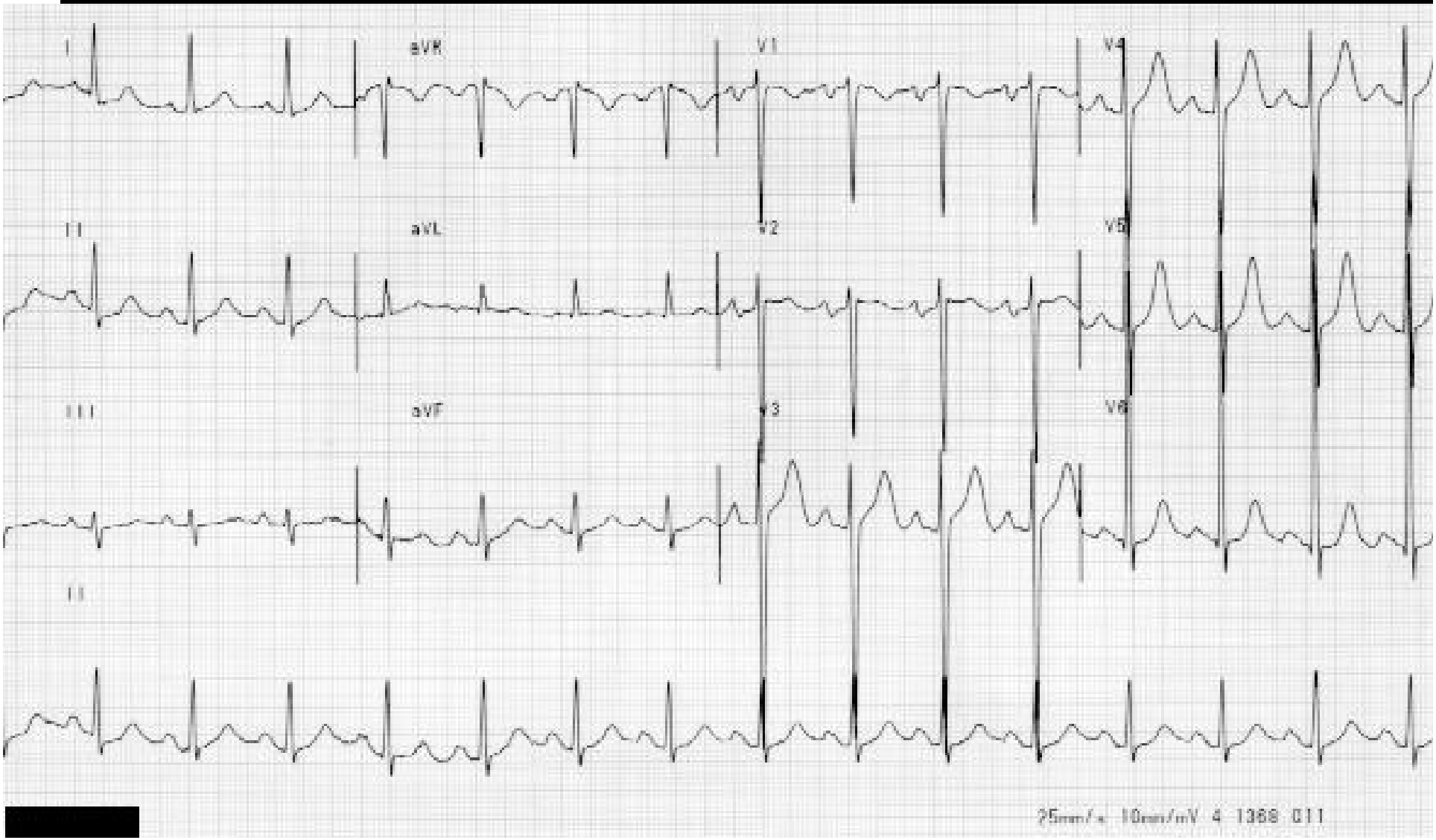



R

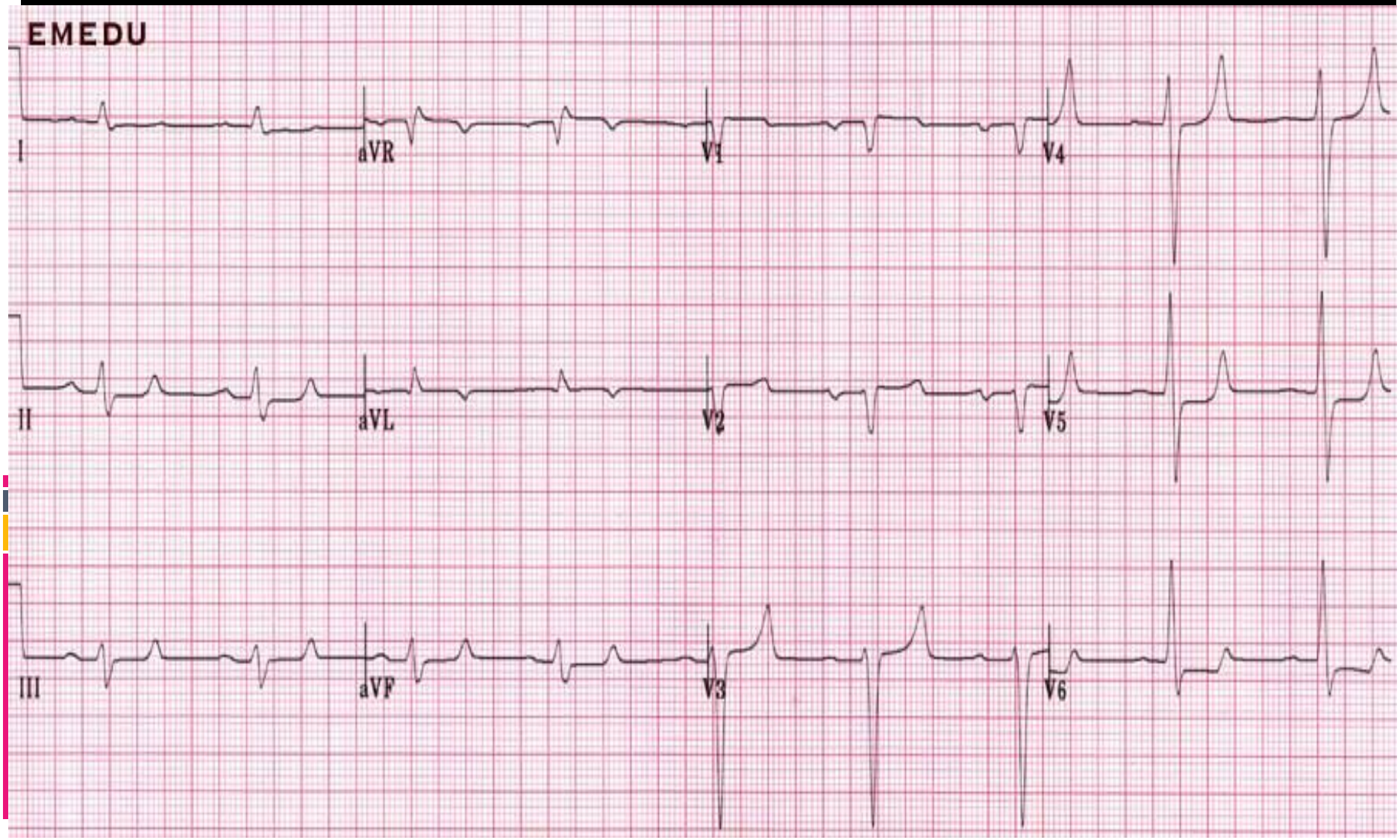
Same patient as the previous x ray



EKG 1



EKG2



HYPERKALIEMIA