

Chestpain in Reykjavik

ESIM 2017

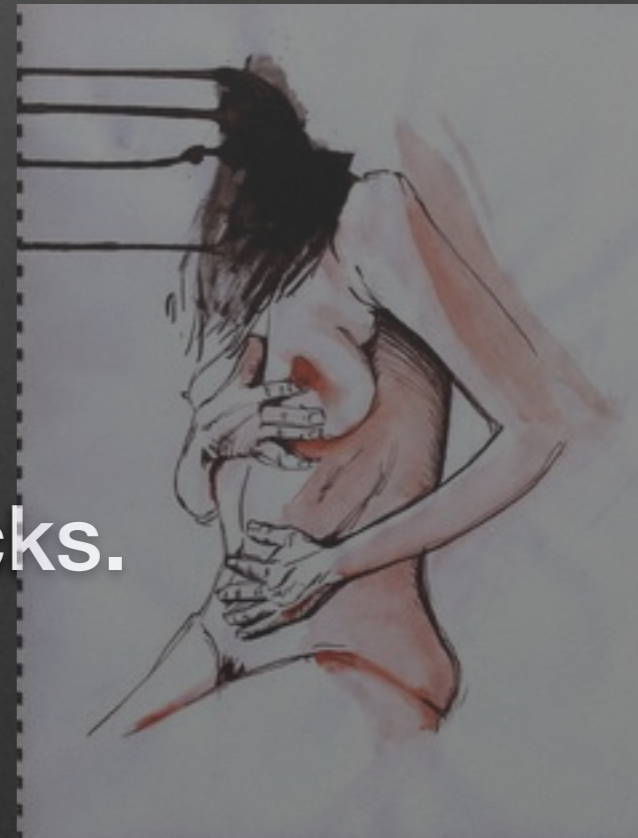
Bára Dís Benediktsdóttir

Dagrún Jónasdóttir



Clinical presentation

- 46 year old woman came to the cardiology ER unit with 3 week history of cramping intermittent chest pain.
- Pain is located centrally and radiates to both arms and to lesser amount to the jaw.
- Enormous pain that comes mainly at rest. 10/10. Getting worse.
- 0-3x per 24h, but increased frequency of attacks.



Previous medical history

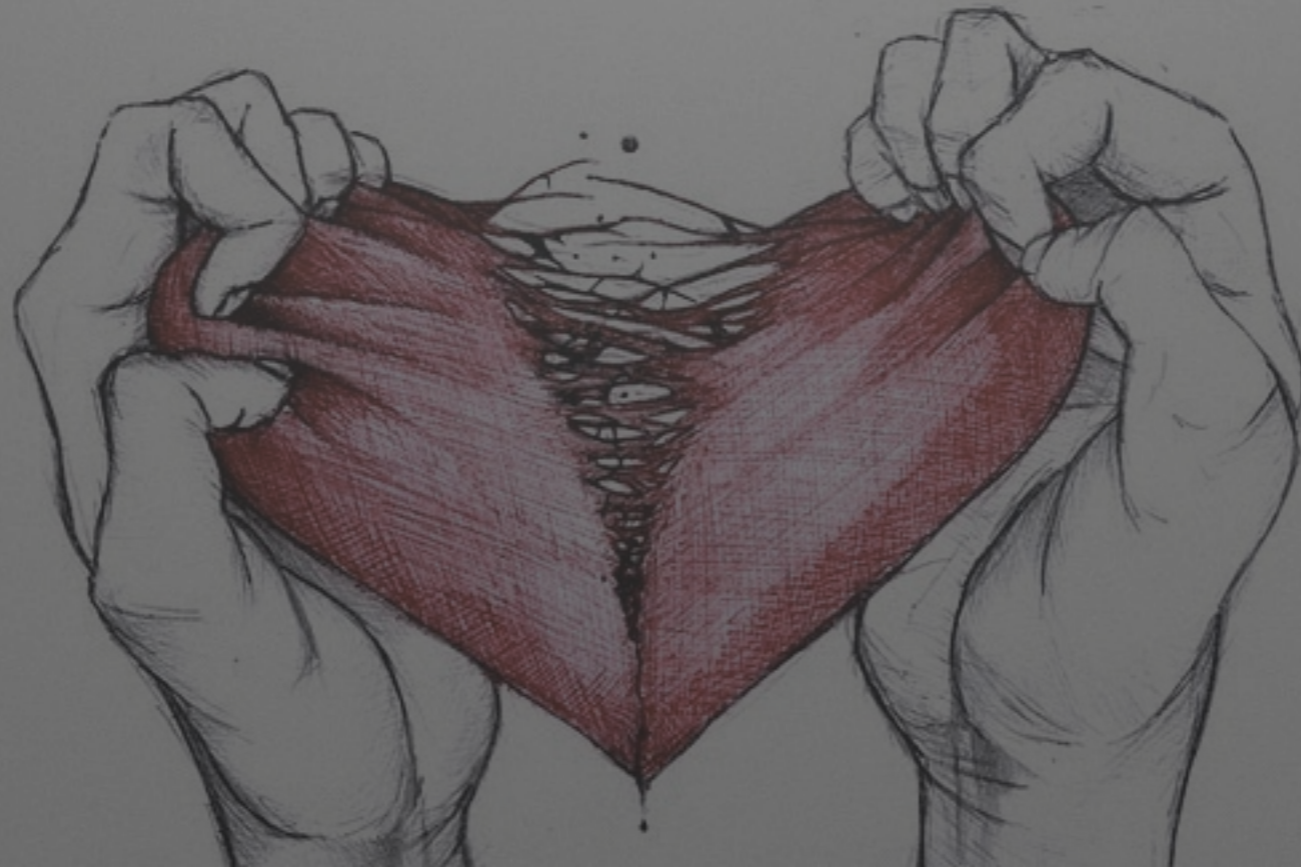
- 1. Ischemic stroke 2010 with left hemiparesis that resolved.
- 2. Hypertension for many years
- 3. Esophagitis. GERD.
- 4. Depression and anxiety

Medications

- Rabeprazol 1x20mg
- Amilorid/hydrochlorothiazid 2.5/25
- Enalapril 2x5mg
- Zopiclone 1x7.5mg PRN

**More information about
current clinical presentation?**

Work up plan?



- Risk factors for cardiovascular disease:
pos: Hypertension, smoking, family history.
neg: DM, hyperlipidemia
- 25 pack years and still smoking.
- General physical examination normal.

ECG at presentation

DOB: 16-Oct-1969 46 Years

Female

Dept: I4EG

Room: E 4-

HR 77 . Sinus rhythm

ATHUGASEMDIR:11/08

FRAMKVMT AF:KAA

PR 194

QRSD 87

QT 390

QTc 442

Order #: 2026428

-- AXIS --

P 75

QRS 15

T 71

- ABNORMAL ECG -

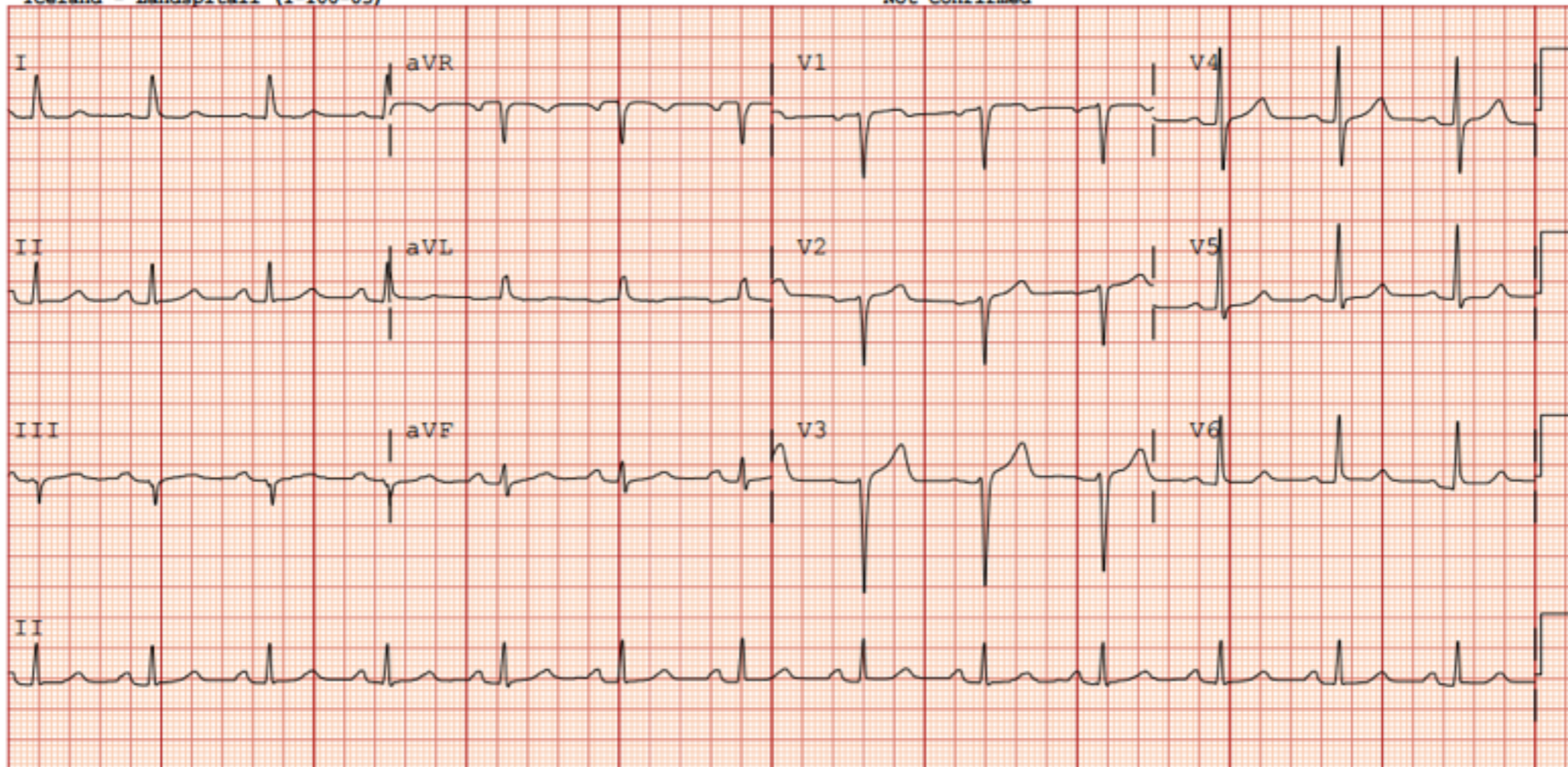
Previous ECG:11-Aug-2016 05:07:22 - Abnormal Unconfirmed

Standard 12

Requested By: Guðmundur Þorgeirsson

Iceland - Landspítali (1-100-03)

Not confirmed



Device: 62296

Speed: 25 mm/sec

Limbs: 10 mm/mV

Chest: 10 mm/mV

F 50- 0.15-40 Hz

PH100B CL P?

Blood tests at presentation

- Status, electrolytes, kidney function normal
- Troponin T: 5 ng/L (<15)

Observation at the ER

Observation at the ER

Female

11.8.2016 05:07:22

Iceland (1)
Landspítali (100)
10D (02)

Rate 75
PR 183
QRSD 95
QT 395
QTc 442

05.07 am

--AXIS--

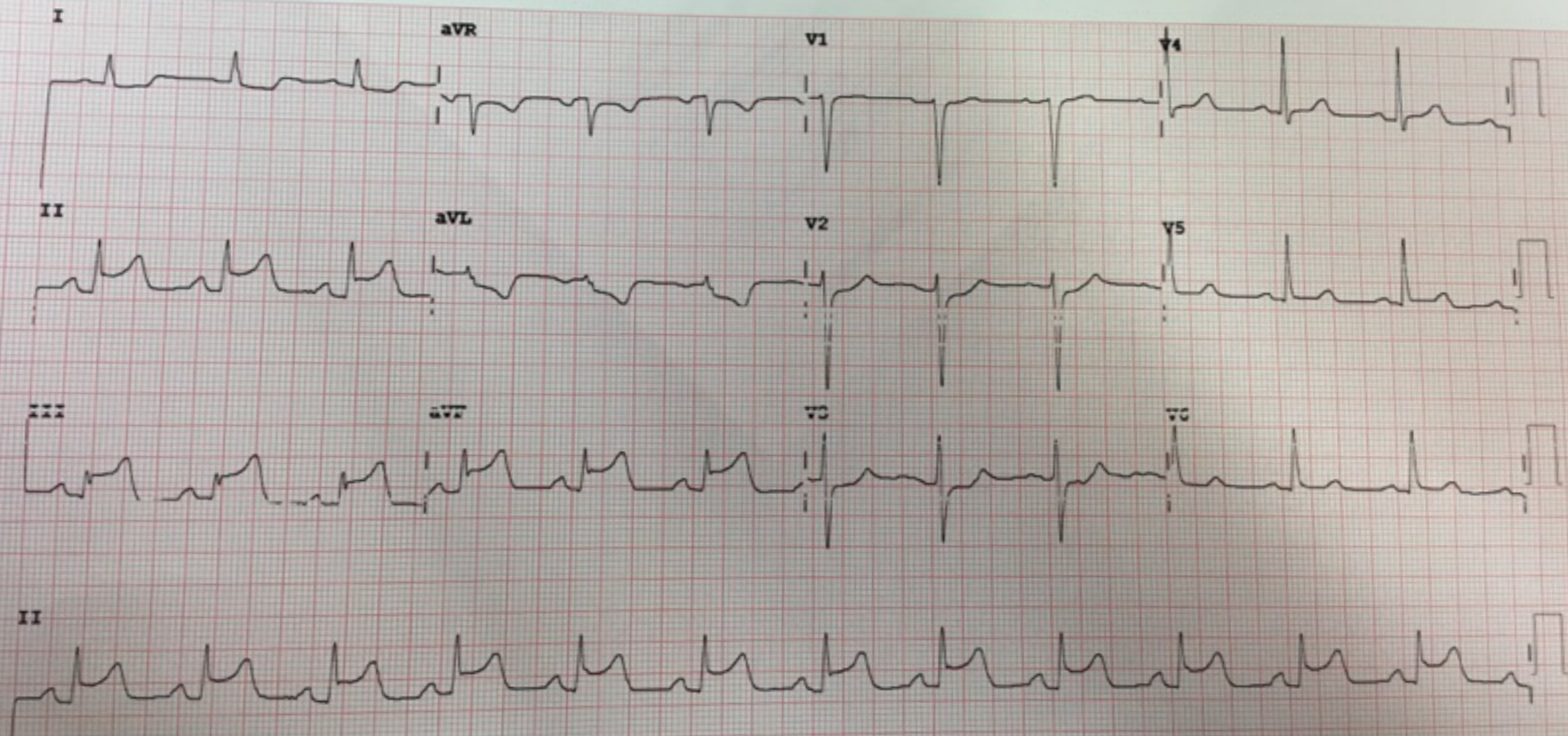
P 79
QRS 70
T 100

12 Lead; Standard Placement

- ABNORMAL ECG -

>>> Acute MI <<<

Unconfirmed Diagnosis



Device: 55675

Speed: 25 mm/sec

Limb: 10 mm/mV

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F 50~ 0,15- 40 Hz

PH100B bCL

M1709 A

Female

11.0.2018 09:07:22

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Landspítali (100)
10D (02)

Rate 75
PR 183
QRSD 95
QT 395
QTc 442

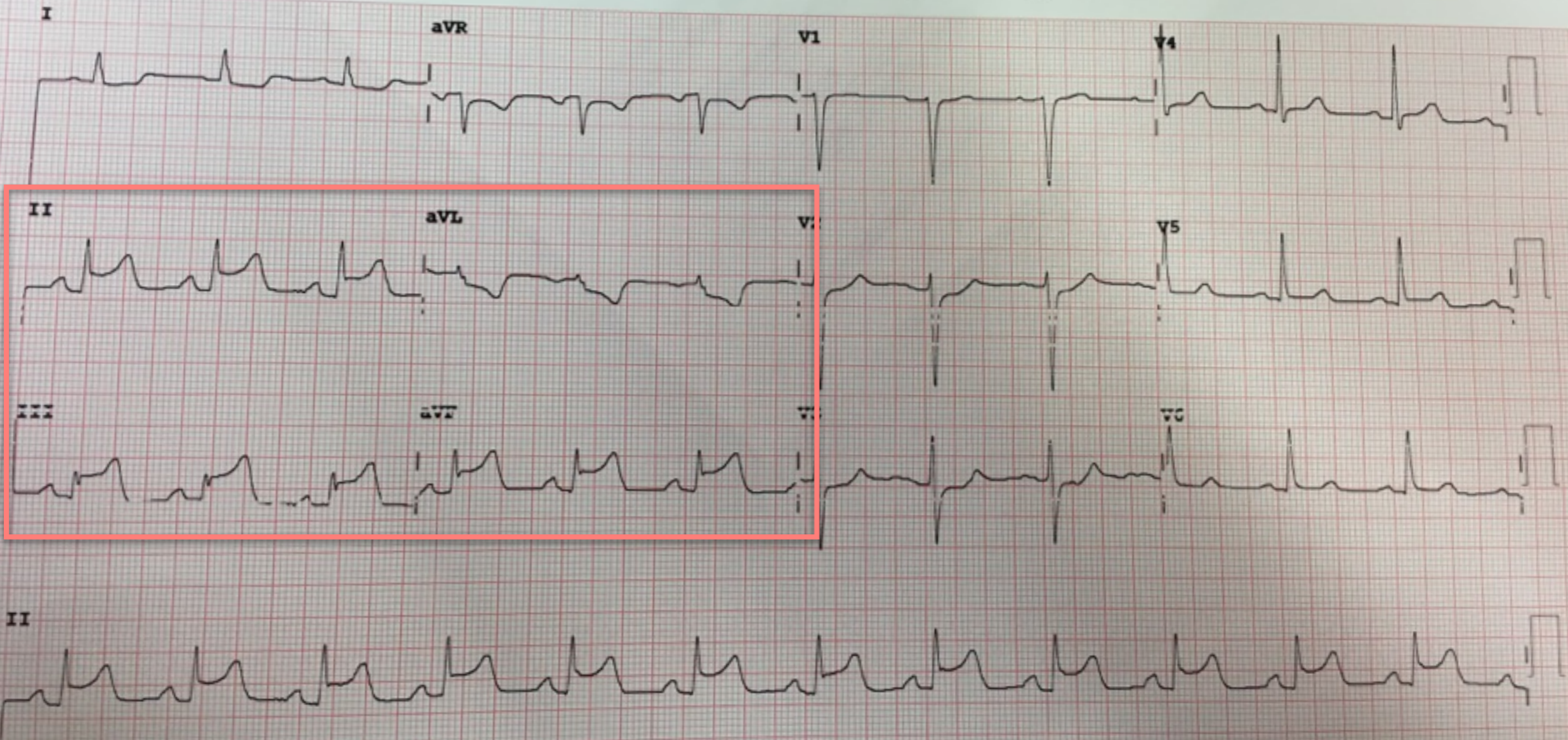
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PH100B bCL

M1709 A

Differential diagnosis - ST elevations



Differential diagnosis - ST elevations

- Myocardial infarct (STEMI)
- Coronary artery vasospasm
- Coronary artery dissection
- Drugs of abuse (eg, cocaine, crack, meth)
- Pericarditis
- Myocarditis
- Aortic dissection in to coronary
- LV aneurysm
- Early repolarization
- Hypothermia ("Osborn J waves")
- Brugada syndrome
- Takotsubo cardiomyopathy



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10D (02)

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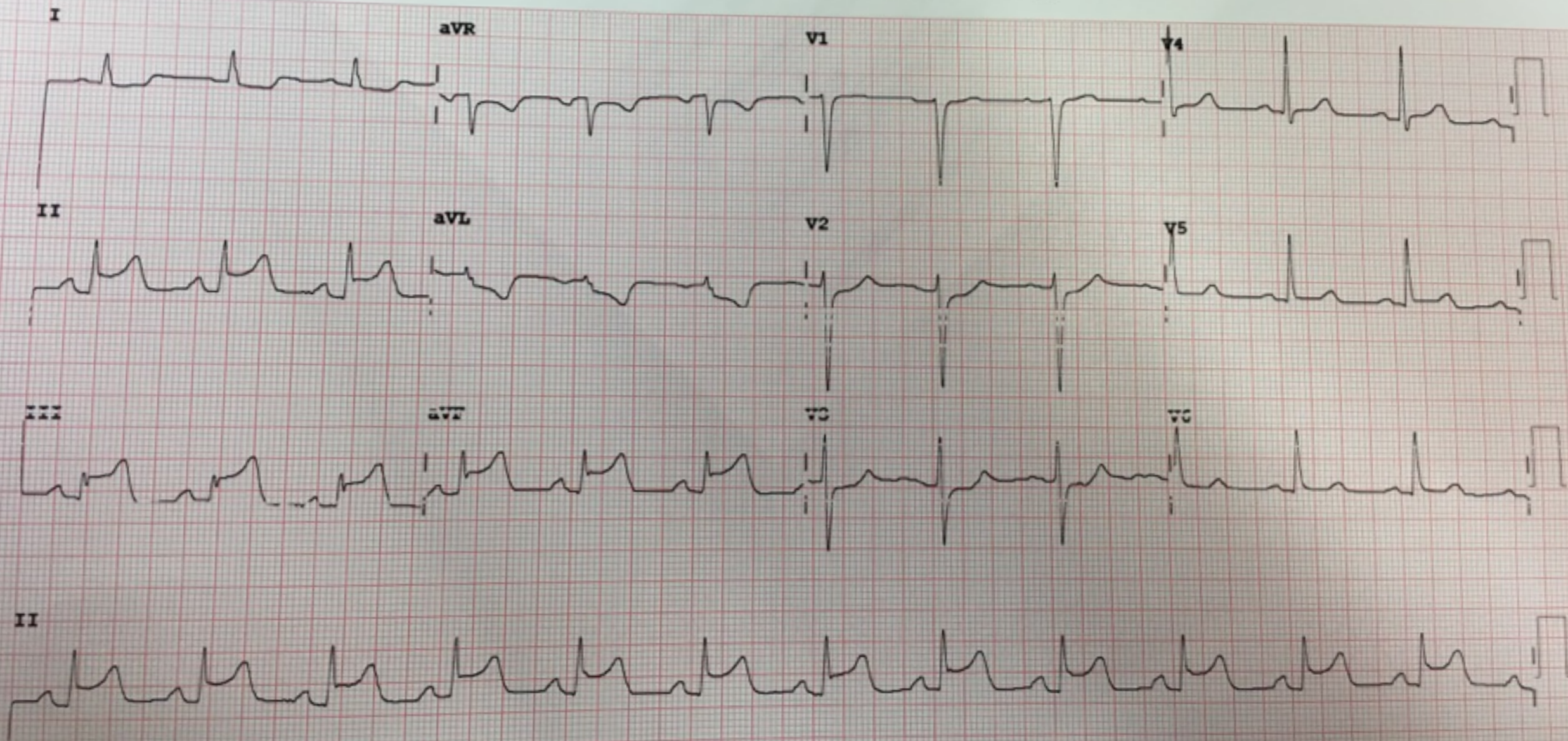
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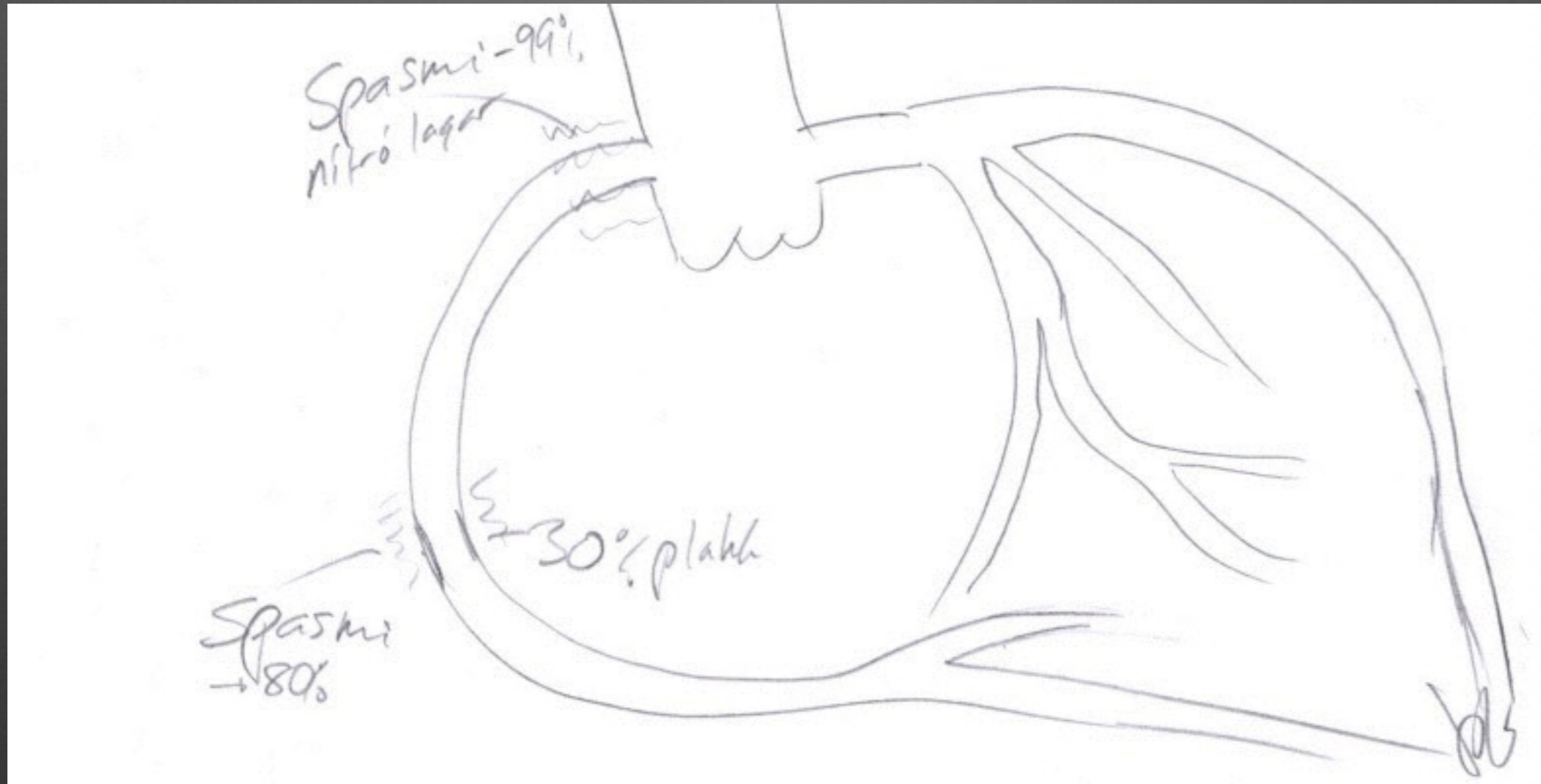
Chest: 10,0 mm/mV

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PH100B bCL

M1709 A

Coronary angiogram



Diagnosis?

Diagnosis?

- Vasospastic angina
= Variant angina
= Prinzmetal angina

Diagnostic criteria Vasospastic angina

COVADIS diagnostic criteria for vasospastic angina

COVADIS diagnostic criteria for vasospastic angina*

Vasospastic angina diagnostic criteria elements

1. Nitrate-responsive angina (during spontaneous episode, with at least one of the following):

- Rest angina, especially between night and early morning
- Marked diurnal variation in exercise tolerance, reduced in morning
- Hyperventilation can precipitate an episode
- Calcium channel blockers (but not beta blockers) suppress episodes

2. Transient ischemic ECG changes (during spontaneous episode, including any of the following in at least two contiguous leads):

- ST segment elevation ≥ 0.1 mV
- ST segment depression ≥ 0.1 mV
- New negative U waves

3. Coronary artery spasm: Defined as transient total or subtotal coronary artery occlusion ($>90\%$ constriction) with angina and ischemic ECG changes either spontaneously or in response to a provocative stimulus (typically acetylcholine, ergot, or hyperventilation)

Symptoms of vasospastic angina

- Intermittent chest pain
- Attacks for 2-15 min at time
- Worse during night time
- Comes at rest
- Chest pain that does not change with inspiration or movement.

Treatment?



Treatment?

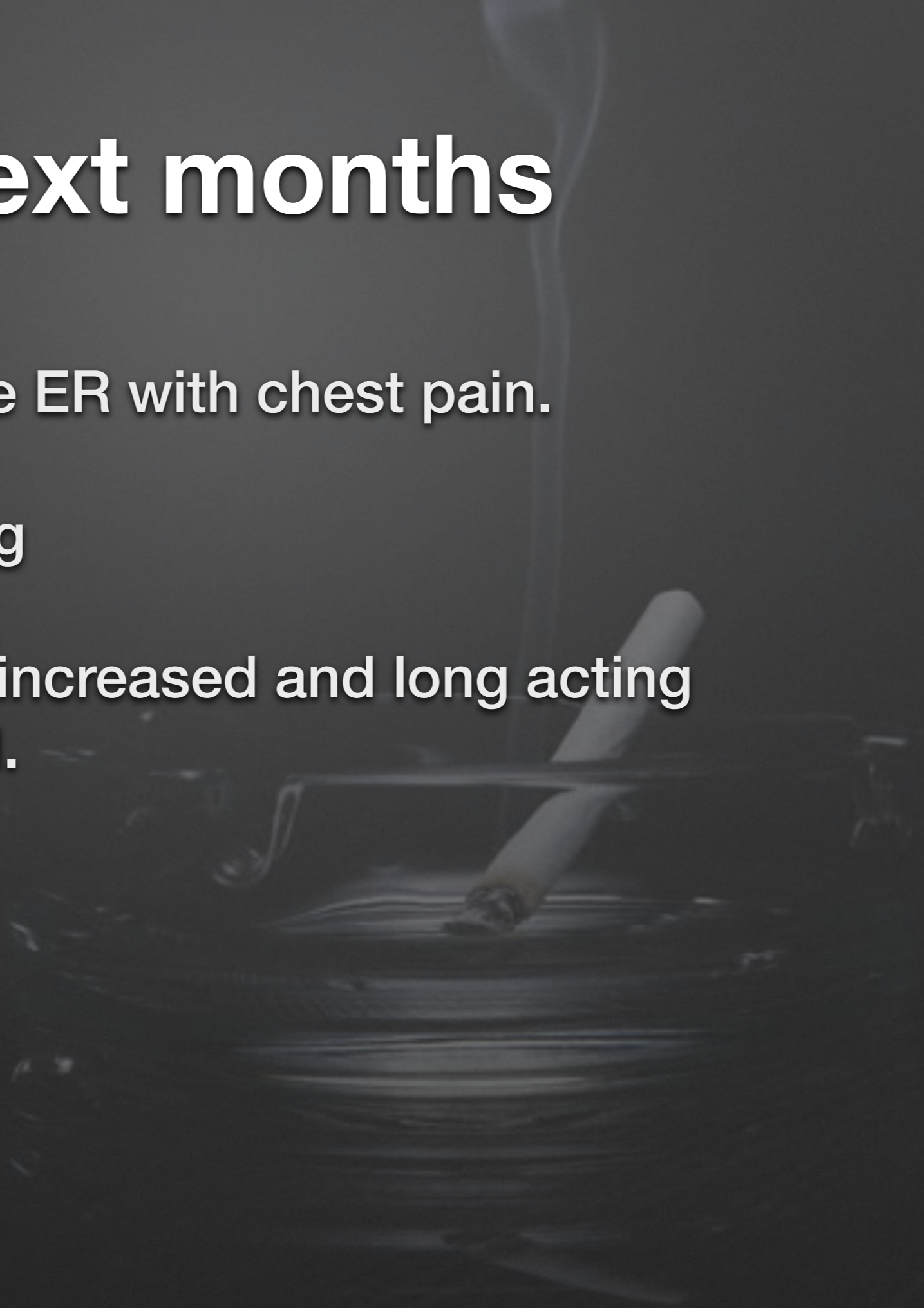
- A. Ca-channel blocker, quit smoking
- B. Beta blocker and nitroglycerin pn
- C. Long acting nitroglycerin
- D. Ca-channel blocker, long acting nitroglycerin, quit smoking
- E. Ca-channel blocker, quit smoking and nitroglycerin pn

Treatment?

- A. Ca-channel blocker, quit smoking
- B. Beta blocker and nitroglycerin pn
- C. Long acting nitroglycerin
- D. Ca-channel blocker, long acting nitroglycerin, quit smoking
- E. Ca-channel blocker, quit smoking and nitroglycerin pn

Next months

- Frequent visit at the ER with chest pain.
- Patient still smoking
- Doses of diltiazem increased and long acting nitroglycerin added.



Another night at the ER

- Witnessed cardiac arrest at home at 6 am
- VF - electronic cardioversion by ambulance team
- Spontantly breathing but unconsciousness
- Extreme vasospasm when inserting arterial catheter

HR 76 . Sinus rhythm
. Probable left ventricular hypertrophy
PR 180 . ST elevation, consider anterior injury
QRSD 96 . Borderline prolonged QT interval
QT 436
QTc 491

FRAMKVKMT AF:GJ

-- AXIS --

P 64
QRS 39
T 66

- ABNORMAL ECG -

Previous ECG:11-Dec-2016 07:09:26 - Abnormal Unconfirmed

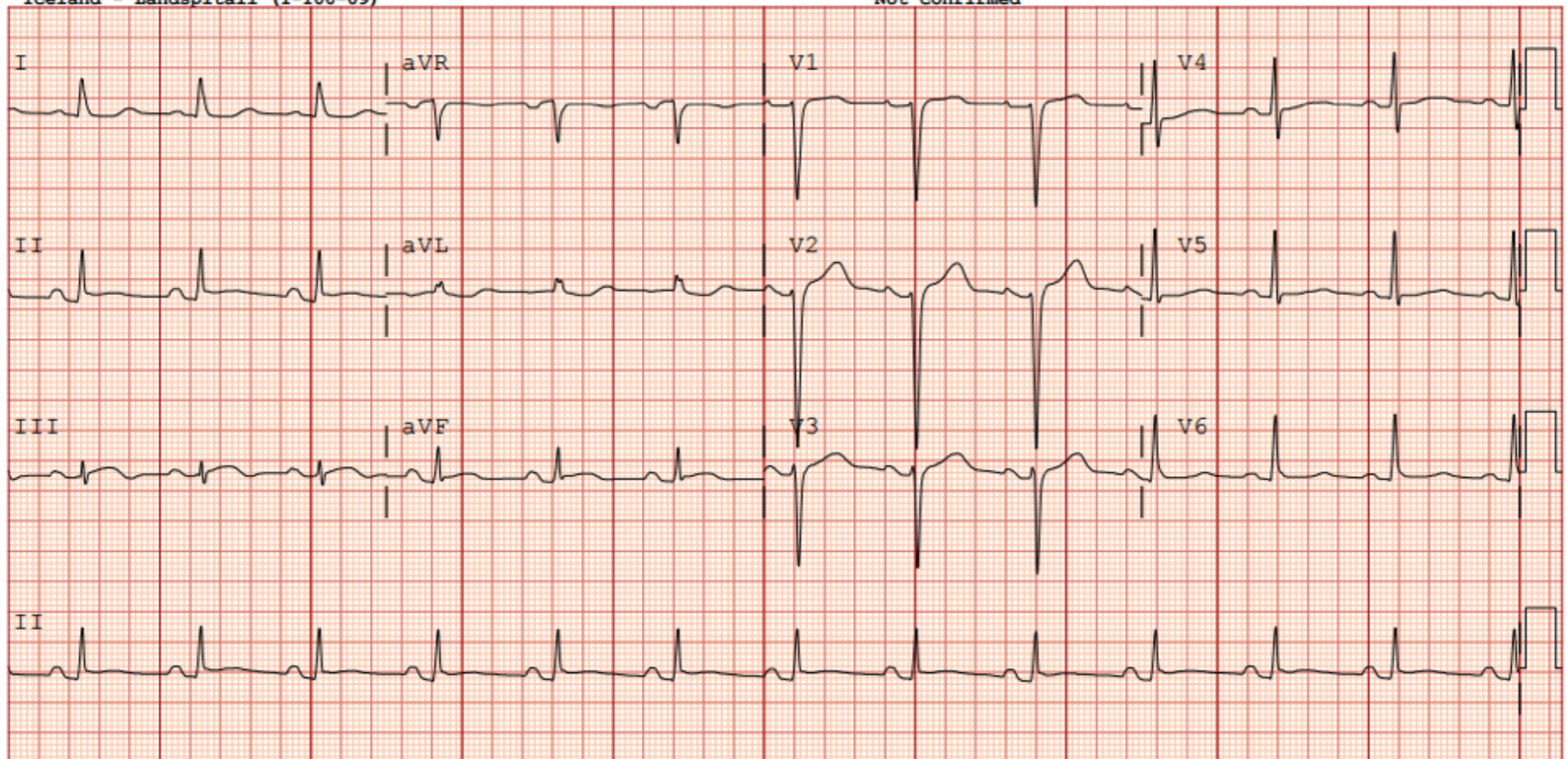
Order #: 2177850

Standard 12

Requested By: Berglind Gerða Lib>

Iceland - Landspítali (1-100-09)

Not confirmed



Device: 62296

Speed: 25 mm/sec

Limb: 10 mm/mV

Chest: 10 mm/mV

F 50~ 0.15-40 Hz

PH100B CL P?

- Transferred to the ICU
- No events during admission
- Discharged in good condition few days later with ICD.

Few weeks later: Another night at the ER

- Syncope at home - witness by husband

HR 65 . Sinus rhythm
. LVH with secondary repolarization abnormality
PR 166 . Inferoposterior infarct, acute (RCA)
QRSD 97 . Lateral leads are also involved
QT 394 \$. Probable RV involvement, suggest recording right precordial leads
QTc 410

-- AXIS --

P 69
QRS 53
T 97

- ABNORMAL ECG -

Previous ECG:29-Dec-2016 05:16:09 - Abnormal Unconfirmed

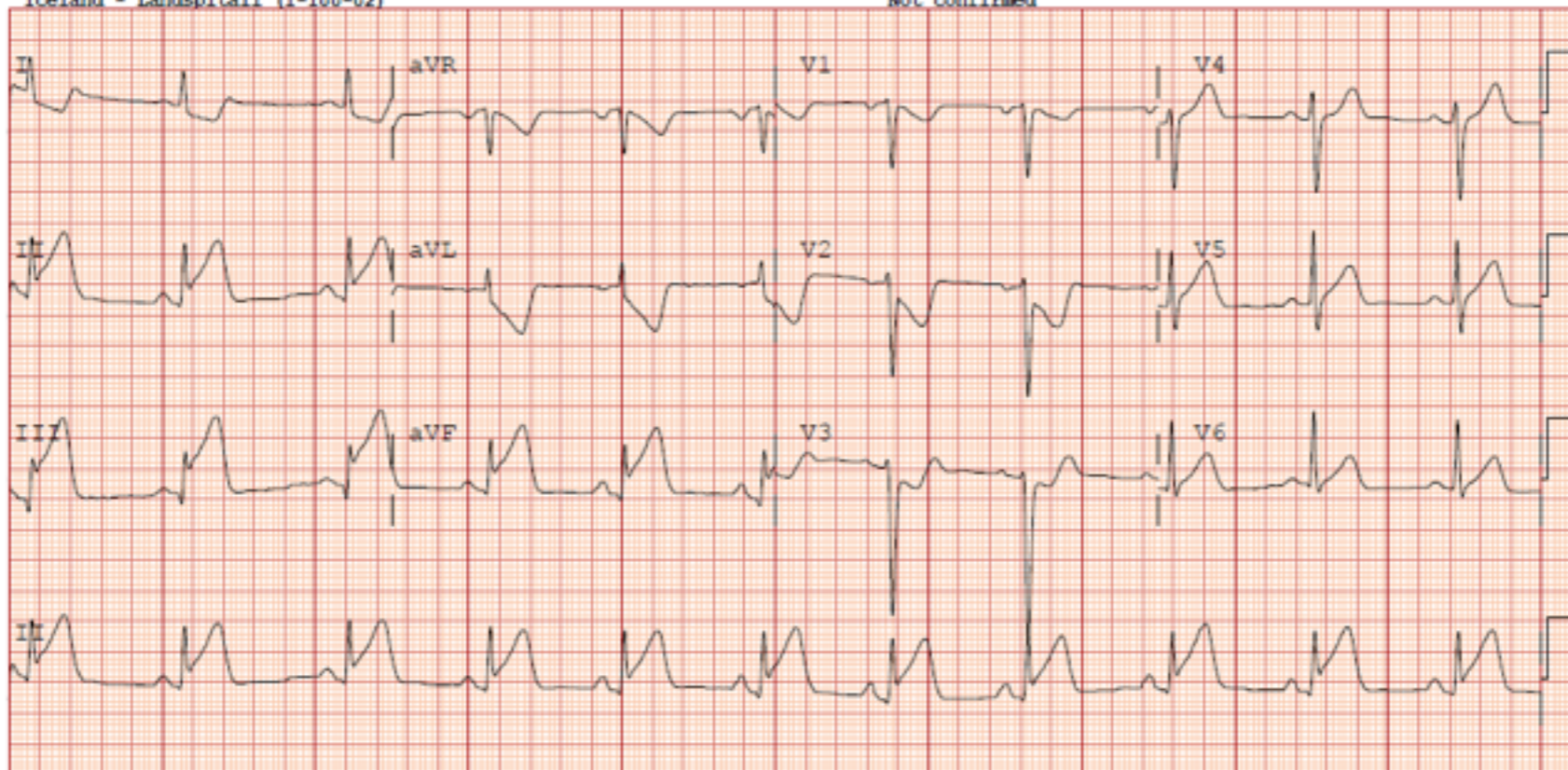
Order #: 2197907

Standard 12

Requested By: Sigfús Órvar Gizur>

Iceland - Landspítali (1-100-02)

Not confirmed



Device: 55675

Speed: 25 mm/sec

Lim: 10 mm/mV

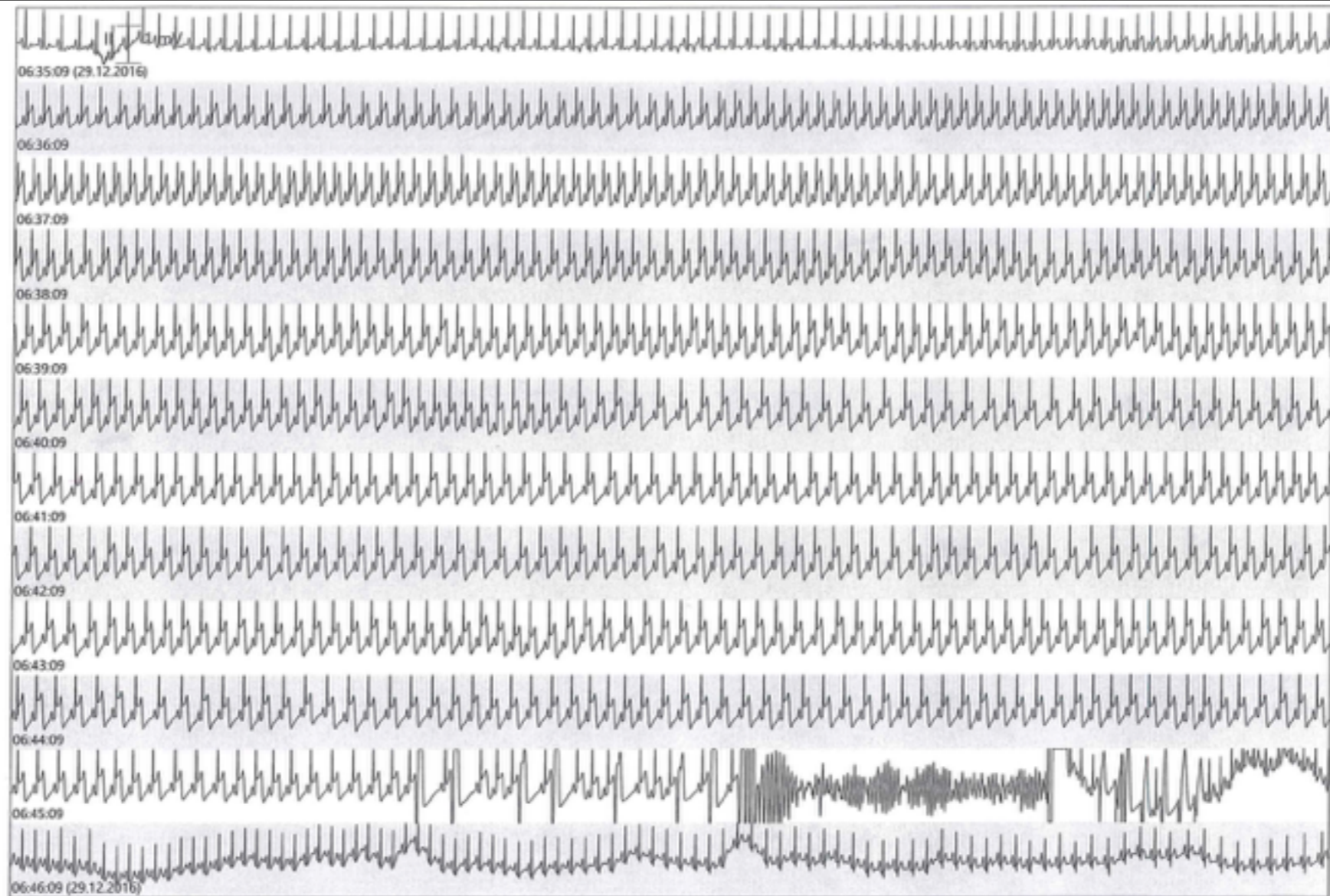
Chest: 10 mm/mV

F 50- 0.15-40 Hz

PH100B bCL P?

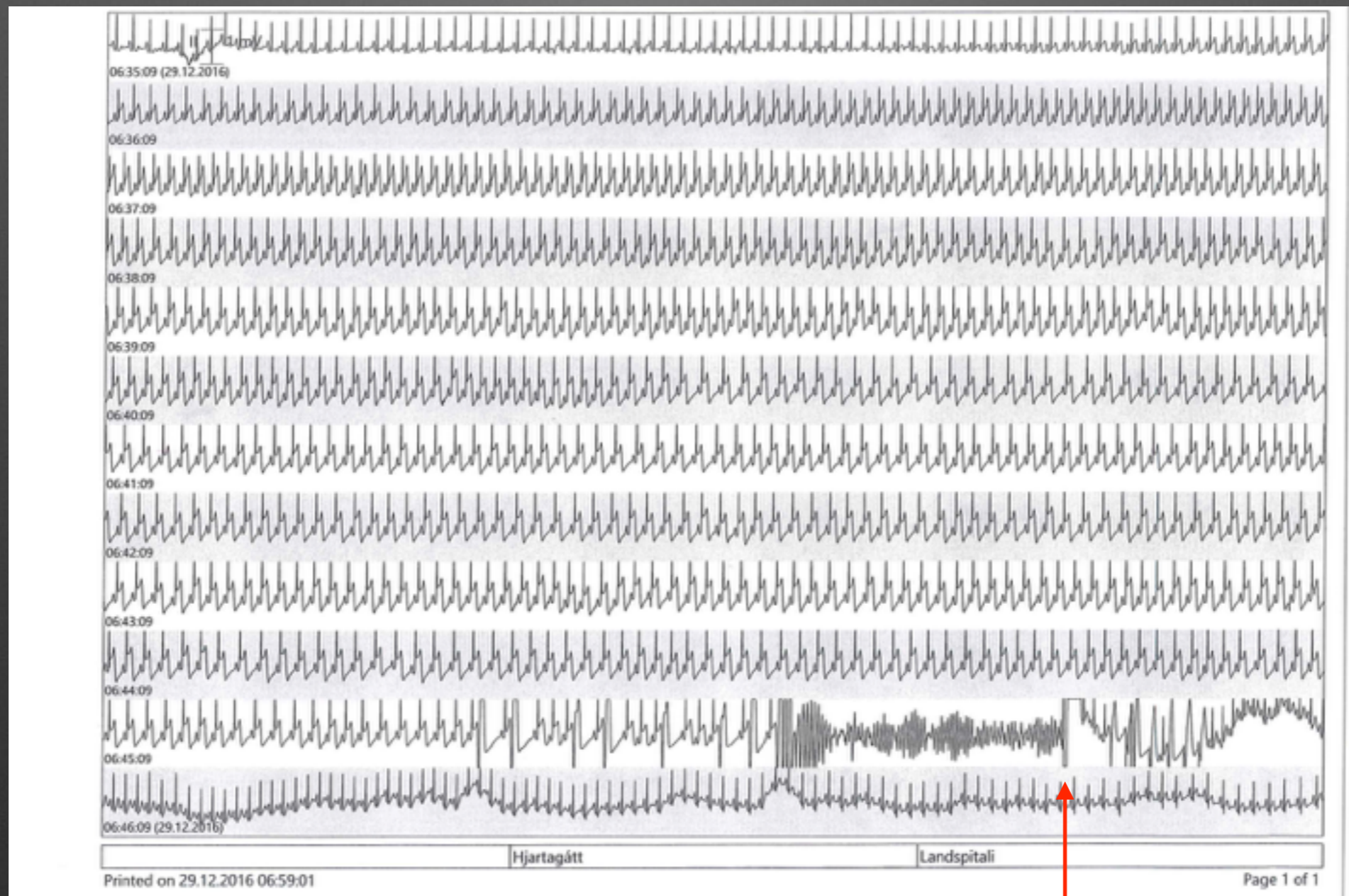
Chest pain 6 am

Not responsive



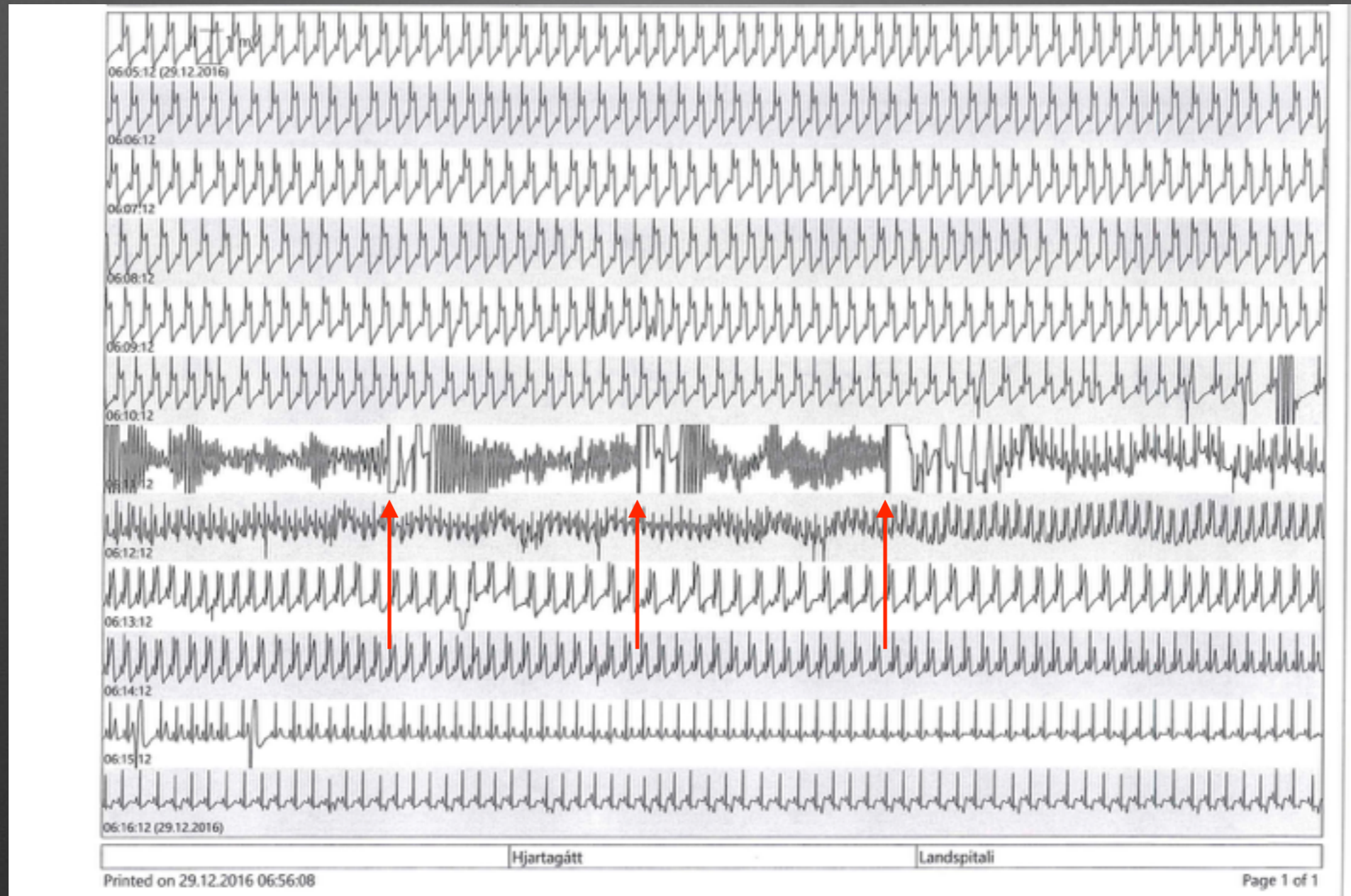
Chest pain 6 am

Not responsive



ICD

VF - multiple shock by ICD



Take home message

- ST elevation is not always STEMI
- Nicotine is a trigger - The importance of smoking cessation
- Vasospastic angina can be lethal

