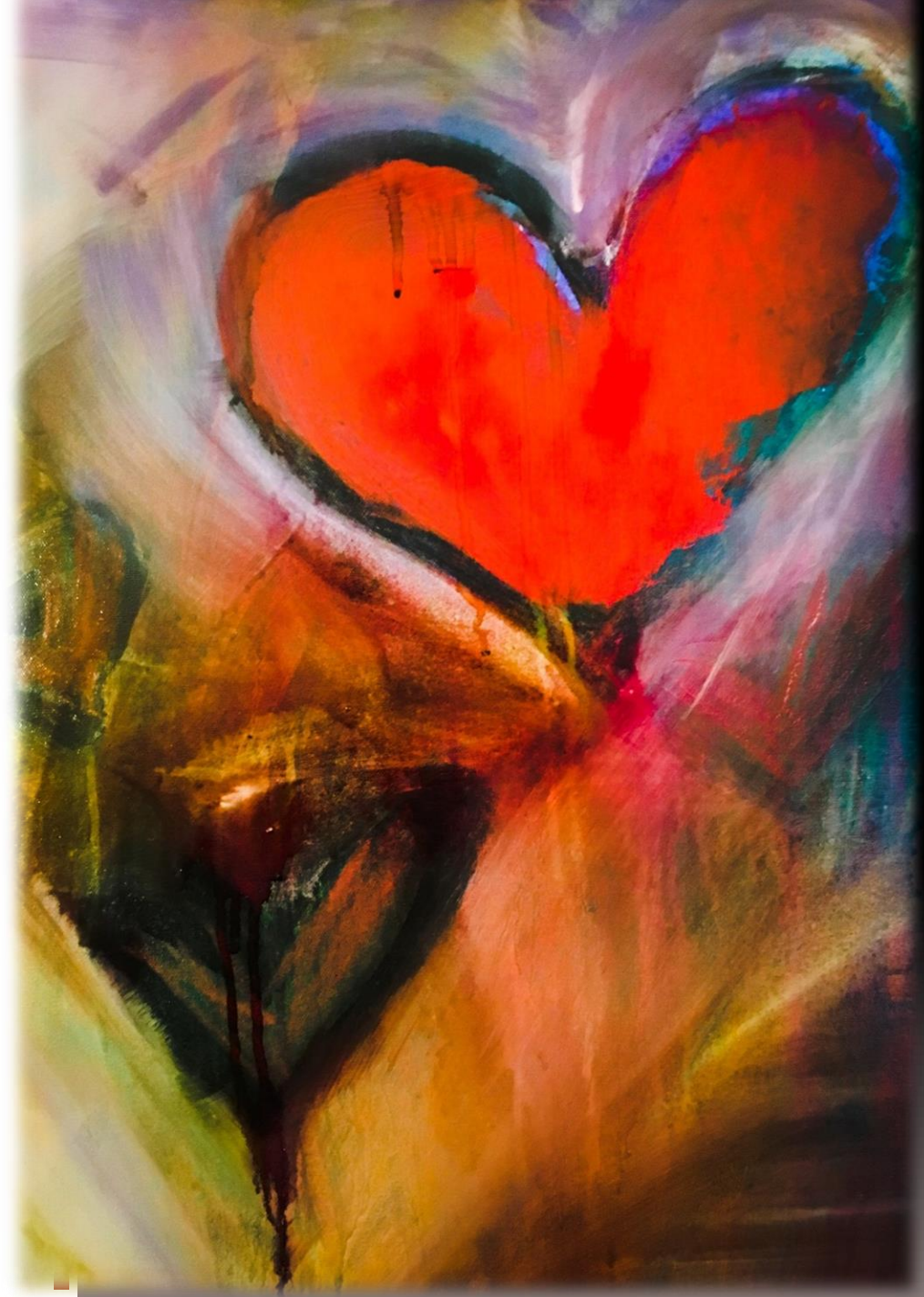


CHALLENGING CASES

By: Jennifer Carlquist, PA-C
CAQ ER Medicine

Objectives

- Review difficult patient presentations
- Troubleshoot patient complaints
- Review posterior MI

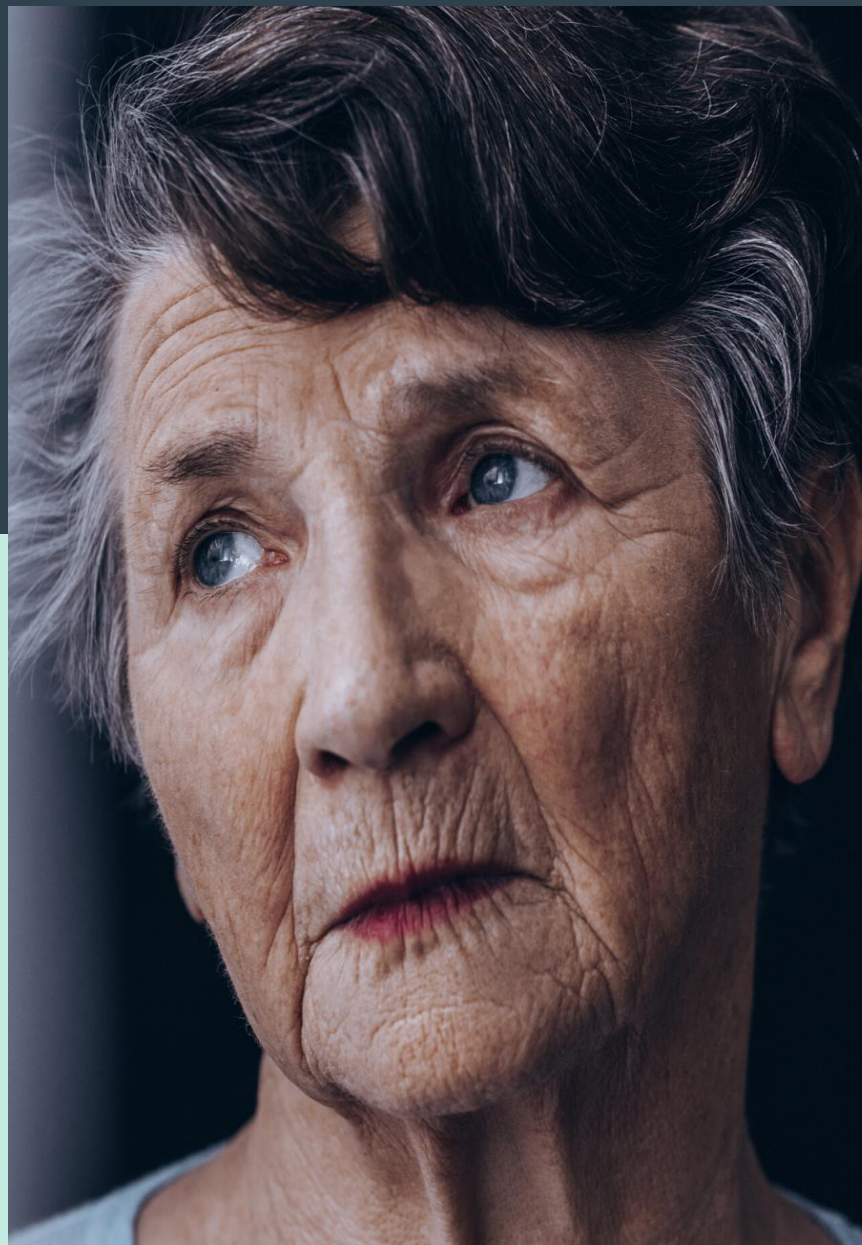


CASE

#1

89 Y/O FEMALE

"Chest pain"



Feels dizzy with dyspnea, feels unwell

Pmhx: *DM, HTN*

Meds: *Lisinopril, ASA, Metformin*

VS: *118/90 (post meds) was 170/110*

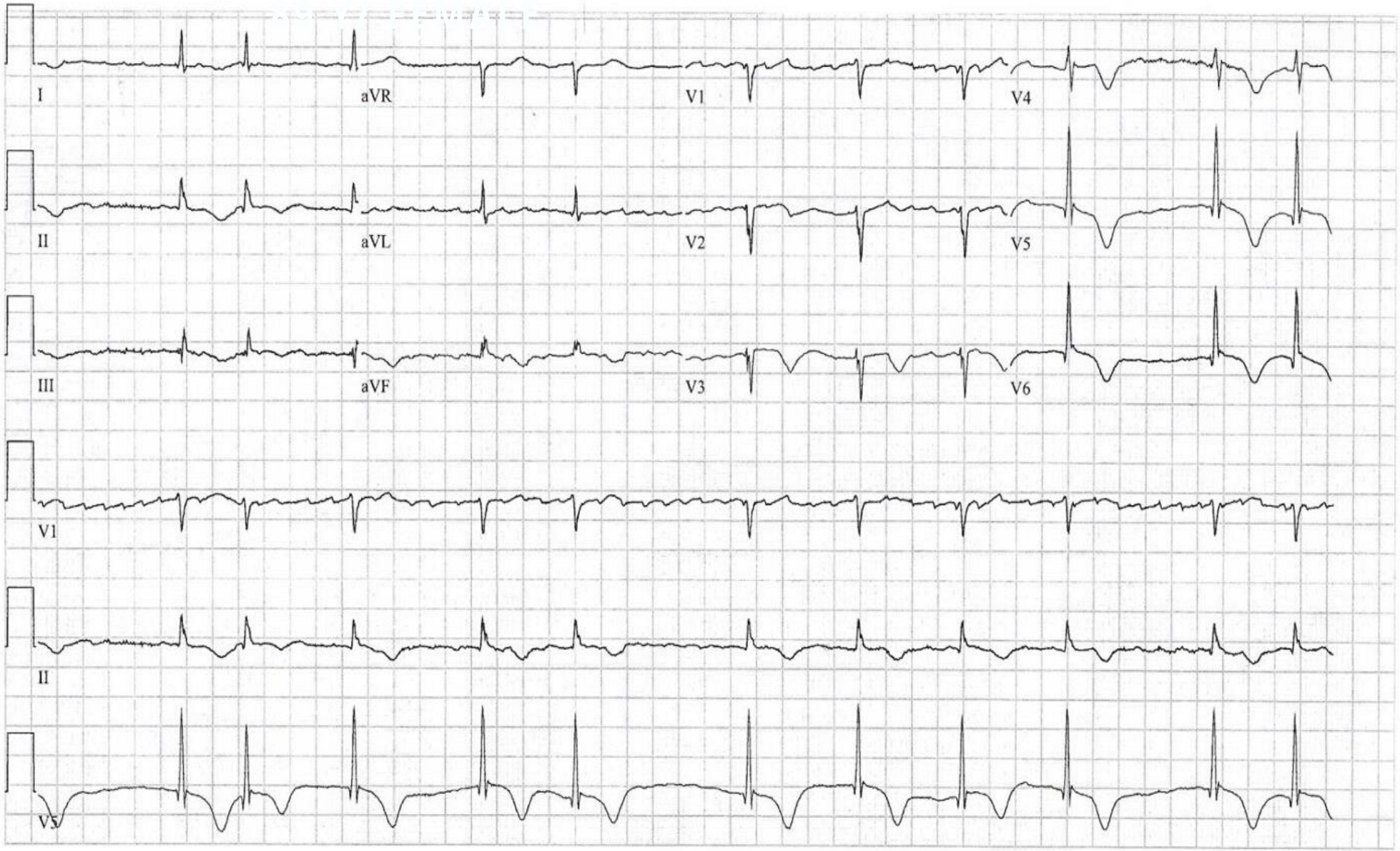
89 Y/O FEMALE

"Also I can't see out of my right eye"

Started when I was watching CNN...

about the riots.



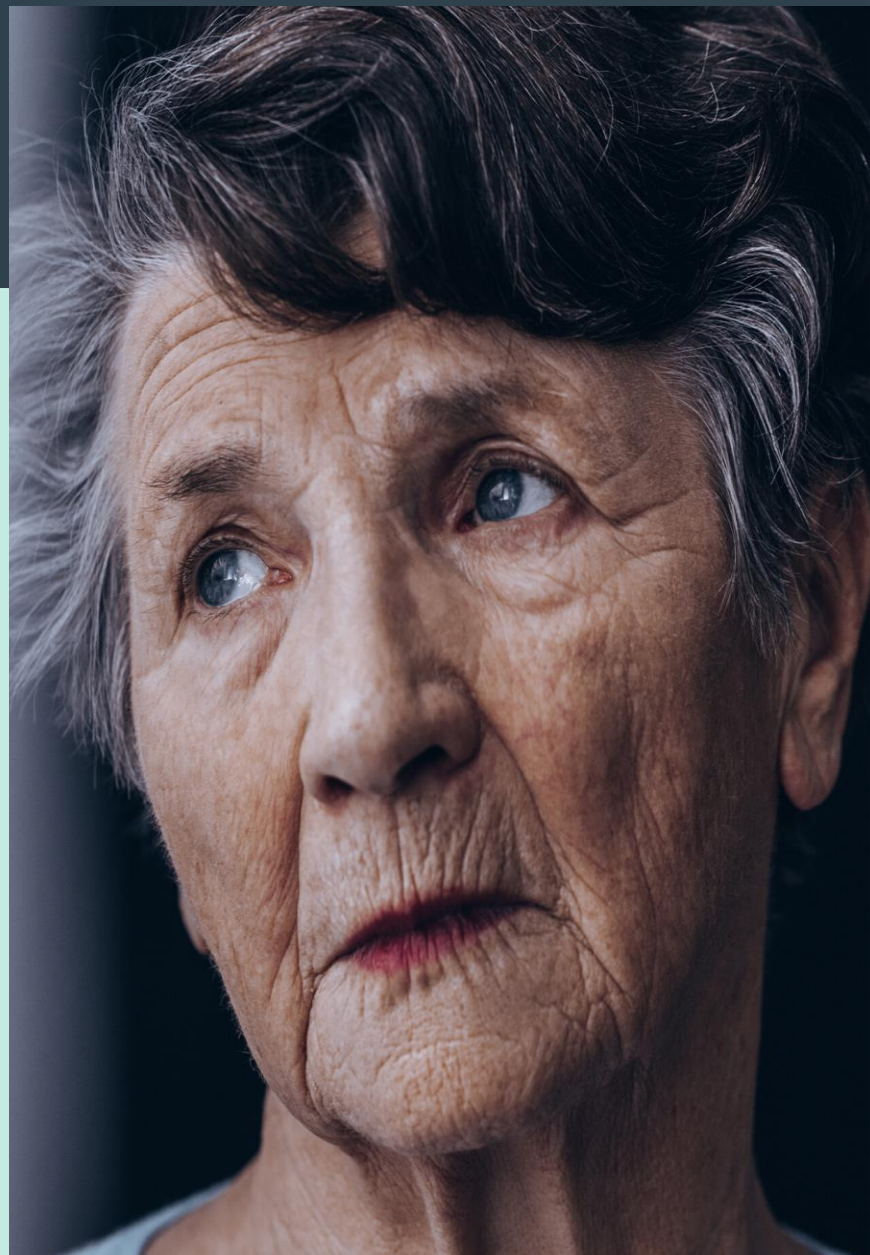

I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1
II
V5

Echo

Left ventricular distal-apical akinesis.
Normal left ventricular chamber size with normal systolic function with EF
32%.
Moderate concentric left ventricular hypertrophy.
Indeterminate left ventricular diastolic function due to atrial fibrillation.
Normal right ventricular chamber size with normal systolic function.
Mildly dilated left atrium and normal sized right atrium.
Moderate mitral regurgitation.
Right ventricular systolic pressure of 32 mmHg consistent with normal
pulmonary artery pressure.

No pericardial effusion.

Trop 10-19-7





CASE

#2

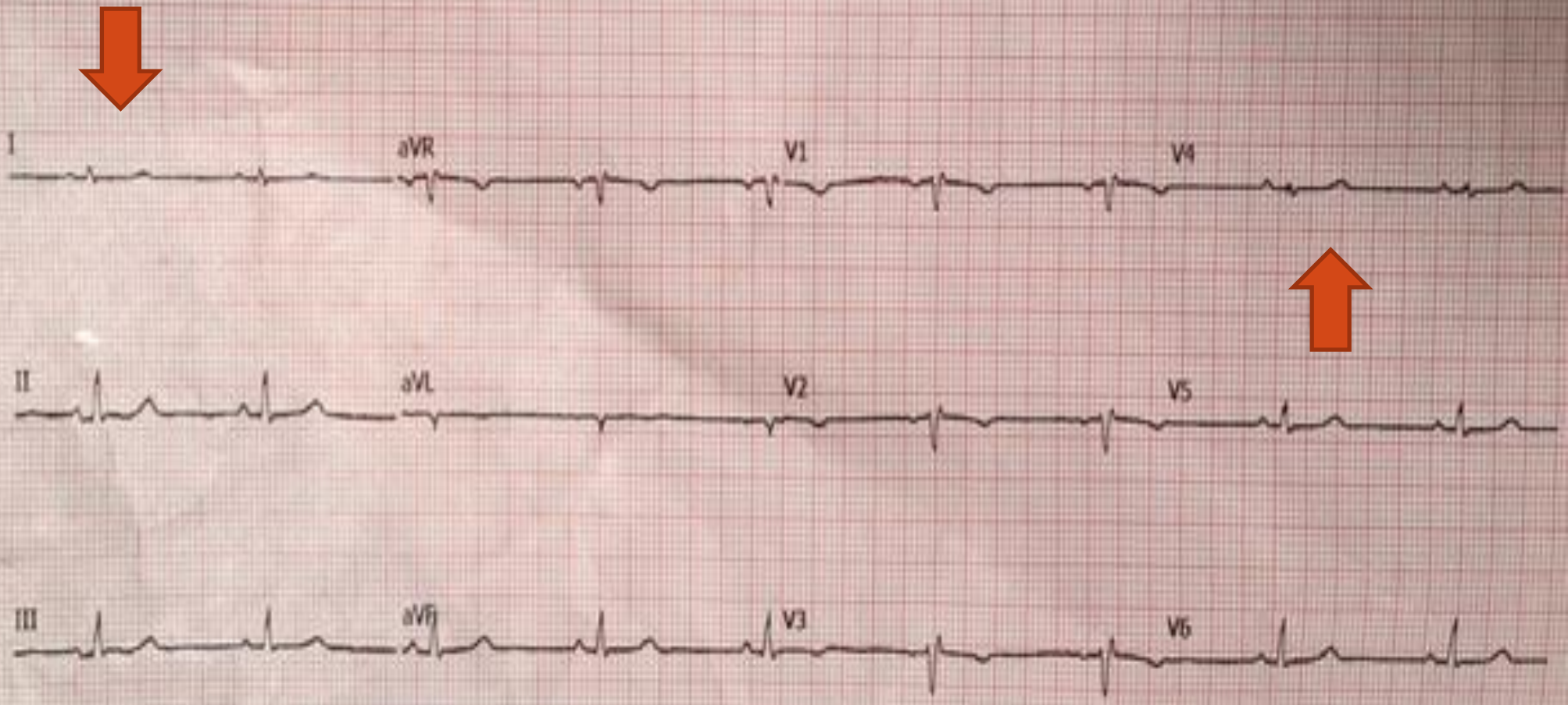

"I can't breathe"

35 y/o F with dyspnea with exertion x 1 month

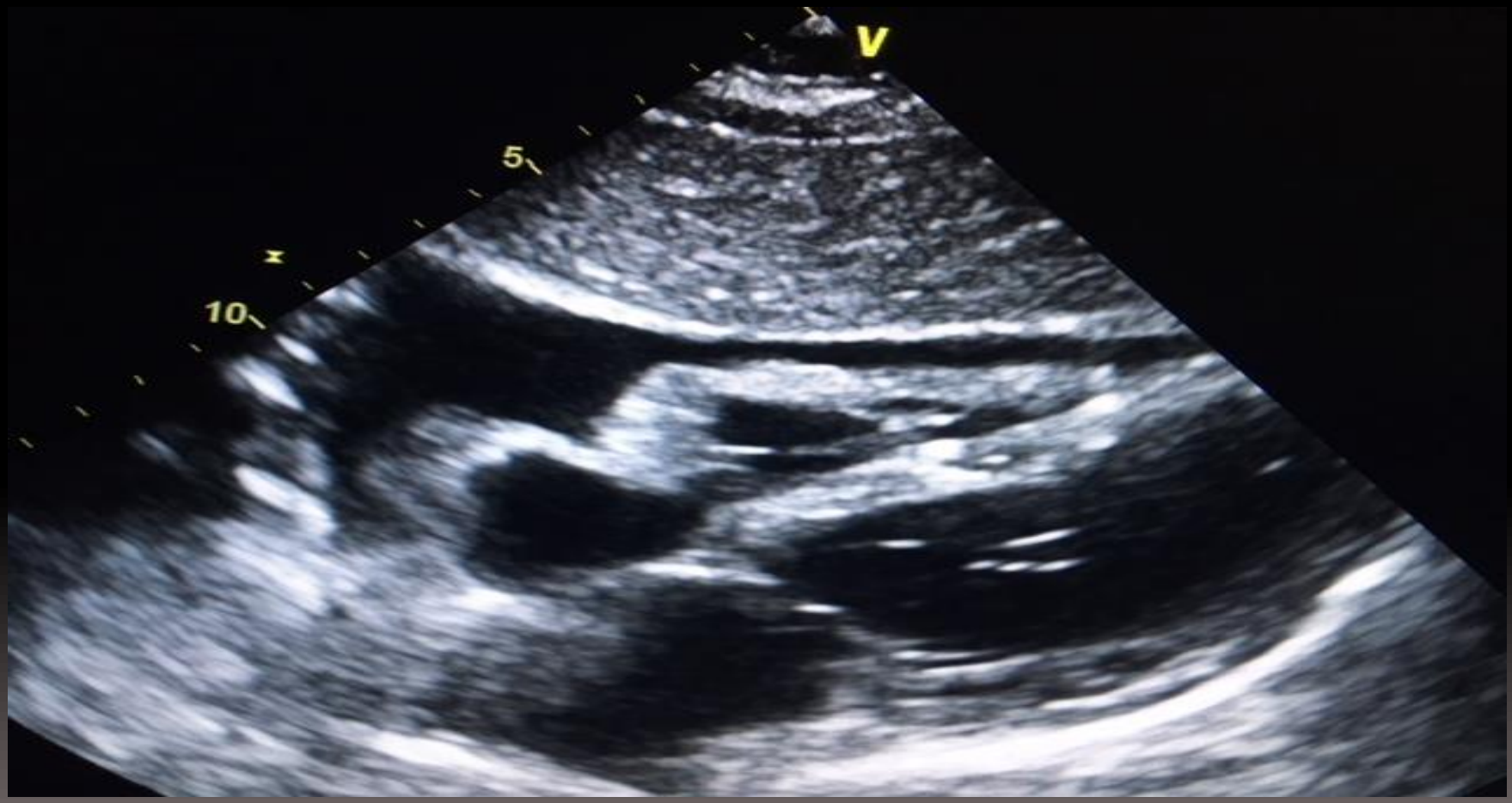
- Used to ride bicycle at higher speeds
- Now dyspneic with walking across hall
- Labs: HGB 14.0, CR 1.0, TSH 2.0, Glucose 113, ESR, CRP -
- Calcium score zero four years ago

Attending Ph:

QRS :	98 ms	Sinus bradycardia
QT / QTcBaz :	462 / 438 ms	Low voltage QRS
PR :	136 ms	Cannot rule out Anterior infarct , age undetermined
P :	84 ms	Abnormal ECG
RR / PP :	1104 / 1111 ms	
P / QRS / T :	70 / 86 / 70 degrees	



What does she need?



Summary

No thrombus masses or vegetations were present.
Normal left ventricular chamber size.
Left ventricular wall thickness is normal.
Diastolic filling pattern is normal.
Regional wall motion is normal.
Ejection fraction measured by Simpson's biplane is 76%.
The left atrial indexed volume is normal.
Normal right ventricular size and function.
The right atrium is of normal size.
The aortic valve is trileaflet without evidence of stenosis or insufficiency.
The mitral valve is structurally normal.
Trace mitral regurgitation is present.
The tricuspid valve is structurally normal.
Normal pulmonic valve structure.
Aortic root is normal.
Pulmonary artery is normal.
Pulmonary venous flow is normal.
The Inferior vena cava is dilated, however, does collapse > 50% with inspiration.
The pericardium appears thickened/ Pericarditis.
There is a moderate circumferential pericardial effusion.
The subcostal view demonstrates the largest measurement of 3.6 cm from the pericardium to the right atrium.
The right atrium does demonstrate some diastolic collapse as does the RV free wall.
No evidence of pleural effusion.



CASE

#3


"My BP is so high"

…Its worse with watching "scary" documentaries

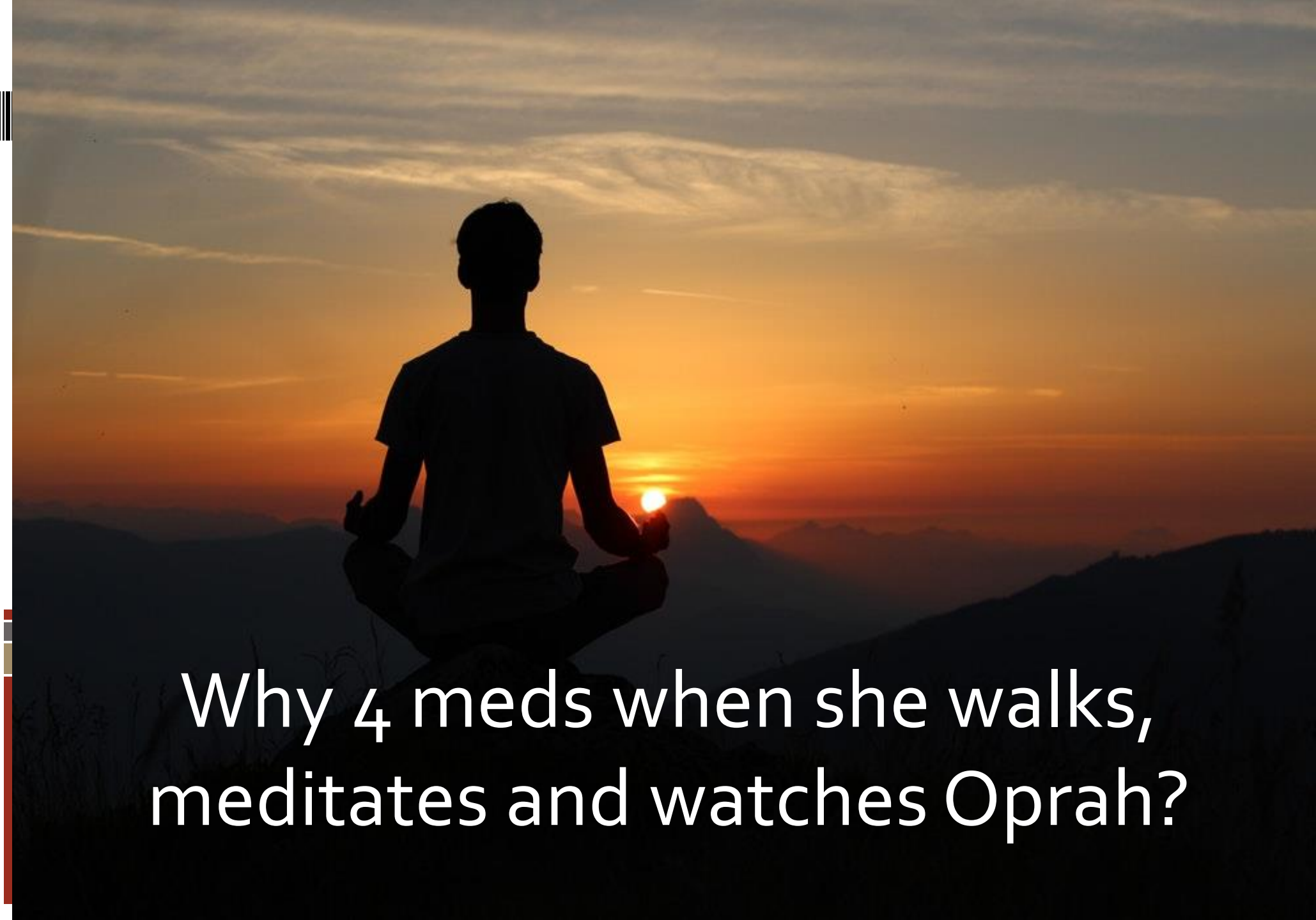
- 77 y/o F hx HTN "lightheaded"
- "It's just my medicine…" (Sudafed for URI)
- "It's my diet…" (Ate PF Changs)
- Labs all normal
- "My blood pressure is better with watching Oprah

Admitted!!!!

- Admitted due to severe HTN (210/110)
- Already on four medications (Bystolic, Tribenzor*)
- Stress test normal
- Add on hydralazine – DC
- On follow up -- "I feel great!"

- At clinic visit….?Compliance?
- Adds on spironolactone

(*Olmesartan/amlodipine/HCTZ)


Why 4 meds when she walks,
meditates and watches Oprah?

Follow up with your clinic… do DASH diet



- Goes to get a subway sandwich – "Can I have these chips"?
- Review of chart –had three years of elevated BP
- Sleep study –
- Echo – no coarctation
- Renal artery US shows 70-80% renal artery narrowing
- CTA – Totally occluded origin of left renal artery

Hypertension

- Get bilateral blood pressures - Coarc
- Start with JNC 8
- When to refer?
- What can you do before they see us? Labs --BNP, home monitoring, some secondary causes
- (Pheo, sleep apnea, aldosteronism, RAS)
- Have them bring previous cardio records, labs, ekg



CASE

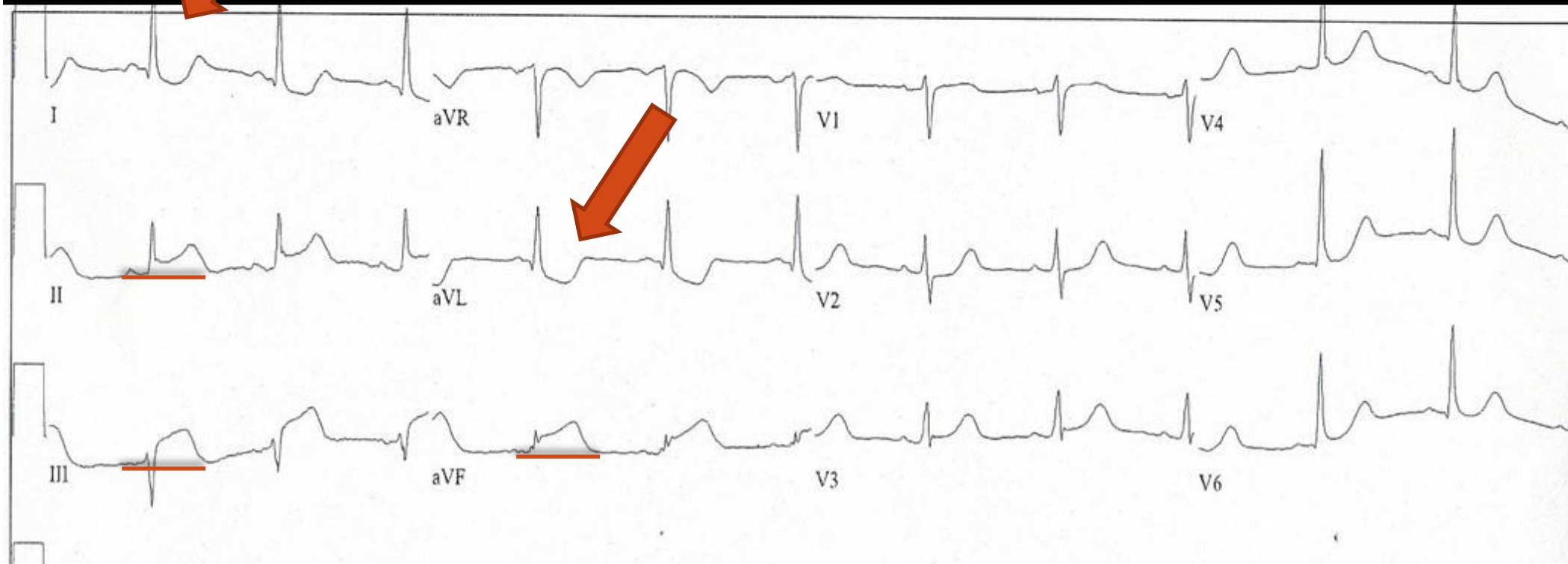
#4



"I was mad that they wouldn't get me a wheelchair"

Anything else this could be?

Vent. rate	71	BPM	*** Age and gender specific ECG analysis ***
PR interval	138	ms	Normal sinus rhythm
QRS duration	92	ms	ST elevation consider inferior injury or acute infarct
QT/QTc	434/471	ms	** ** ACUTE MI / STEMI ** **
P-R-T axes	20 10	87	Consider right ventricular involvement in acute inferior infarct
			Abnormal ECG

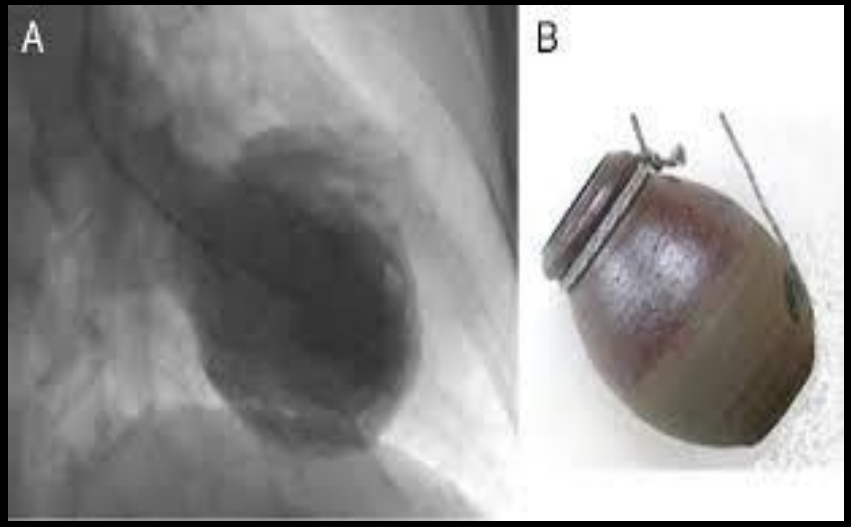


Think Zebras not horses…



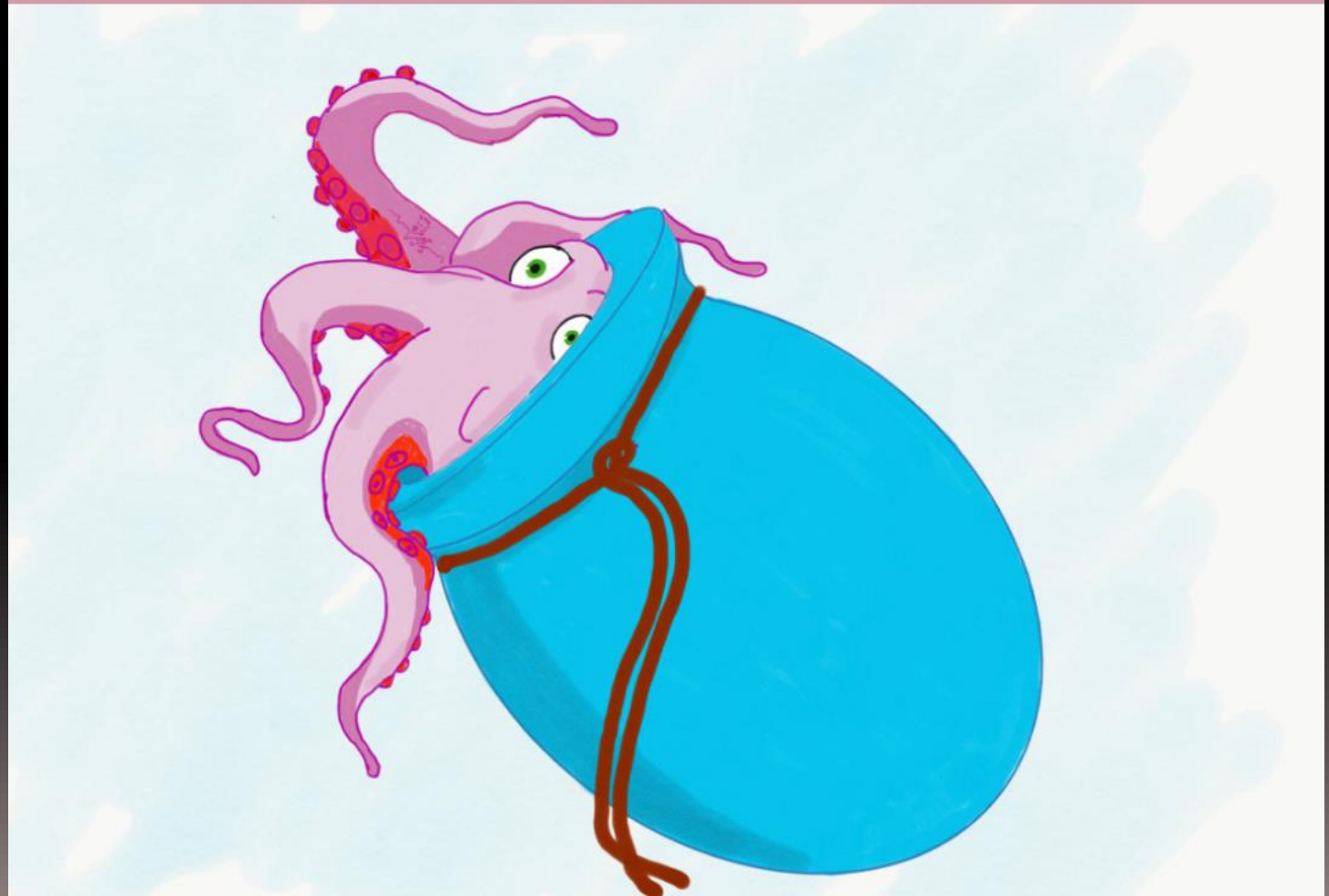
Labs

- TC: 155
- TRI: 103
- HDL: 52
- LDL: 82



DX: stress kills

Takatsubos Cardiomyopathy




FLY THE FRIENDLY SKIES
UNITED
UNLESS WE OVERBOOK
THE PASSENGER LIST.
imgflip.com



CASE

#5


"An old man
Passed me on
While I was
Running."
26

37 y/o F with palpitations

- Avid runner
- Ran 8 out of her normal 9 miles
- Fatigued
- “An old man passed me”
- “My heart was beating “really Hard” x 90 minutes
- “I ubered home”

Differentials:

- PE
- Anemia
- ACS
- LVH
- Takatsubos
- PNA
- AAA
- Thyroid storm
- Arrythmia
- She is just over training……

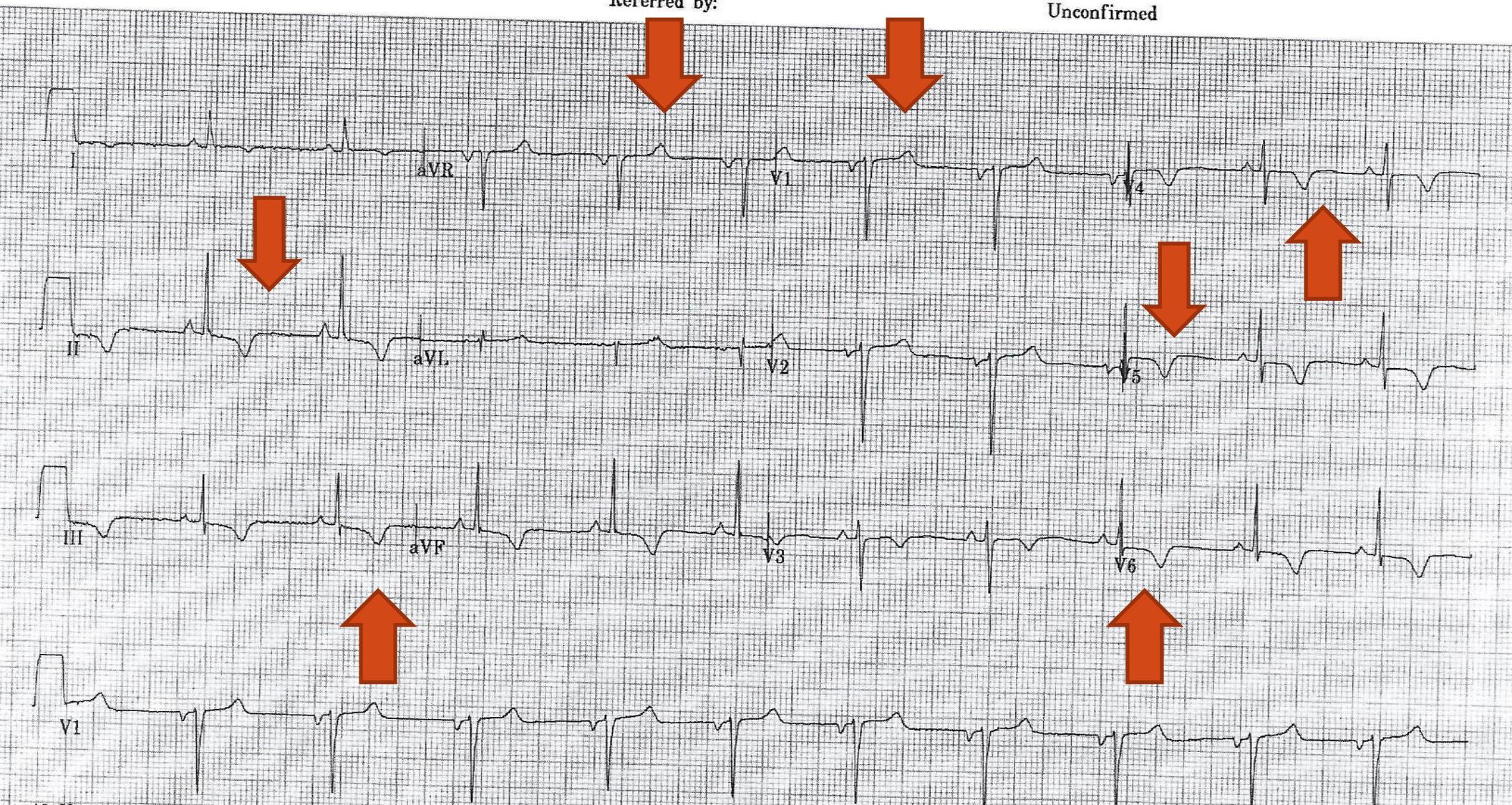
Vent. rate	64 bpm
PR interval	130 ms
QRS duration	70 ms
QT/QTc	408/420 ms
P-R-T axes	57 62 269

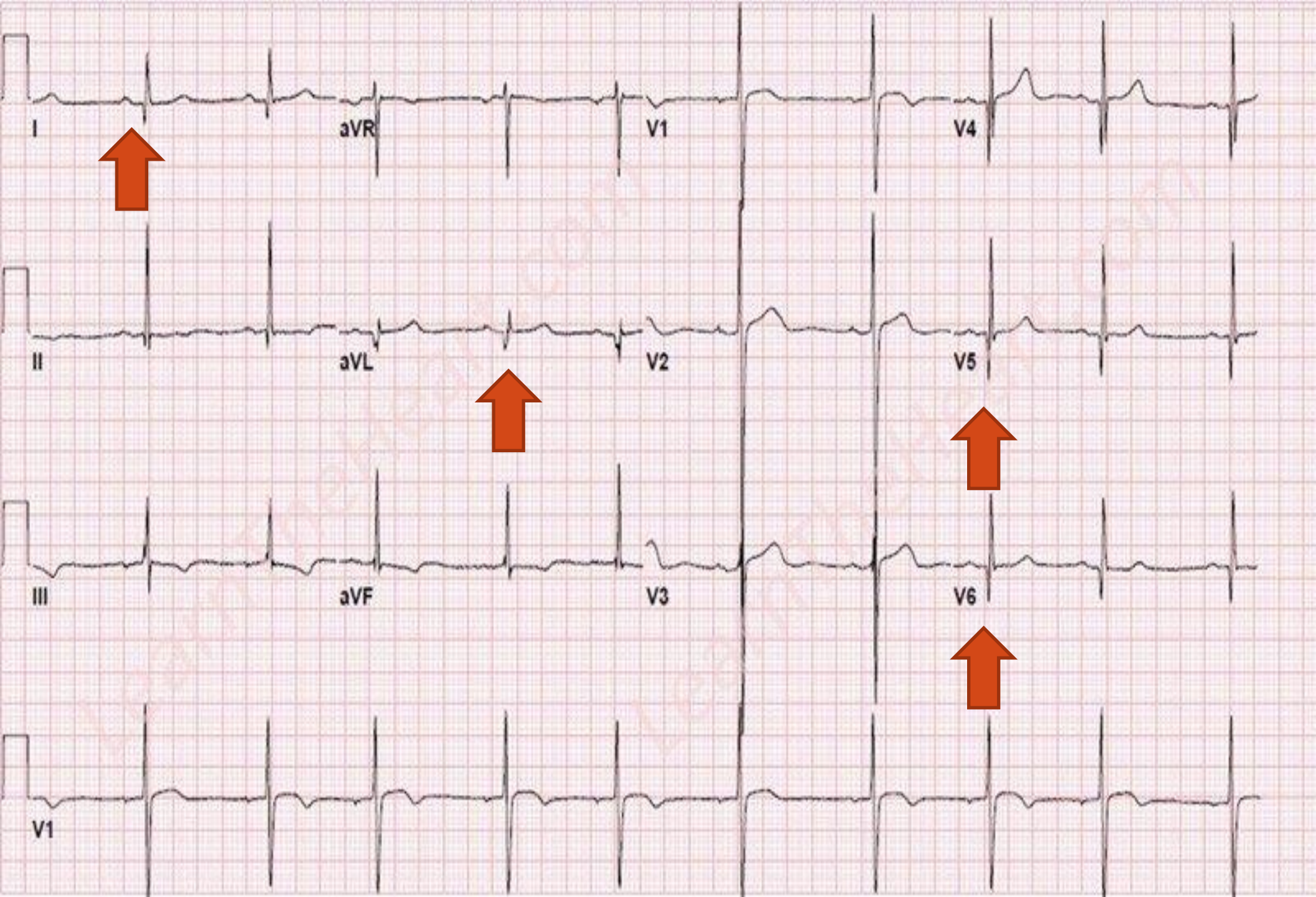
Normal sinus rhythm
Biatrial enlargement
T wave abnormality, consider inferior ischemia
T wave abnormality, consider anterolateral ischemia
Abnormal ECG

Technician:
Test ind:

Referred by:

Unconfirmed




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

ER Workup

- Magnesium: normal
- Trop: negative
- CBC: No anemia
- CMP: Normal
- TSH: 2.0
- UTOX: Negative
- CXR
- UA
- HCG
- D-dimer -

Max. Systolic BP : 186 mmHg

Max Diastolic BP : 78 mmHg

Max Heart Rate : 179 BPM

Max Predicted Heart Rate : 183 BPM

Reason For Termination : Target Heart Rate Achieved

Reason for Test : Palpitations, Abnormal EKG

Target HR Formula : (220 - Age)*100%

Arrhythmias : ventricular premature beats

Arrhythmias : ventricular premature beats - pairs

Resting ECG : T wave inversion

ST Changes : none

Recovery ECG Response (OLD) :

Chest Pain : none

HR Response To Exercise : appropriate

BP Response To Exercise : normal resting BP - appropriate response

Functional Capacity : above average (>20%)

Excellent exercise tolerance.

Normal hemodynamic response to exercise.

Negative maximal stress ECG, with no chest pain or ischemic ECG changes; PVC's

Cardiology follow up

- Stress test normal, calcium score normal
- Holter catches VT
- BP too low for BB
- Soo…Gets VT ablation

- Echo shows Yamaguchi AS WELL



CASE

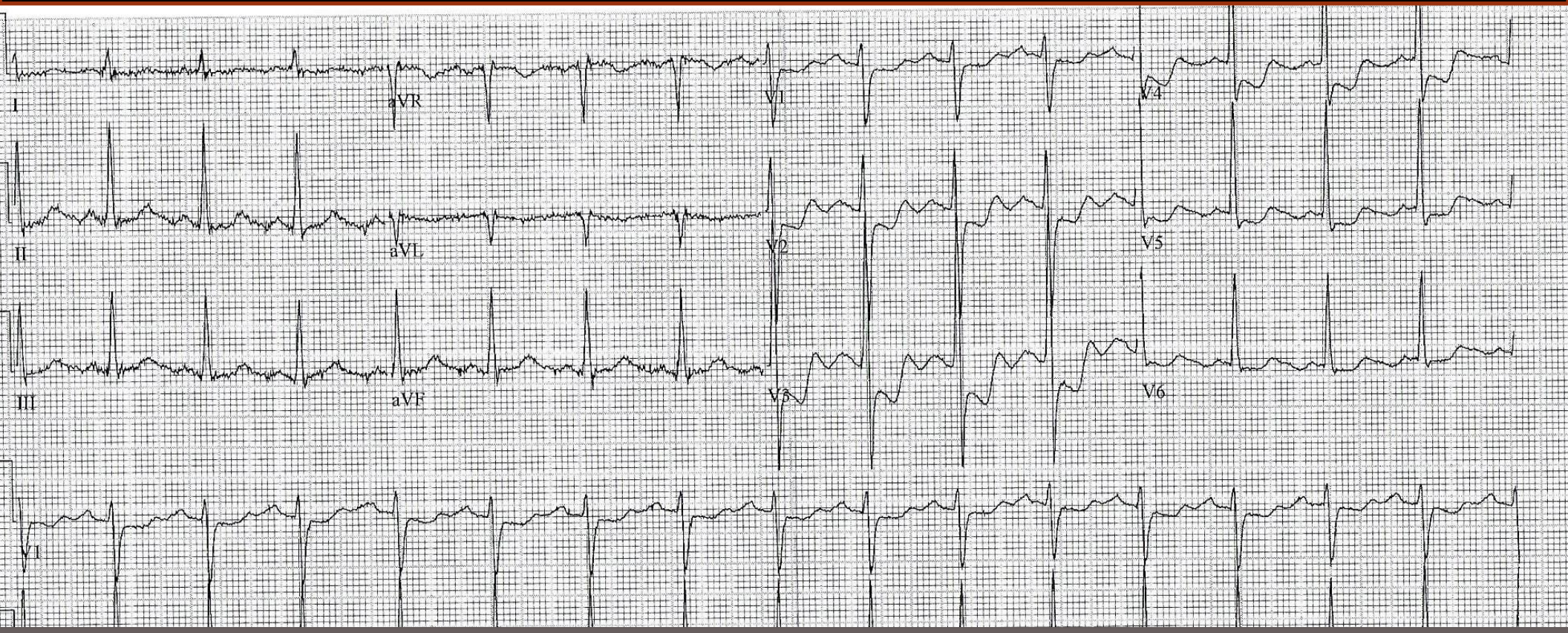
#6


"I'm weak"
Exam Room
26

[redacted]

Vent. rate	96	BPM	SINUS RHYTHM WITH 1ST DEGREE A-V BLOCK
PR interval	216	ms	MARKED ST ABNORMALITY, POSSIBLE ANTERSEPTAL SUBENDOCARDIAL INJURY
QRS duration	96	ms	ABNORMAL ECG
QT/QTc	376/475	ms	NO PREVIOUS ECGS AVAILABLE
P-R-T axes	* 81	88	Confirmed by DACUS MD, JAMES (483) on 7/5/2018 10:34:50 PM

[redacted]





CASE

#7


“I feel weak”

26 year old male "palpitations"

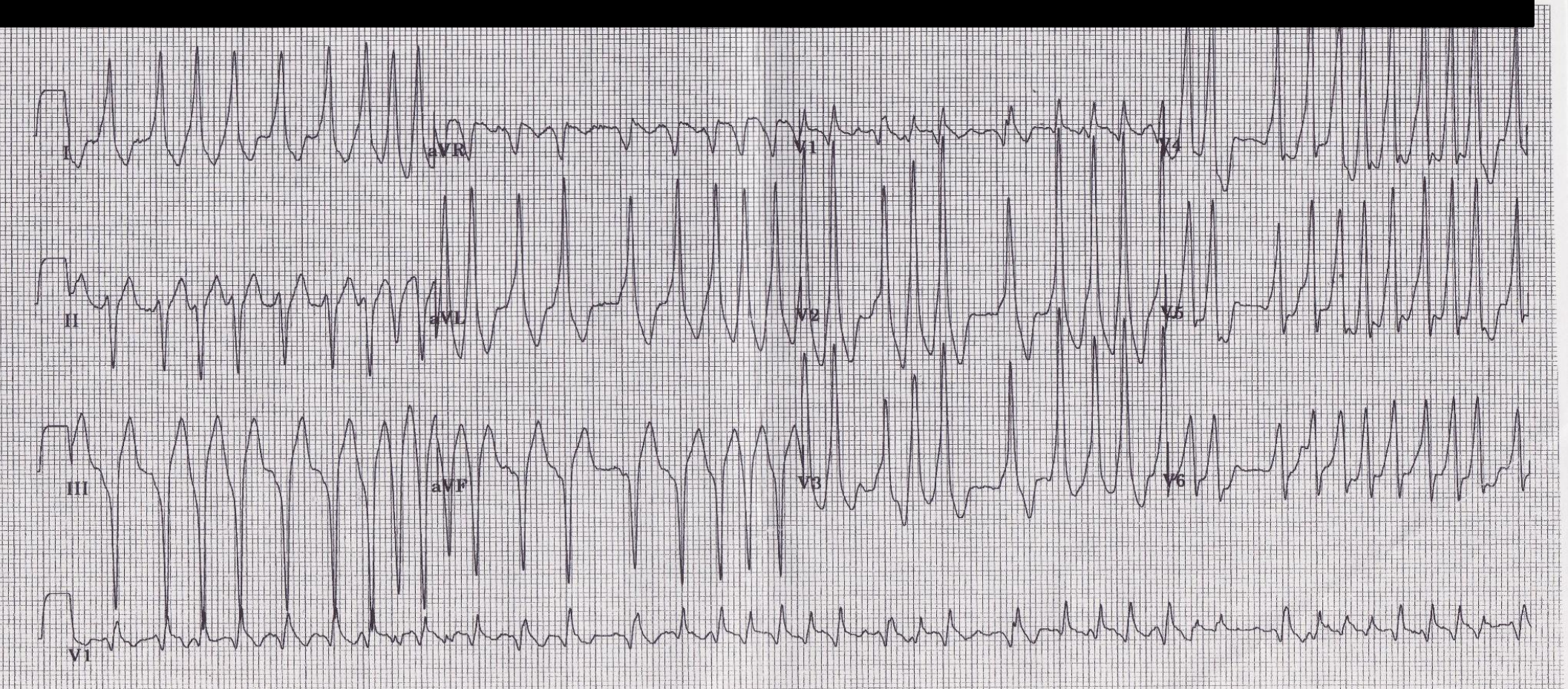
Male Hispanic

Room: ER
Loc: 0

Vent. rate	211	bpm
PR interval	*	ms
QRS duration	132	ms
QT/QTc	252/472	ms
P-R-T axes	* -53	115

Atrial fibrillation with rapid ventricular response with premature aberrantly conducted complexes
Left axis deviation
Left ventricular hypertrophy with QRS widening
Inferior infarct, age undetermined
Marked T wave abnormality, consider anterolateral ischemia

[redacted]



AFIB

YOUNG PEOPLE

"RULE OF 3"

LABS

TSH

UTOX

ETOH

CAUSES

WPW

Valve Disease

Sleep Apnea



CASE

#8

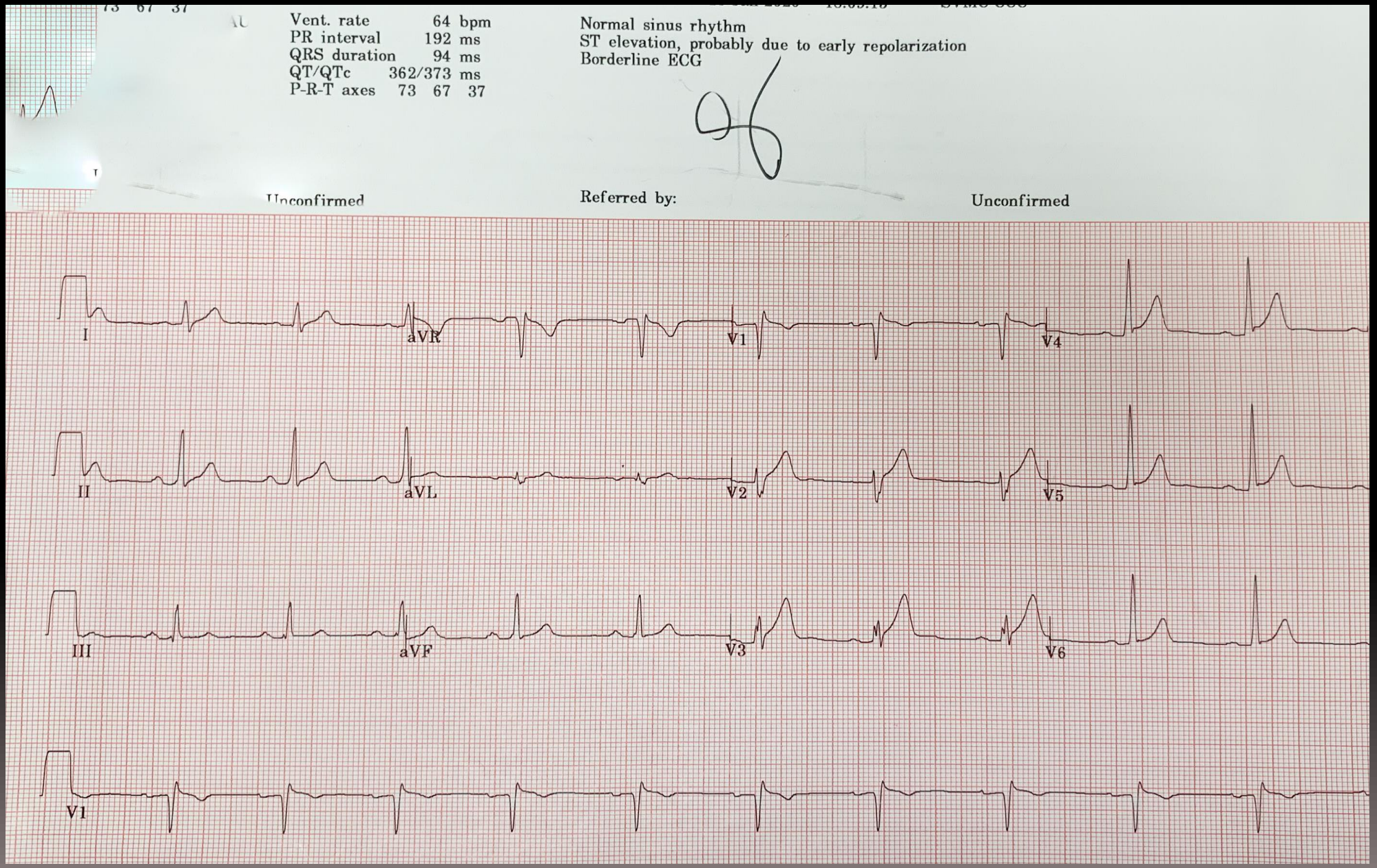
28 y/o M with syncope

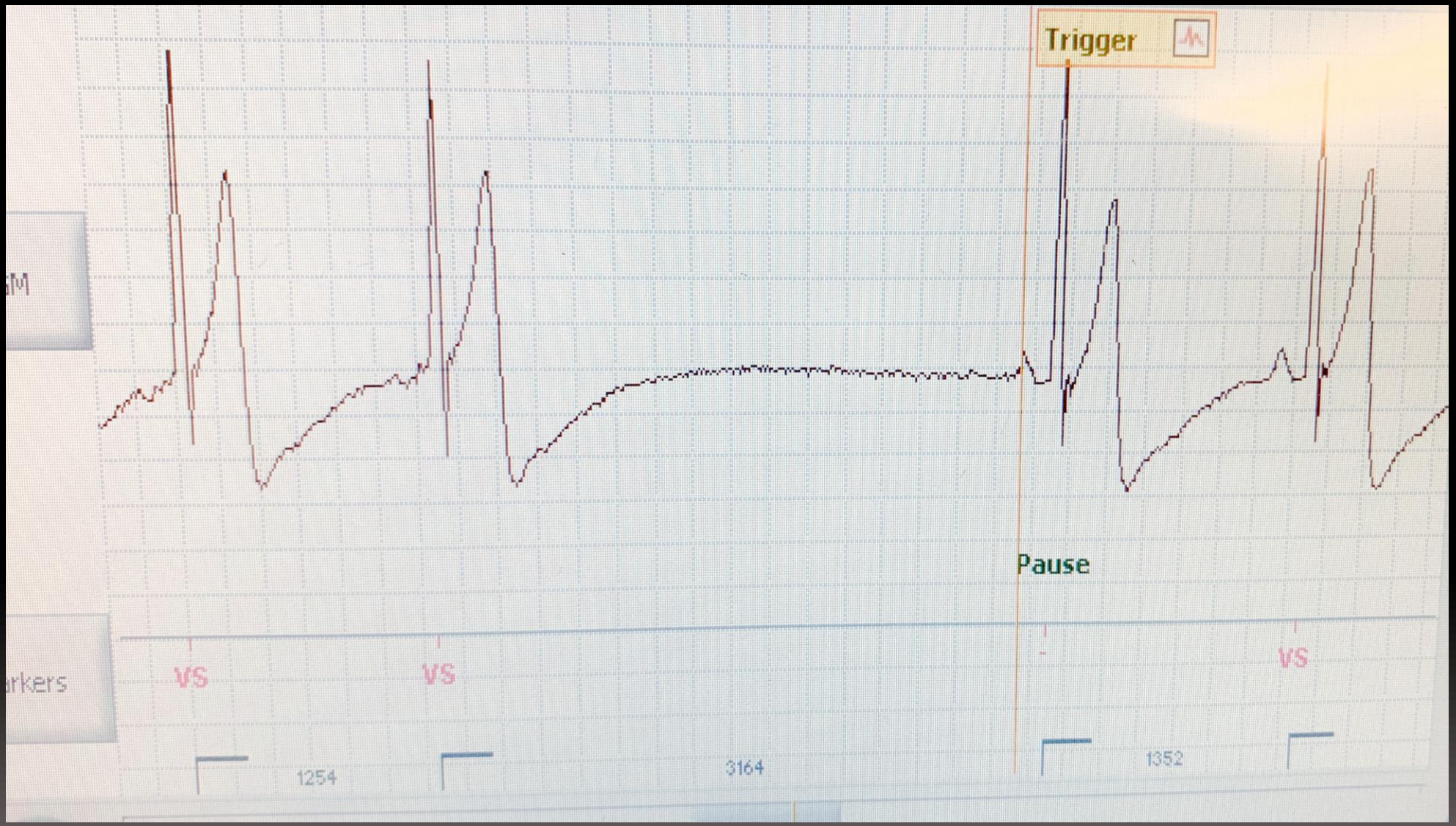
- Did a lot of drugs in the past
- "I almost passed out again"

Loop recorder was placed.

Let's see what happened?

His ekg.


Vent. rate 64 bpm
PR interval 192 ms
QRS duration 94 ms
QT/QTc 362/373 ms
P-R-T axes 73 67 37
Normal sinus rhythm
ST elevation, probably due to early repolarization
Borderline ECG
Unconfirmed
Referred by:
Unconfirmed
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1


Trigger
Pause
VS
VS
VS
1254
3164
1352


"I died?"
A1386
Exam Room
26

51 year old "general weakness"

- Felt unwell "like the water ran out of me"
- Under stress
- HX: HTN, psyche, chronic neck pain
- Drank alcohol, did cocaine

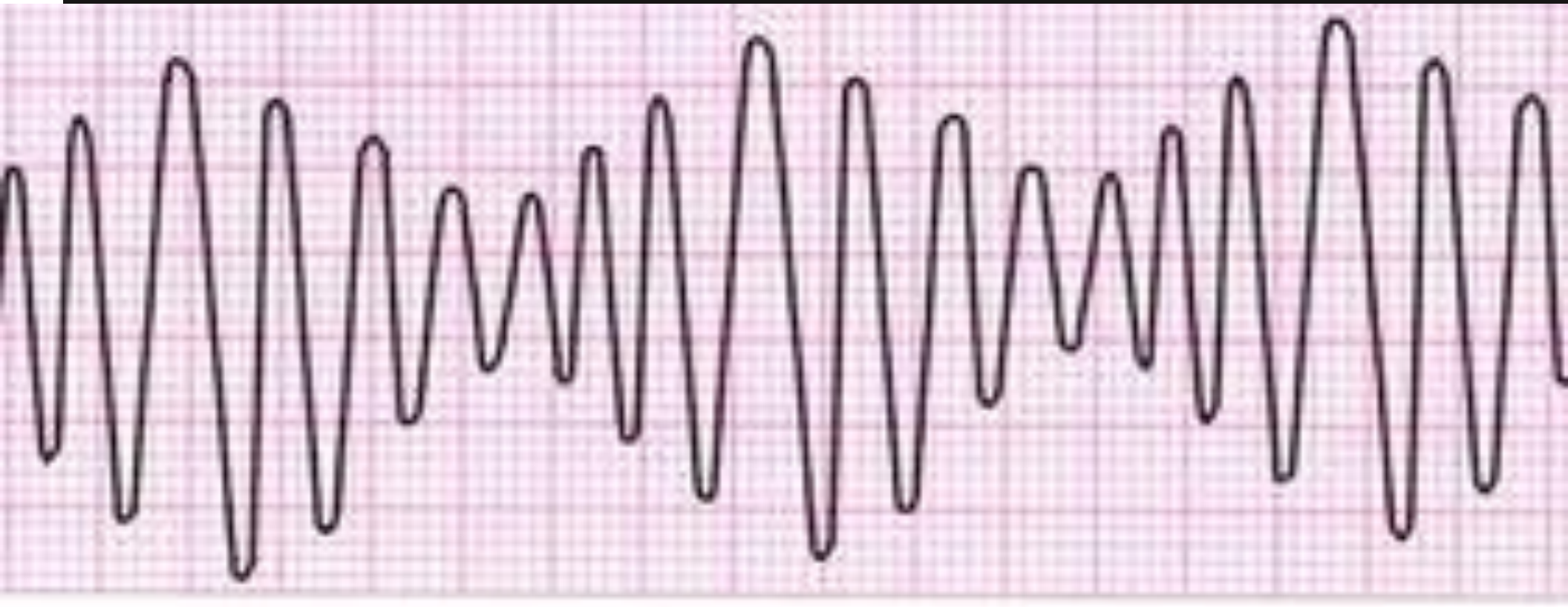
- Called 911…



EMS says…

- "had an episode of urinary incontinence, pt felt weak"
- Dizzy, dyspnea, chest discomfort
- Field EKG: Sinus tachycardia with borderline st elevation in V1, V2 with one PVC
- Then goes into torsades….

- Is shocked at 200 j once, brief CPR



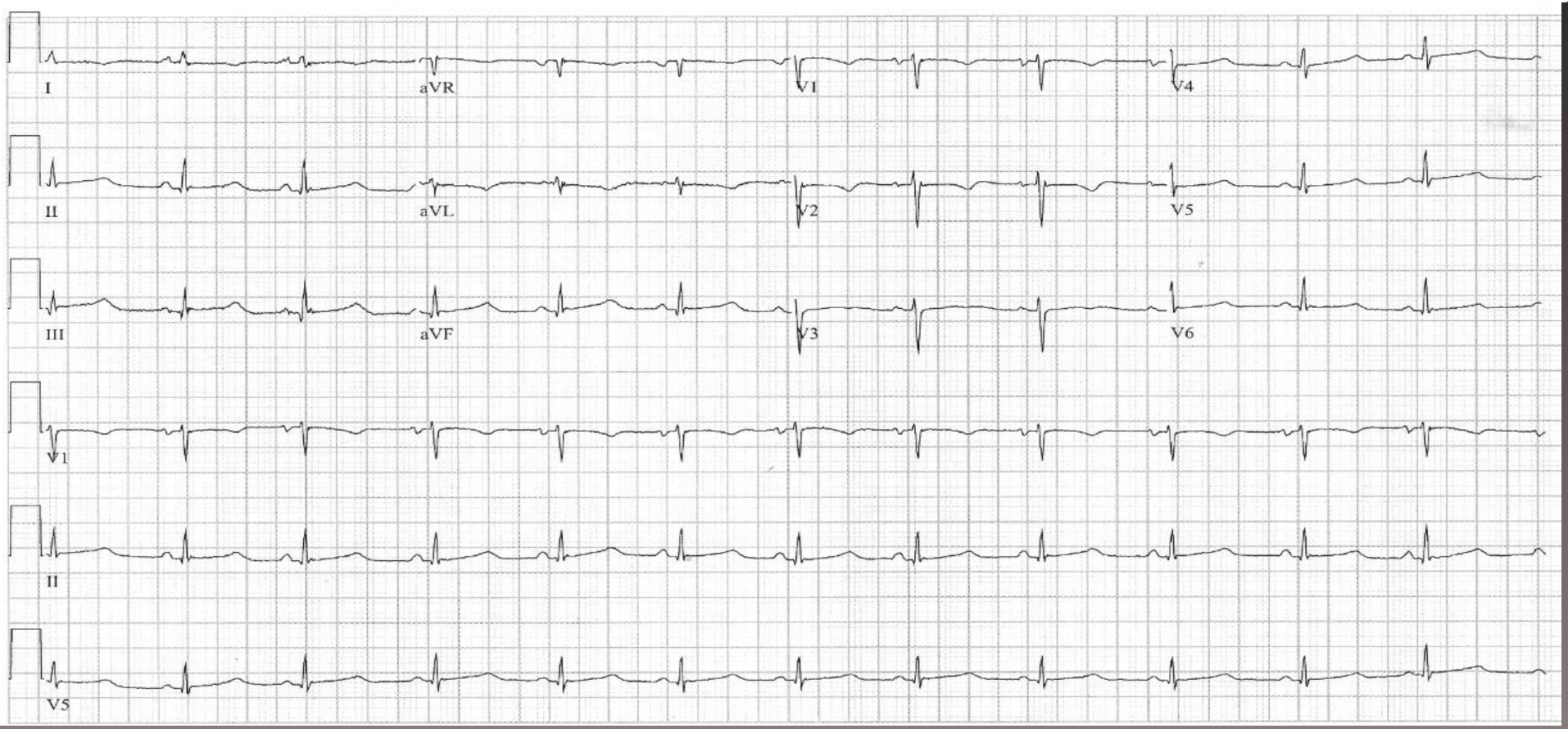
Torsades De Pointes

- Changing polarity of the QRS complex from positive to negative and back to positive again
- Its still VTACH – why do I need to identify it further?



There's no free lunch.

Vent. rate	72	BPM	NORMAL SINUS RHYTHM
PR interval	128	ms	NONSPECIFIC T WAVE ABNORMALIT'
QRS duration	76	ms	PROLONGED QT
QT/QTc	474/519	ms	ABNORMAL ECG
P-R-T axes	51 74	101	WHEN COMPARED WITH ECG OF 16-O
			T WAVE AMPLITUDE HAS DECREASED IN INFERIOR LEADS
			QT HAS SHORTENED



What were her risks?

- K was 2.7
- Qt prolonging meds
- Did cocaine

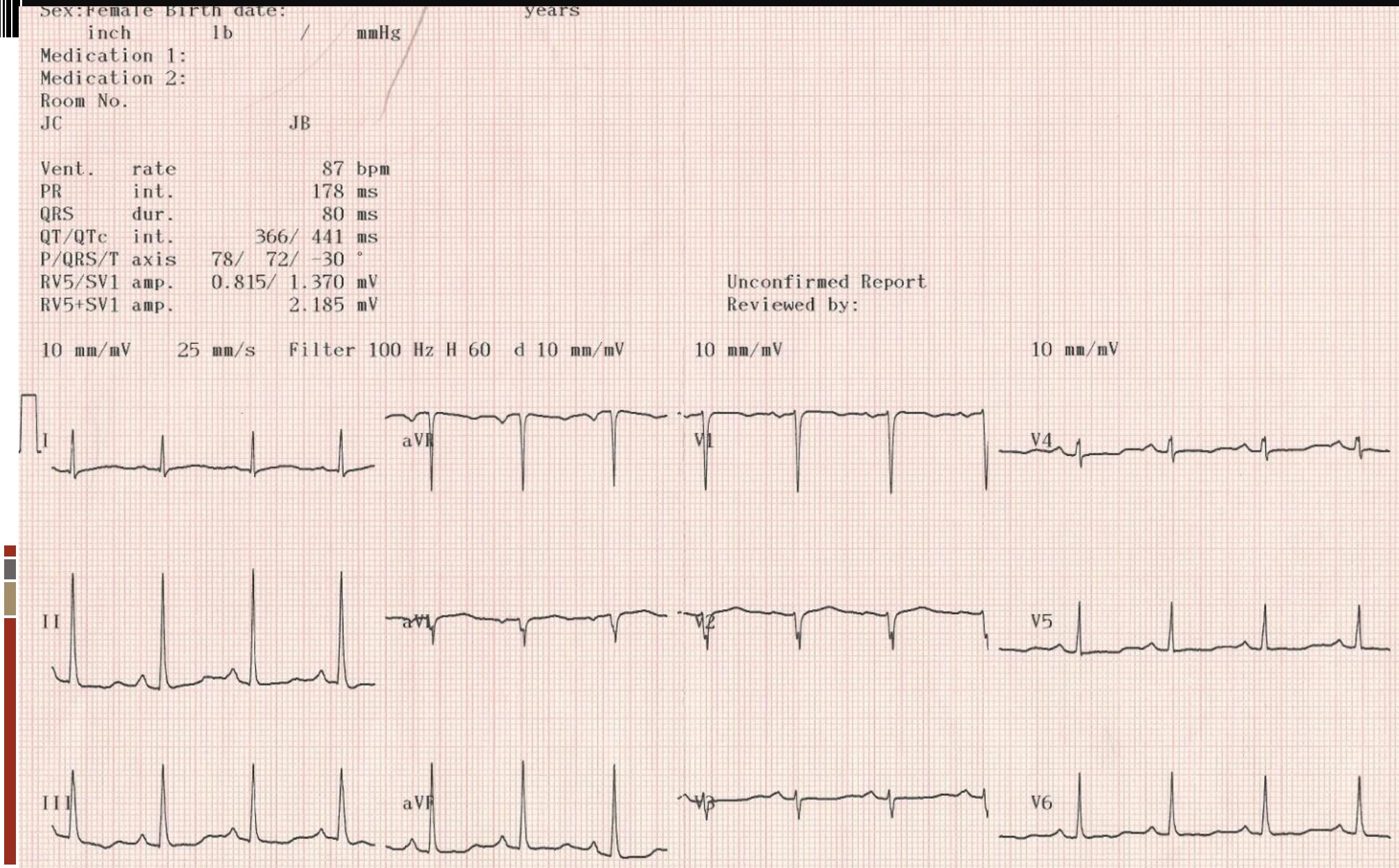
- Hx of prev long qt….
- Female

At clinic visit

- "I think I need something stronger for pain…"
- I didn't take my blood pressure medication as it was too expensive…
- I did take my nieces medication, it starts with an L

- I did take two methadone that day for pain

Clinic EKG


Sex:Female Birth date: years
inch lb / mmHg
Medication 1:
Medication 2:
Room No.
JC JB
Vent. rate 87 bpm
PR int. 178 ms
QRS dur. 80 ms
QT/QTc int. 366/ 441 ms
P/QRS/T axis 78/ 72/ -30 °
RV5/SV1 amp. 0.815/ 1.370 mV
RV5+SV1 amp. 2.185 mV
Unconfirmed Report
Reviewed by:
10 mm/mV 25 mm/s Filter 100 Hz H 60 d 10 mm/mV
10 mm/mV
10 mm/mV
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6

Her med list…

- Prozac (Fluoxetine)
- Methadone
- Trazadone
- Pepcid (Famotidine)
- Rispiridal (Risperidone)

- Xanax (Alprazolam), Neurontin (Gabapentin)

"I died?"


Thank you!

21 y/o m field worker with palpitations

