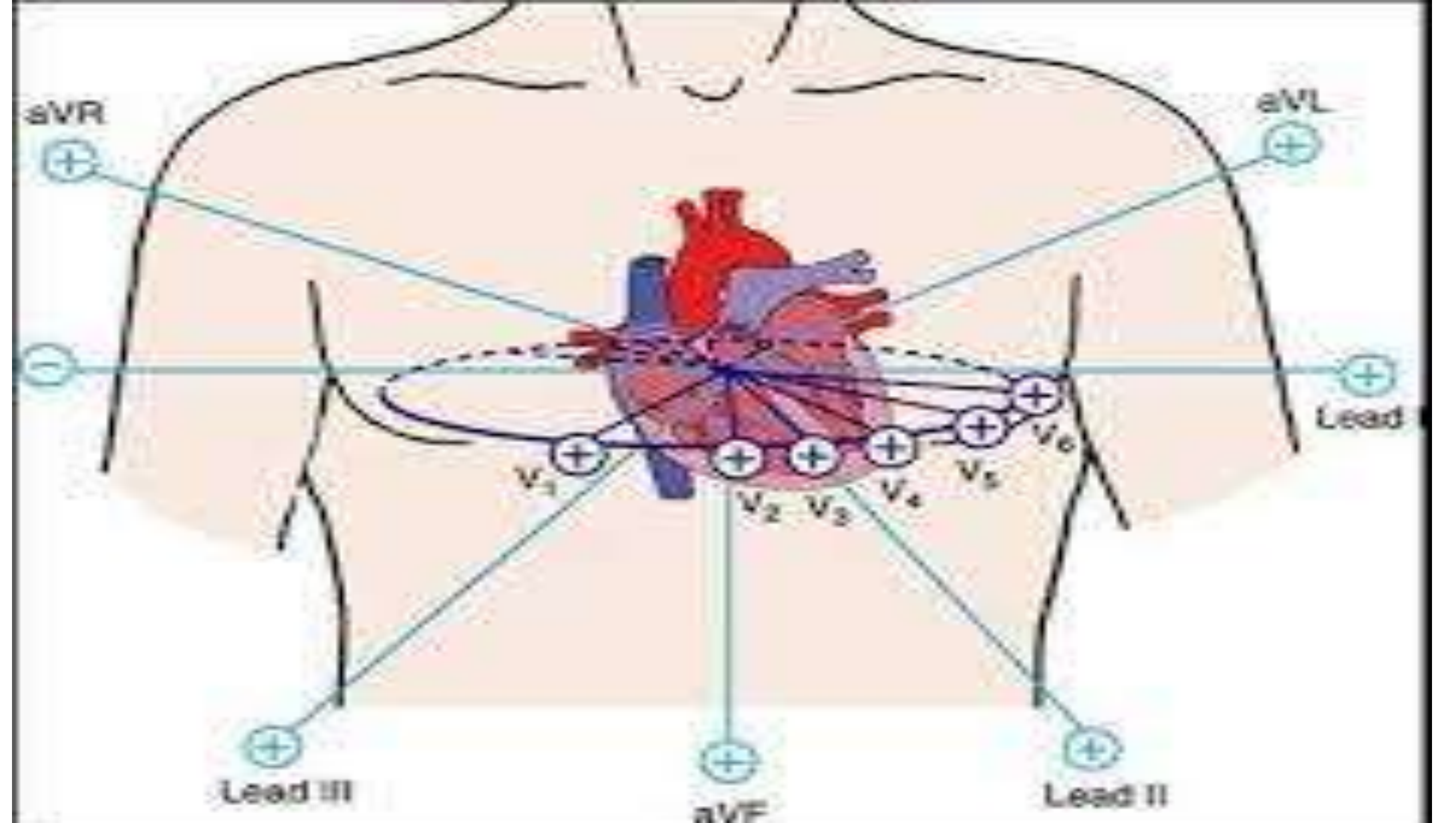
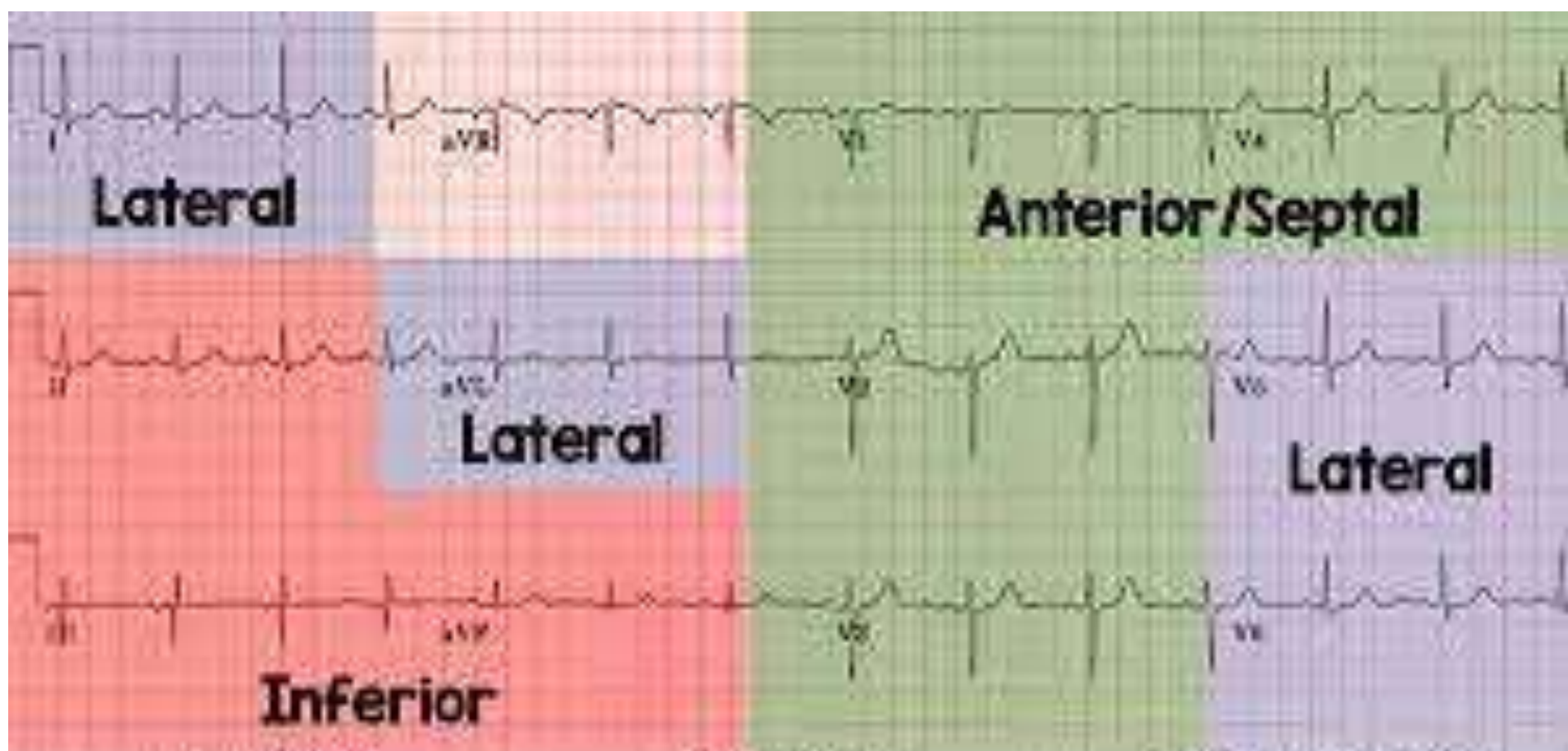


## Isoelectric Line (TP Interval)









Lateral Leads

I, aVL, V5 - V6

LCx or Diagonal of LAD

Inferior Leads

II, III, aVF

RCA and/or LCx

Anterior/Septal Leads

V1 - V4

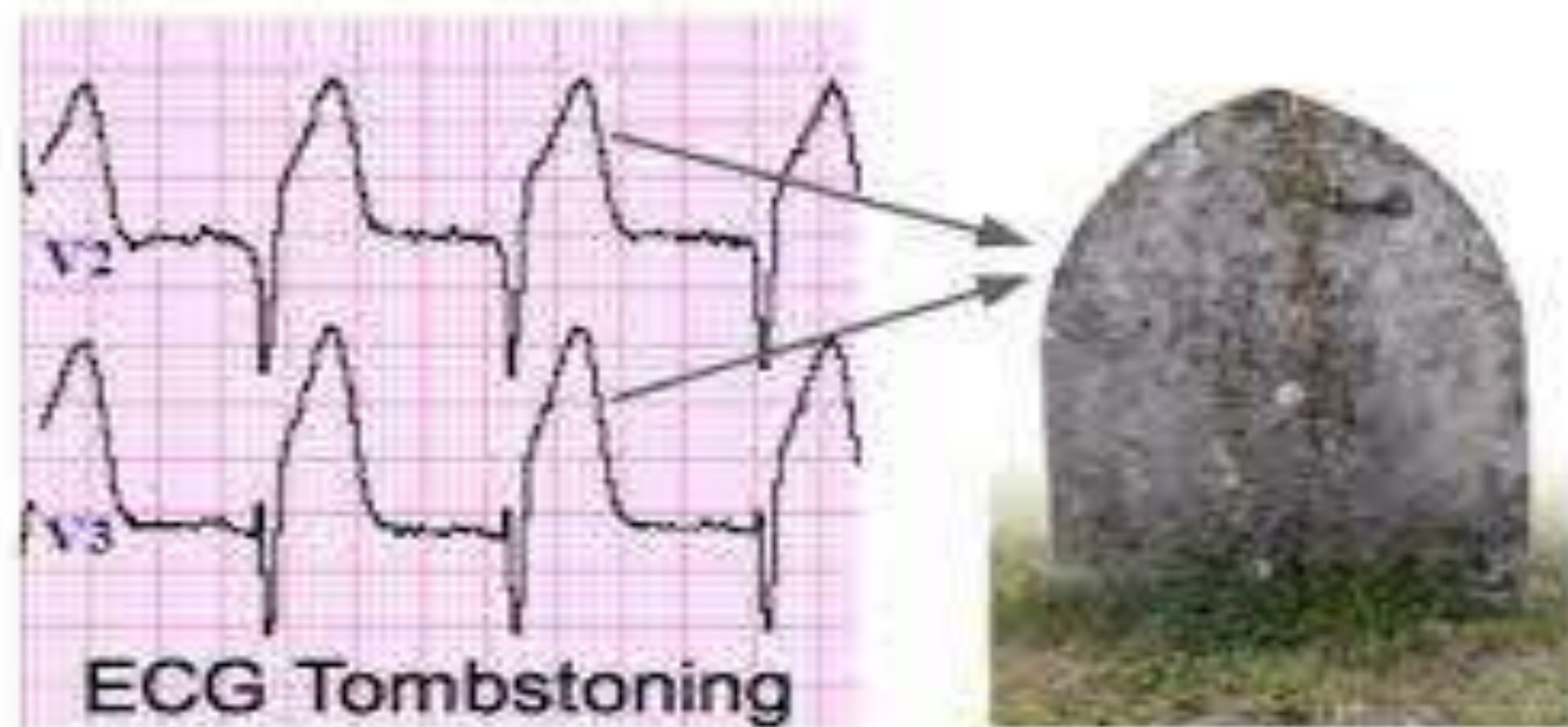
LAD

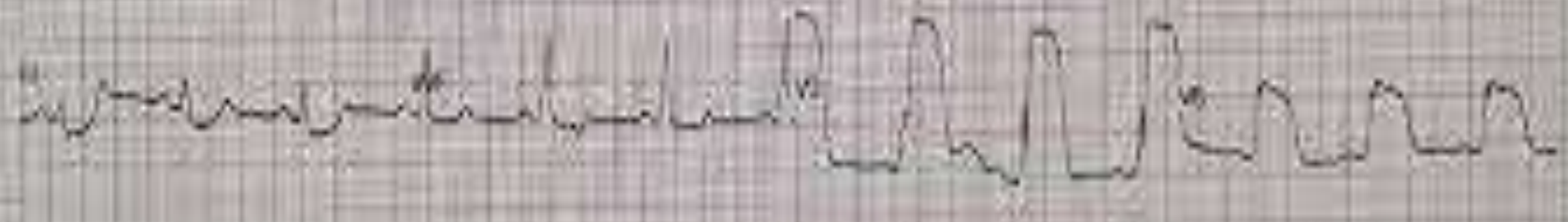
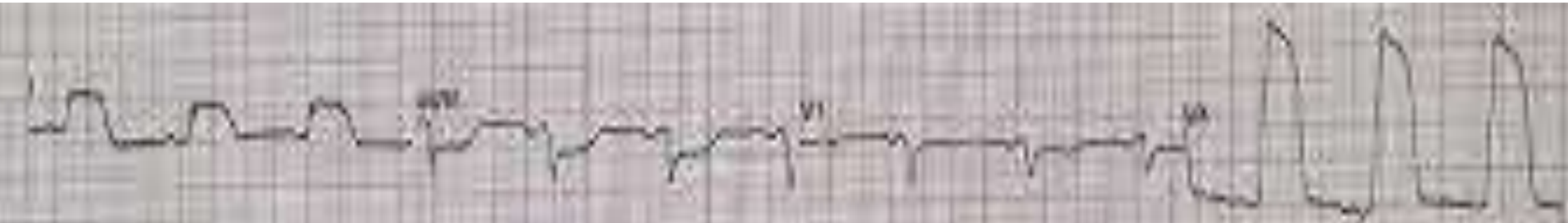
# ST elevation



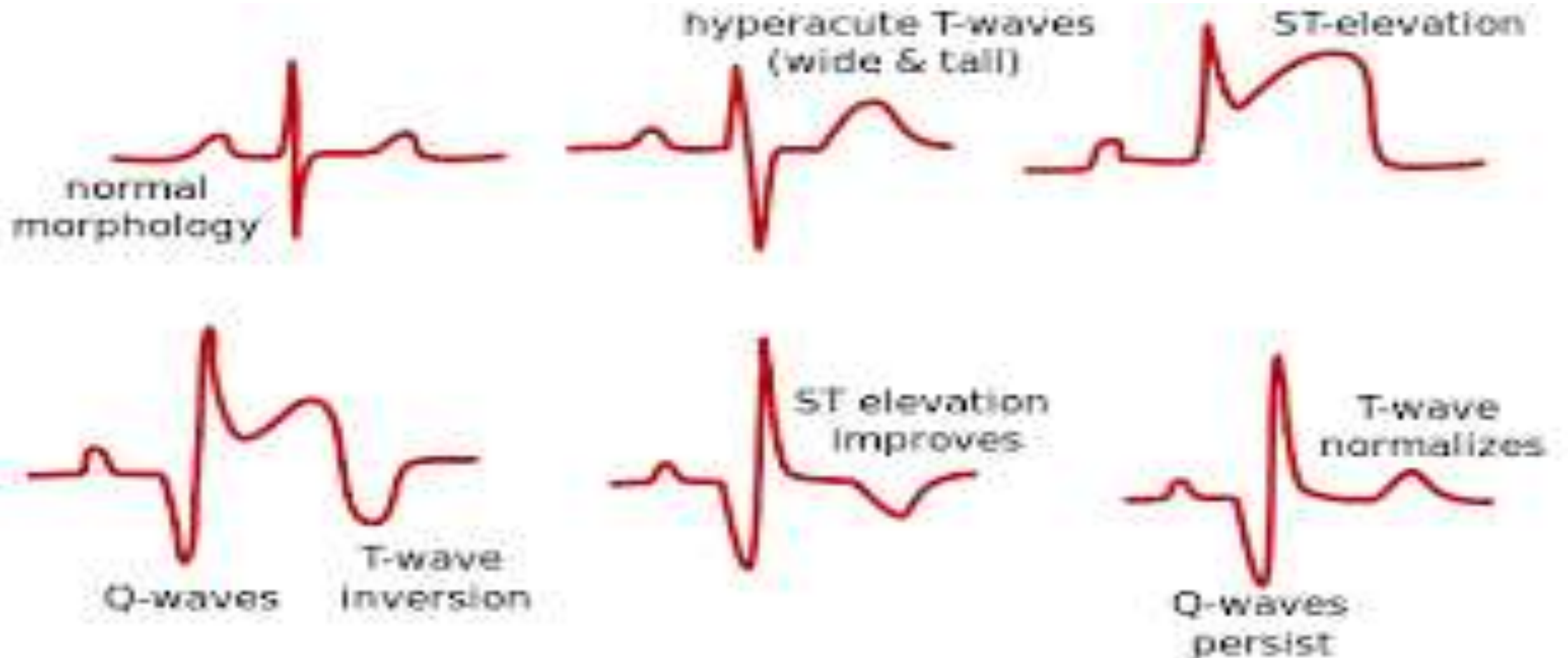


## Anterior MI Pattern – Tombstoning

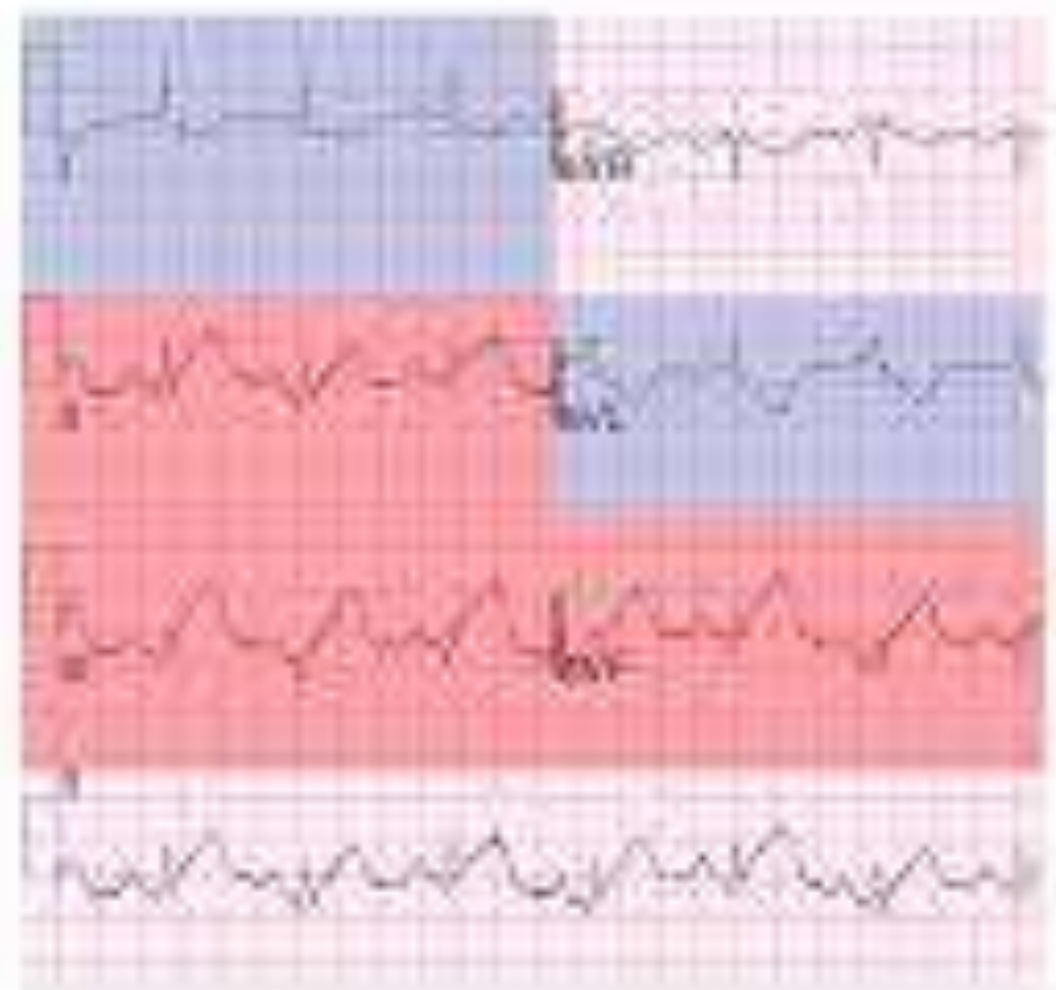




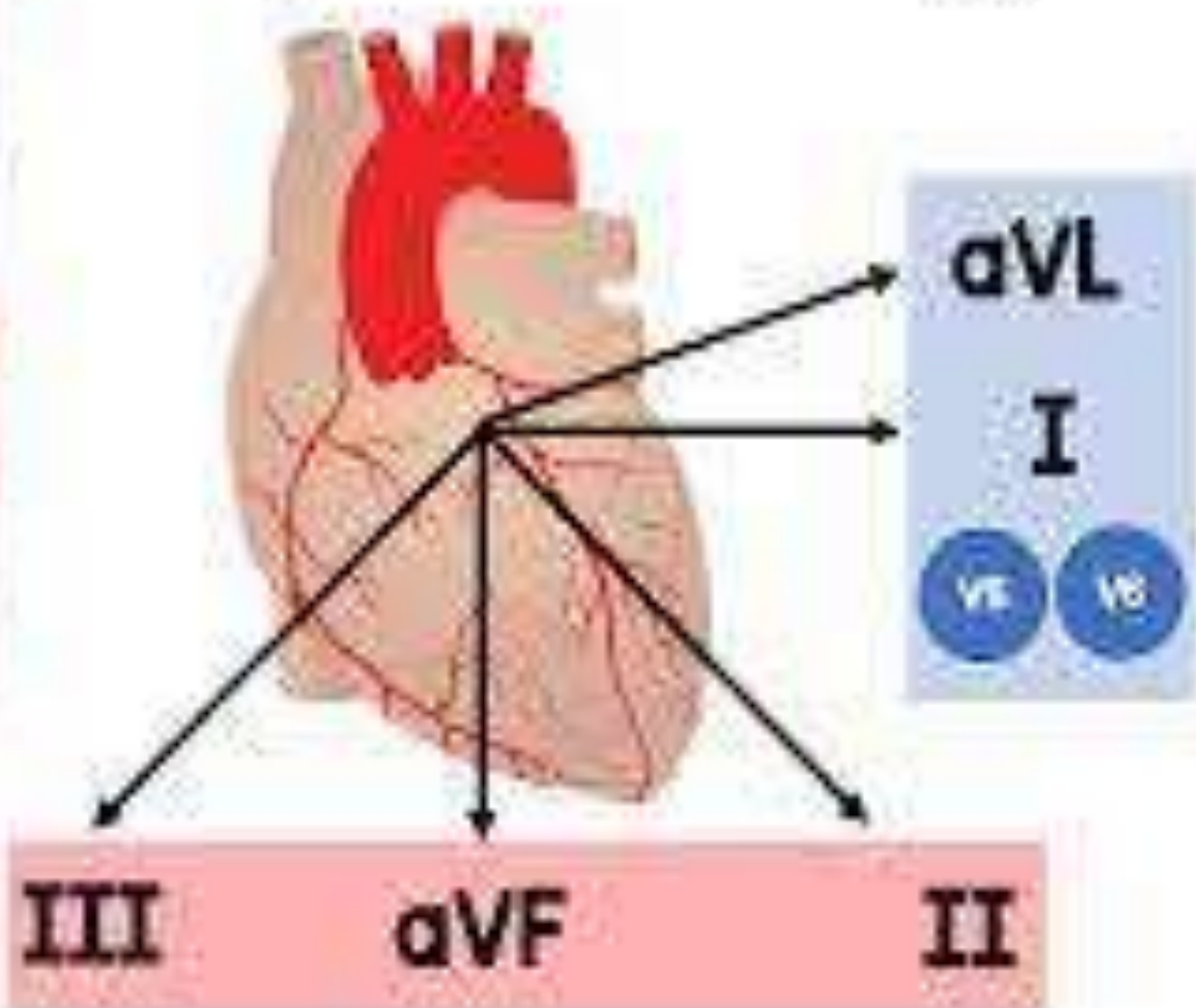
# تغییرات MI







## Reciprocal Changes

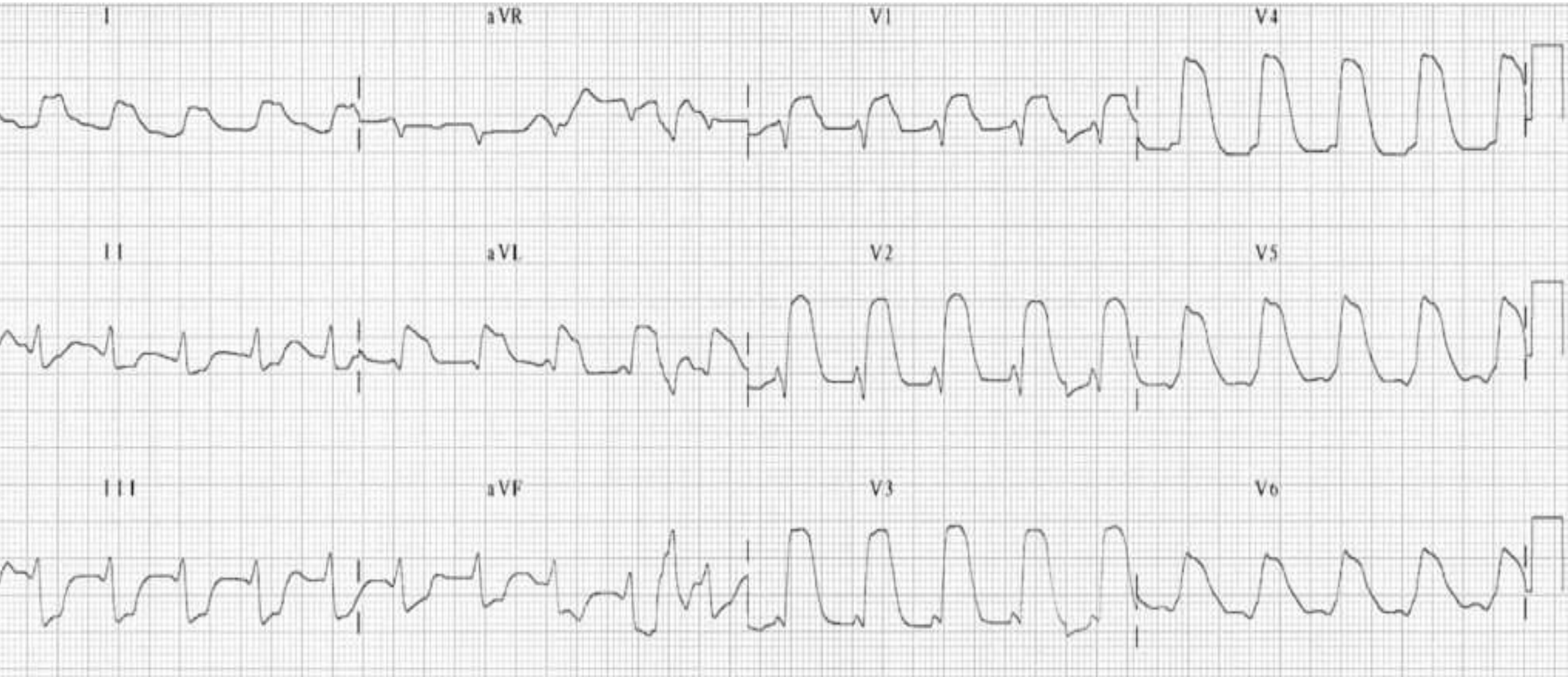




## De Winter ST/T-Waves



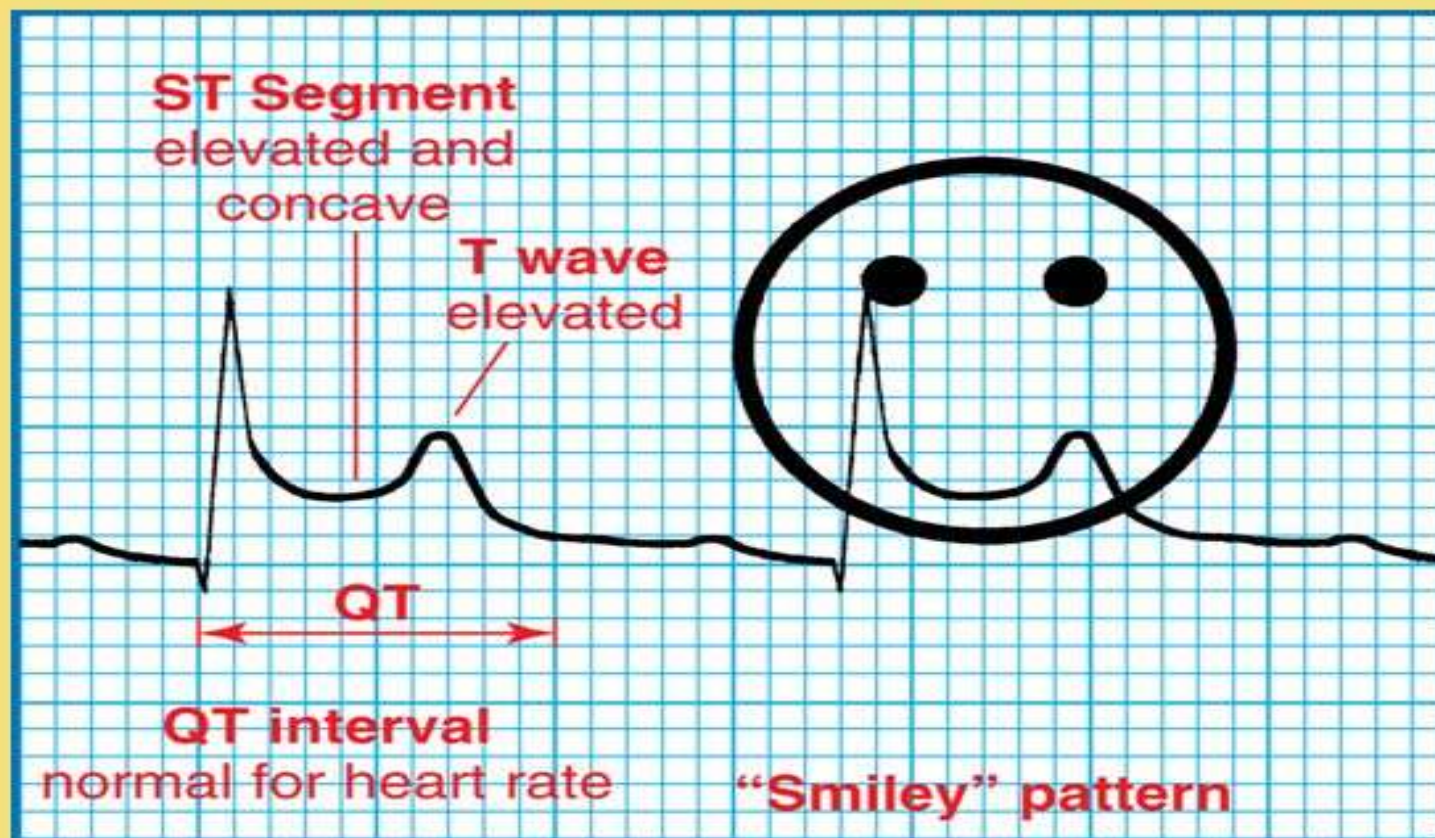
# EXTENSIVE MI=STE IN V1-V6. I.AVL





**READY**

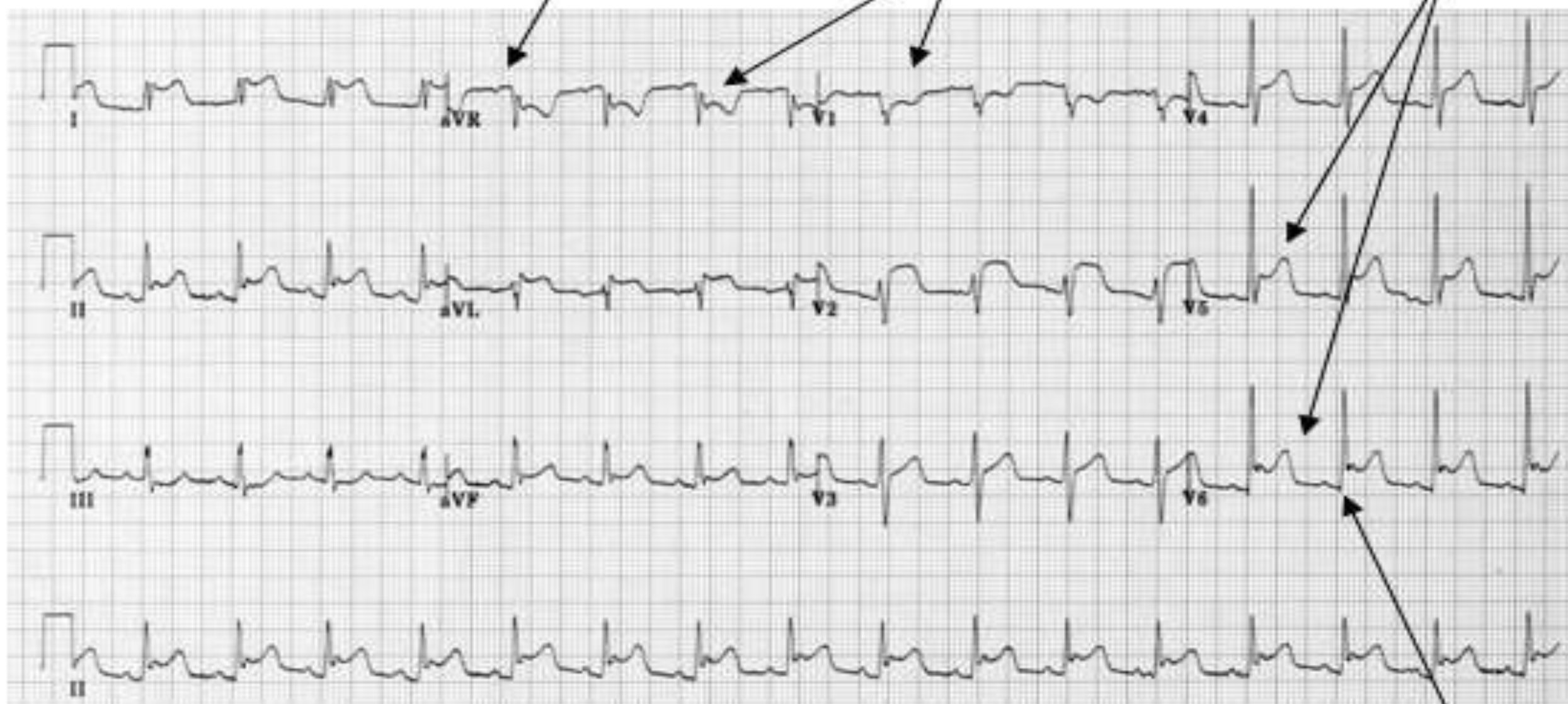
- Page 12-Lead ECG for Acute and Critical Care Providers



PR Elevation

ST Depression

ST elevation



PR Depression



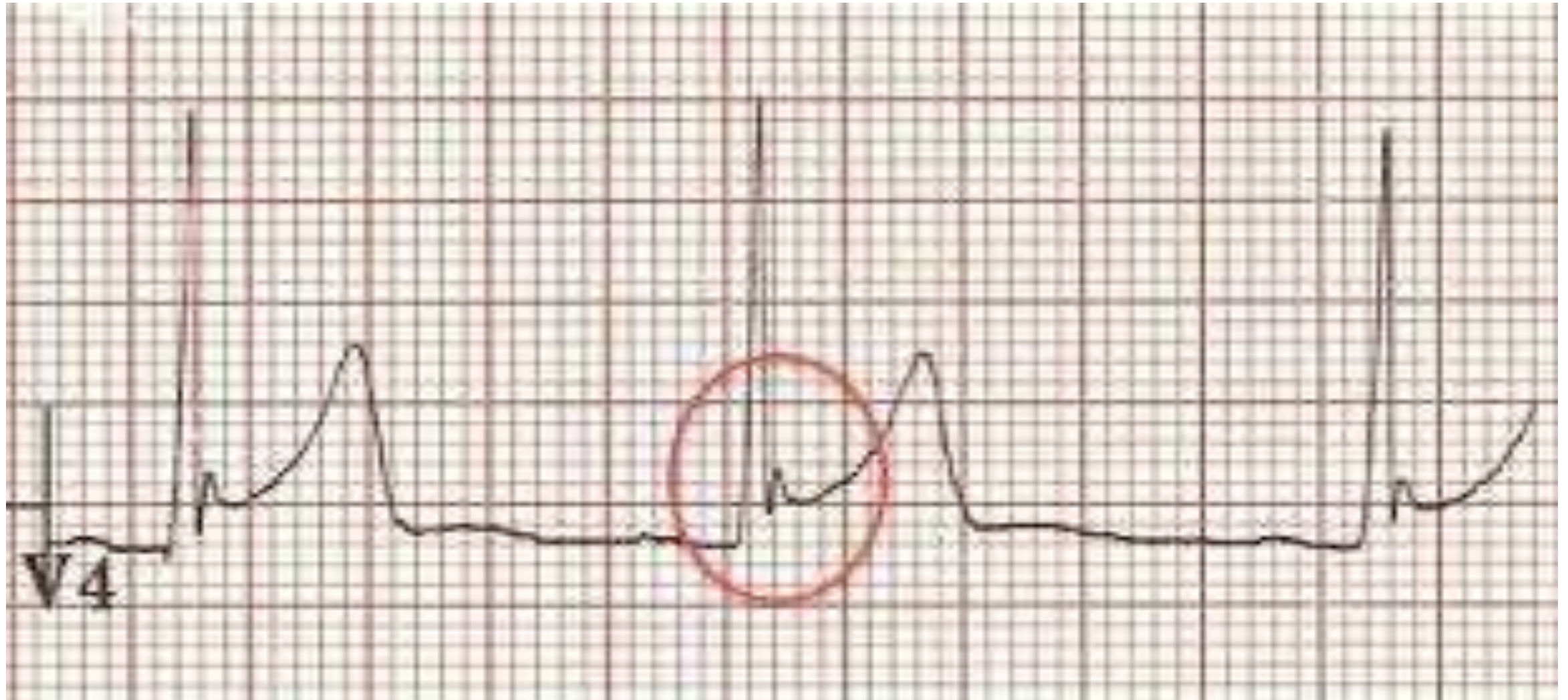
V5

ST

PR

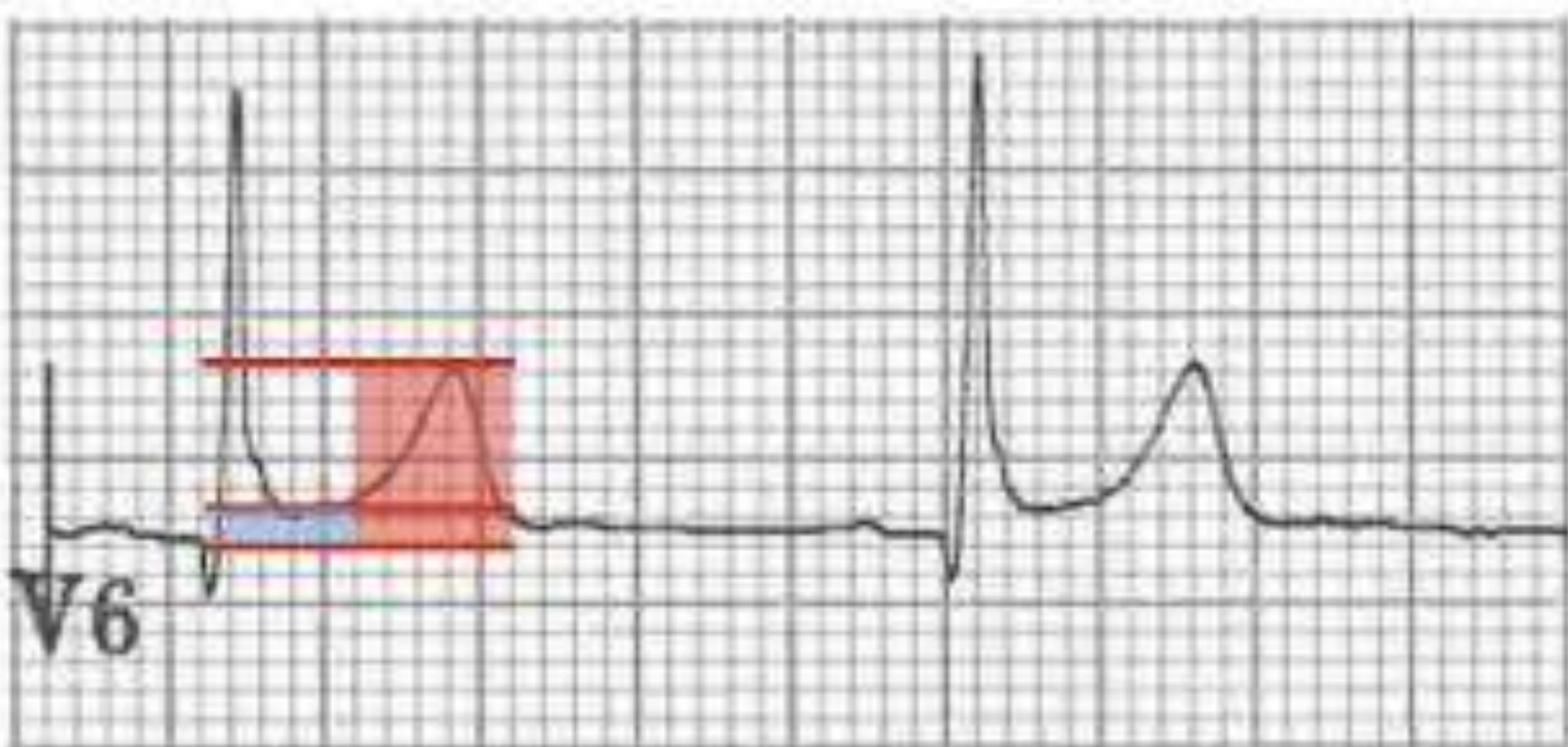


# EARLY REPOLARIZATION



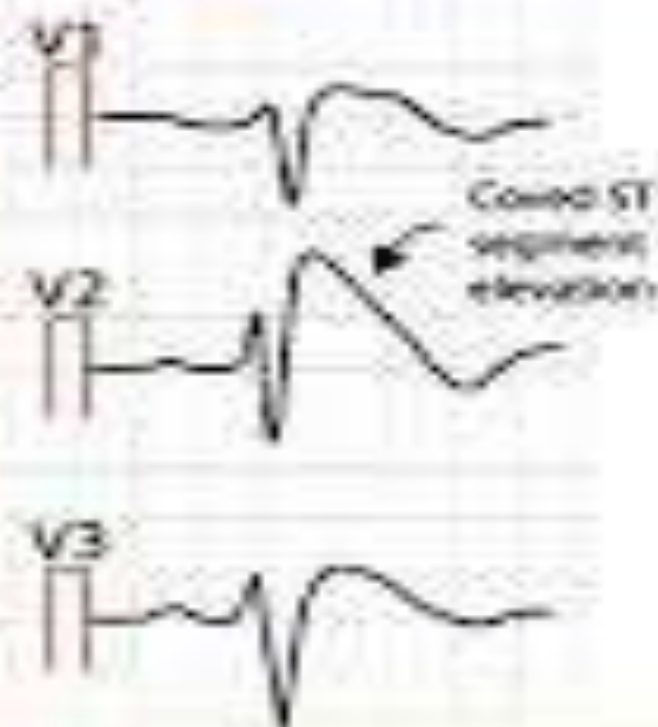


## EARLY REPOLARIZATION نسبت ST/T کمتر از 1/4

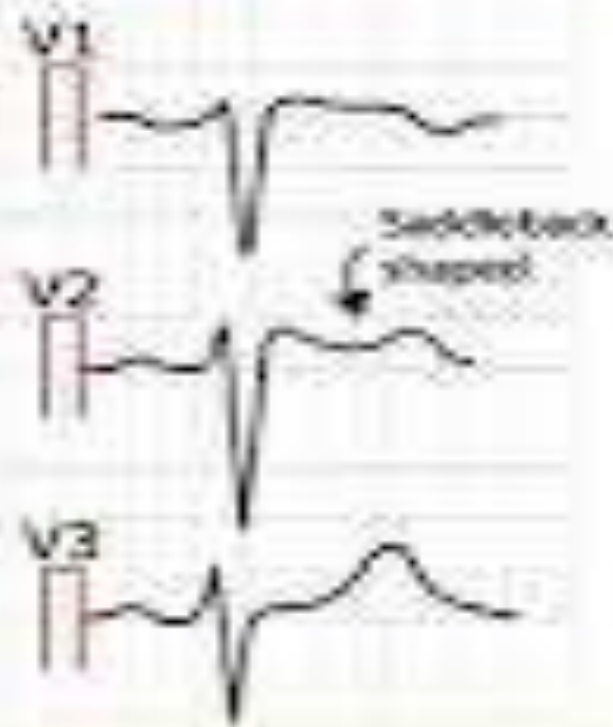


# Brugada Syndrome

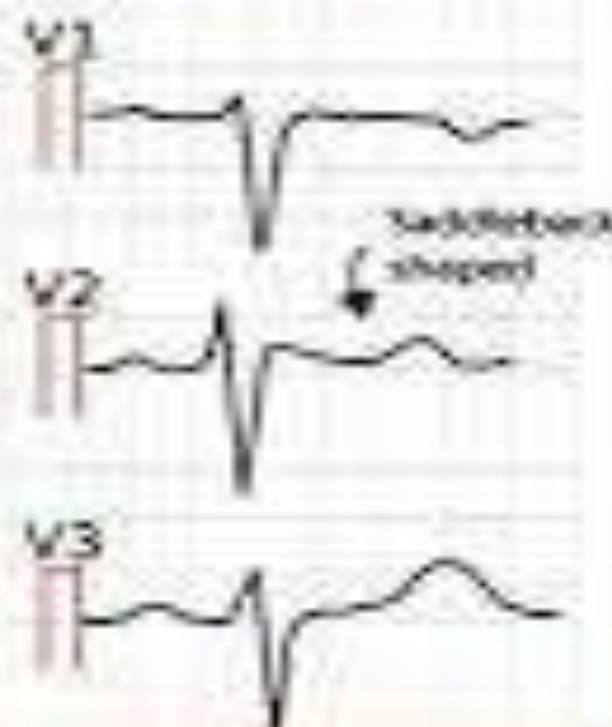
Type 1.



Type 2.



Type 3.

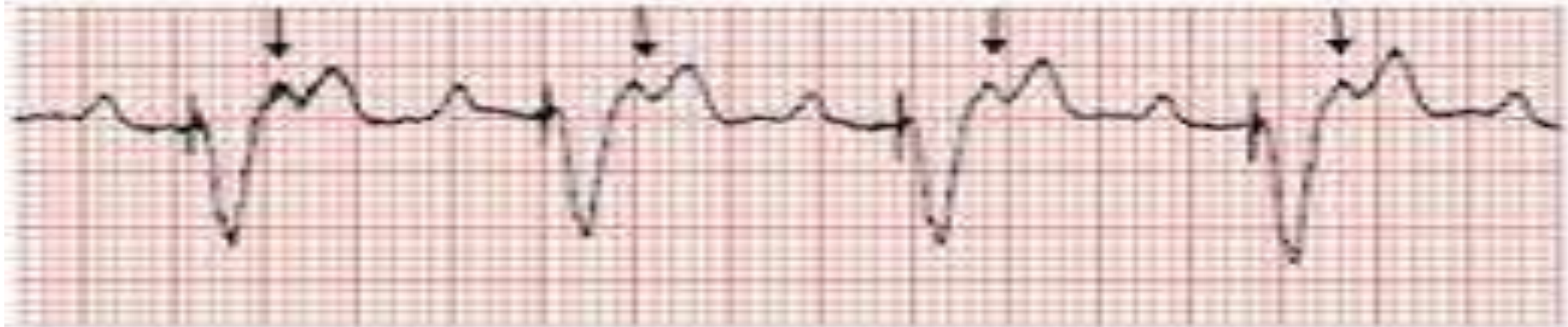
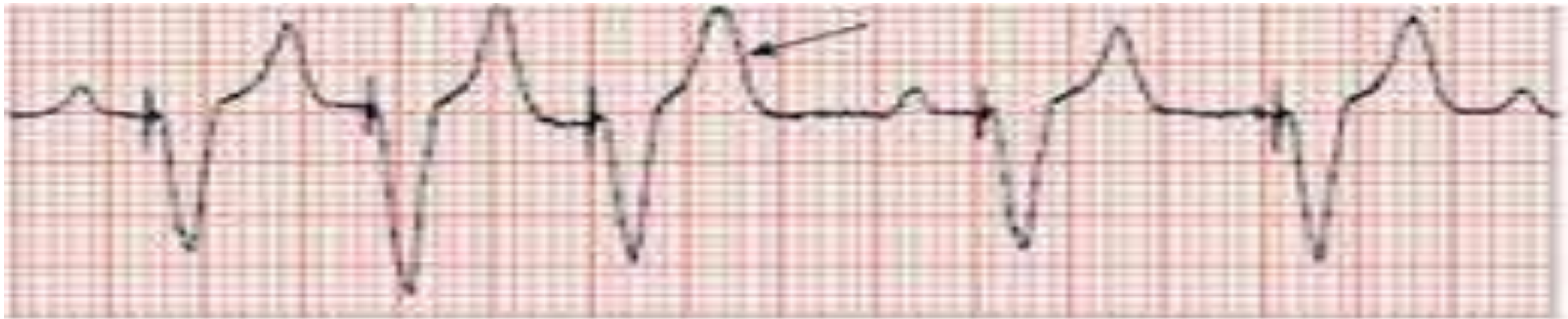




# سندروم بروگادا



## پیس میکر





# پیس میکر

Atrial and ventricular pacing

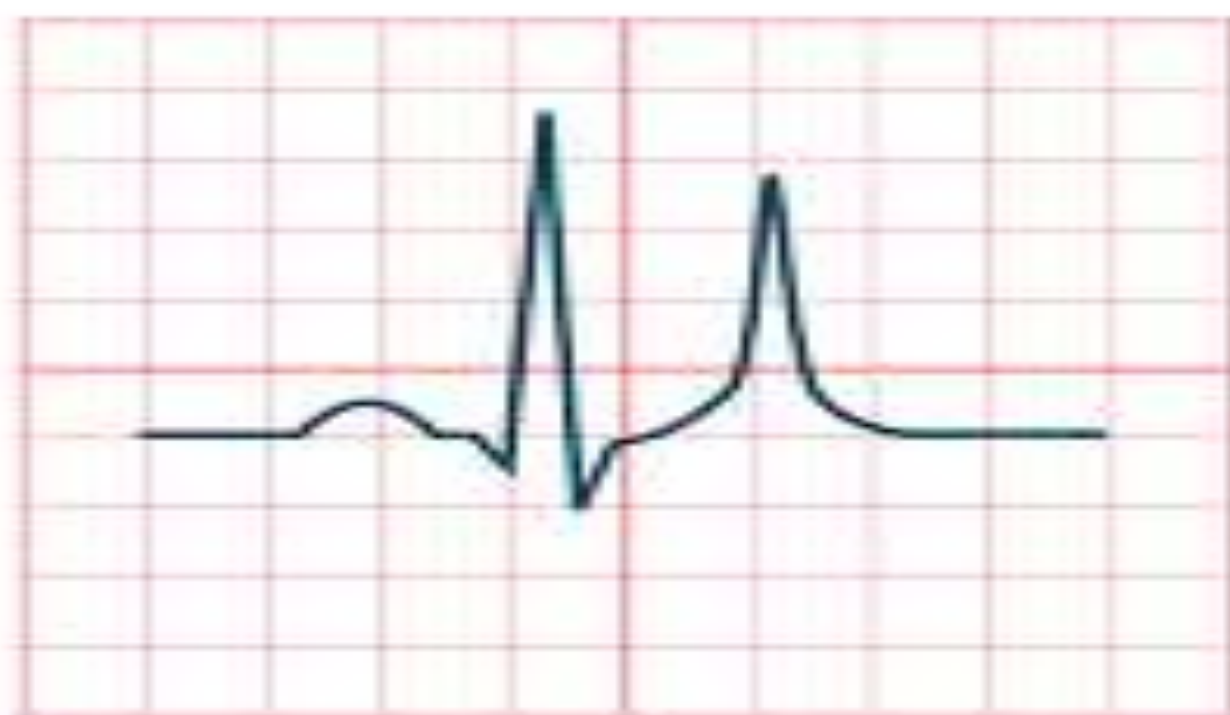
V1



# T wave

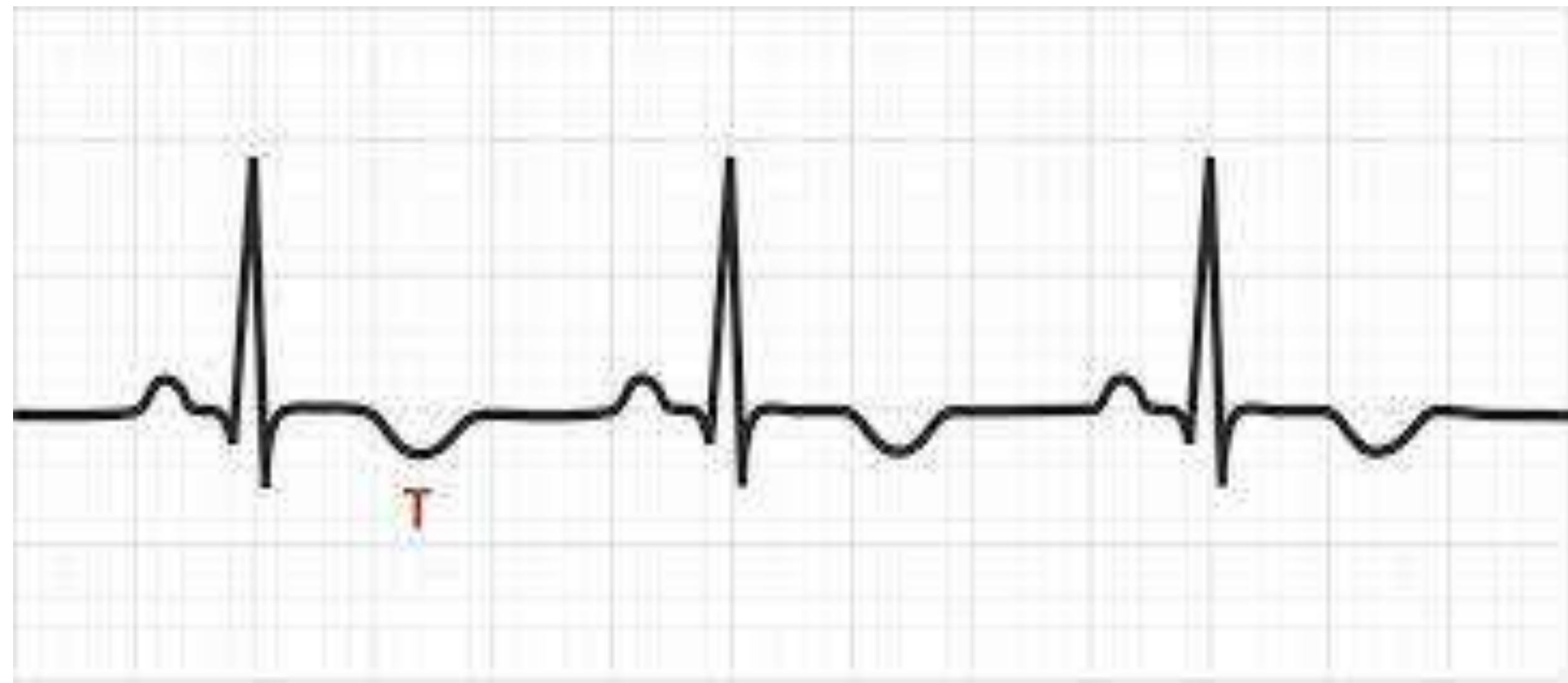






PEAKED T WAVE

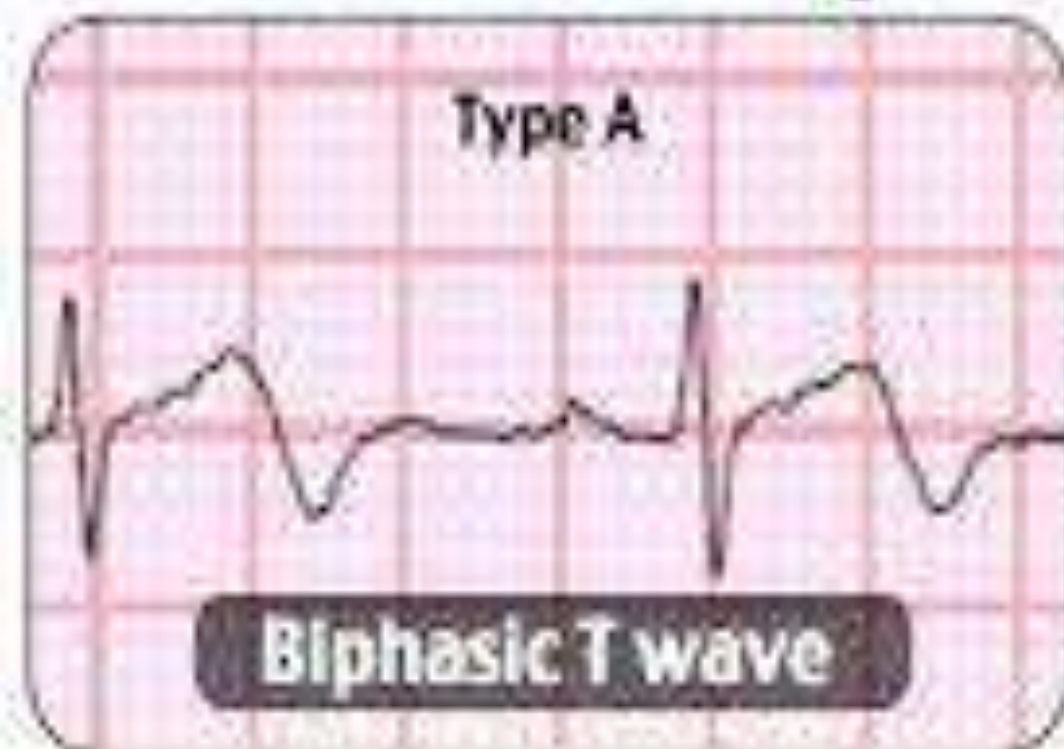
T invert





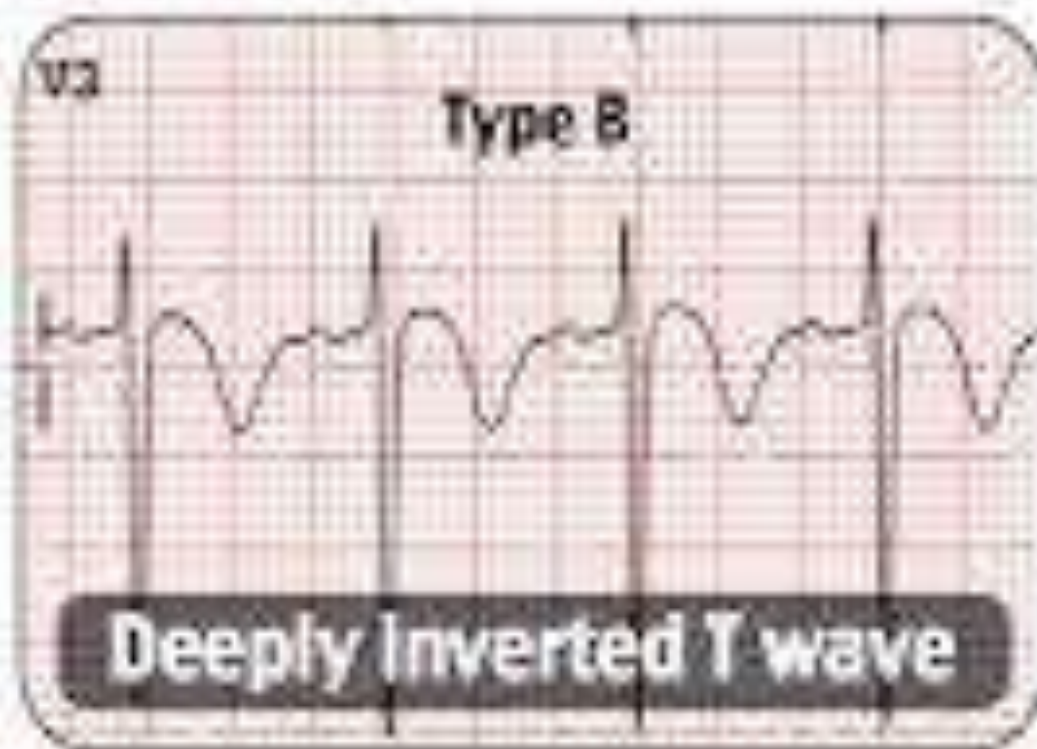
# Wellens' Syndrome

Type A

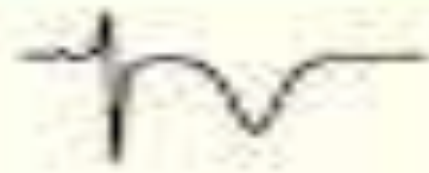
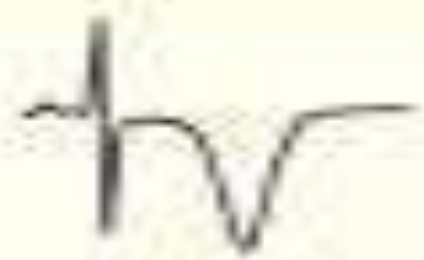




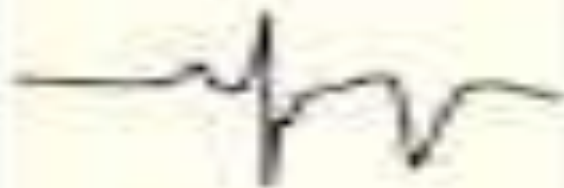

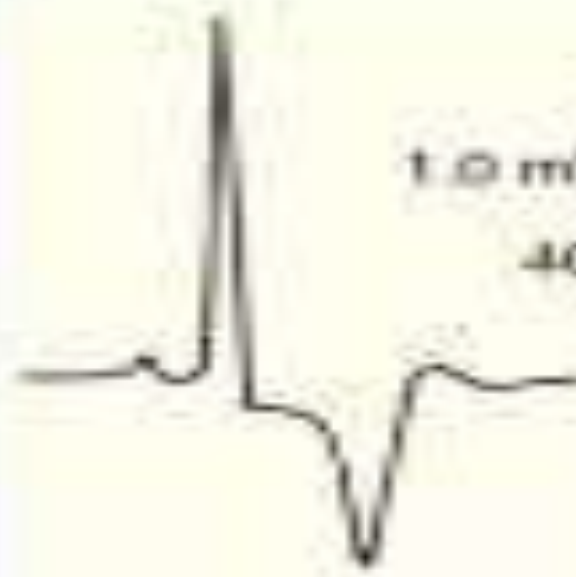


V3

Type B

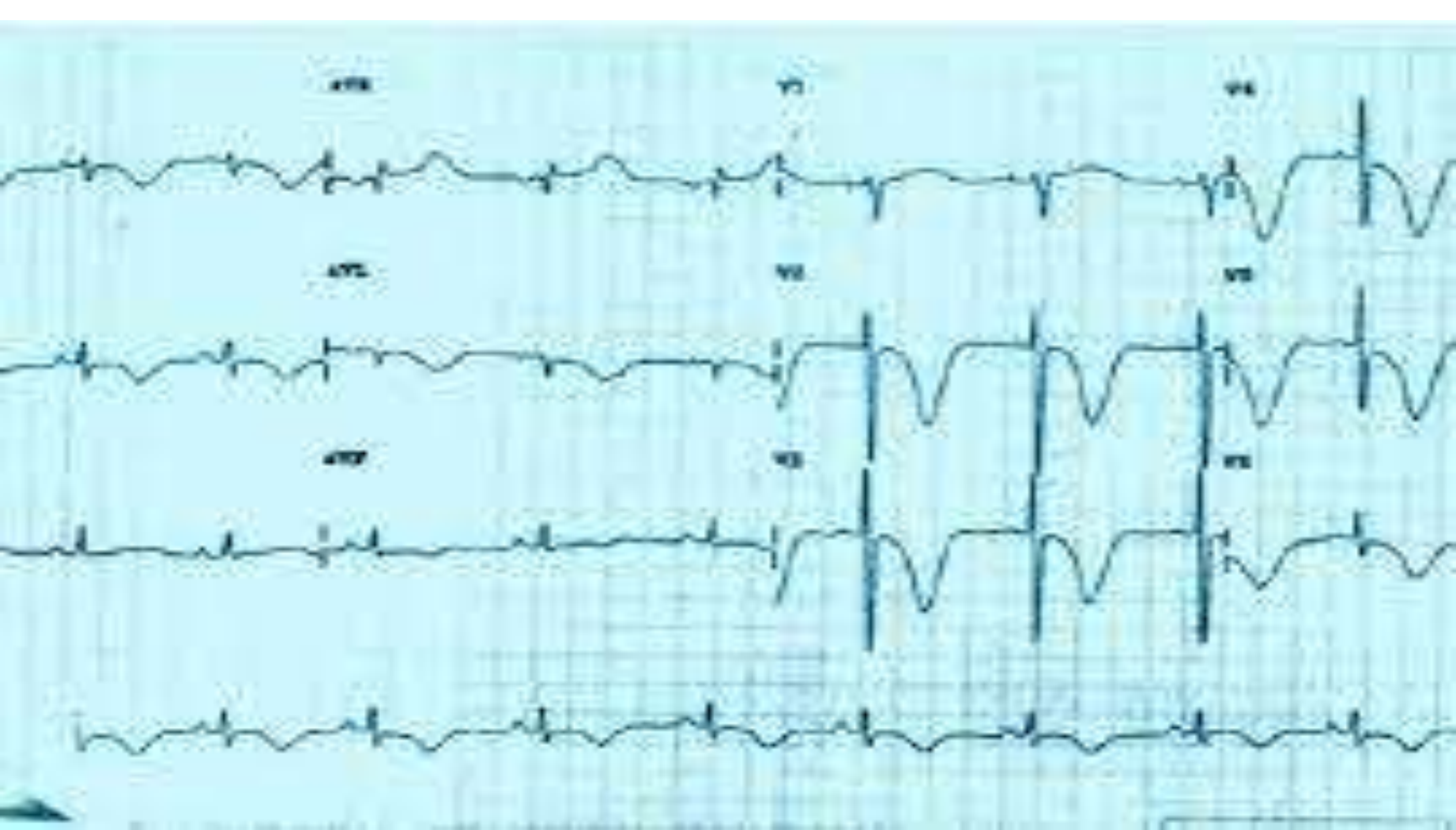


- Highly specific for a critical stenosis of the left anterior descending (LAD) coronary artery
- May be pain free at presentation
- Normal or minimally elevated troponin level
- Require immediate percutaneous intervention

	$V_2$	$V_3$	$V_4$
Ischemia			
CVA			
Apical HCM			

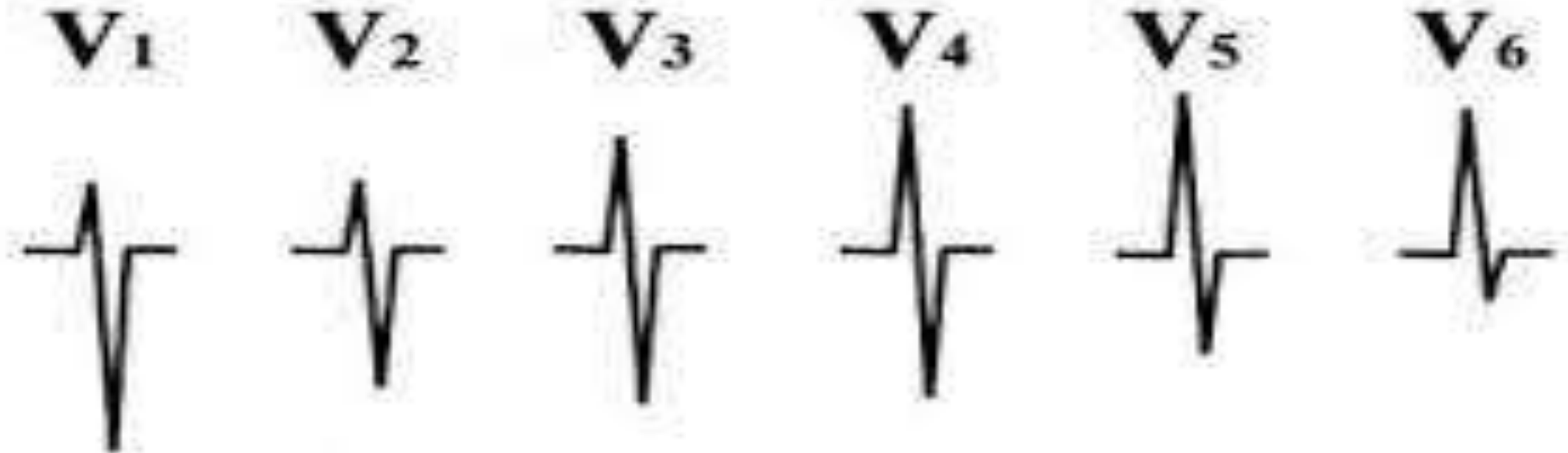
1.0 mV  
400 msec





# نکته 17

## R Wave Progression



**Precordial Transition Zone (R=S) = V4**



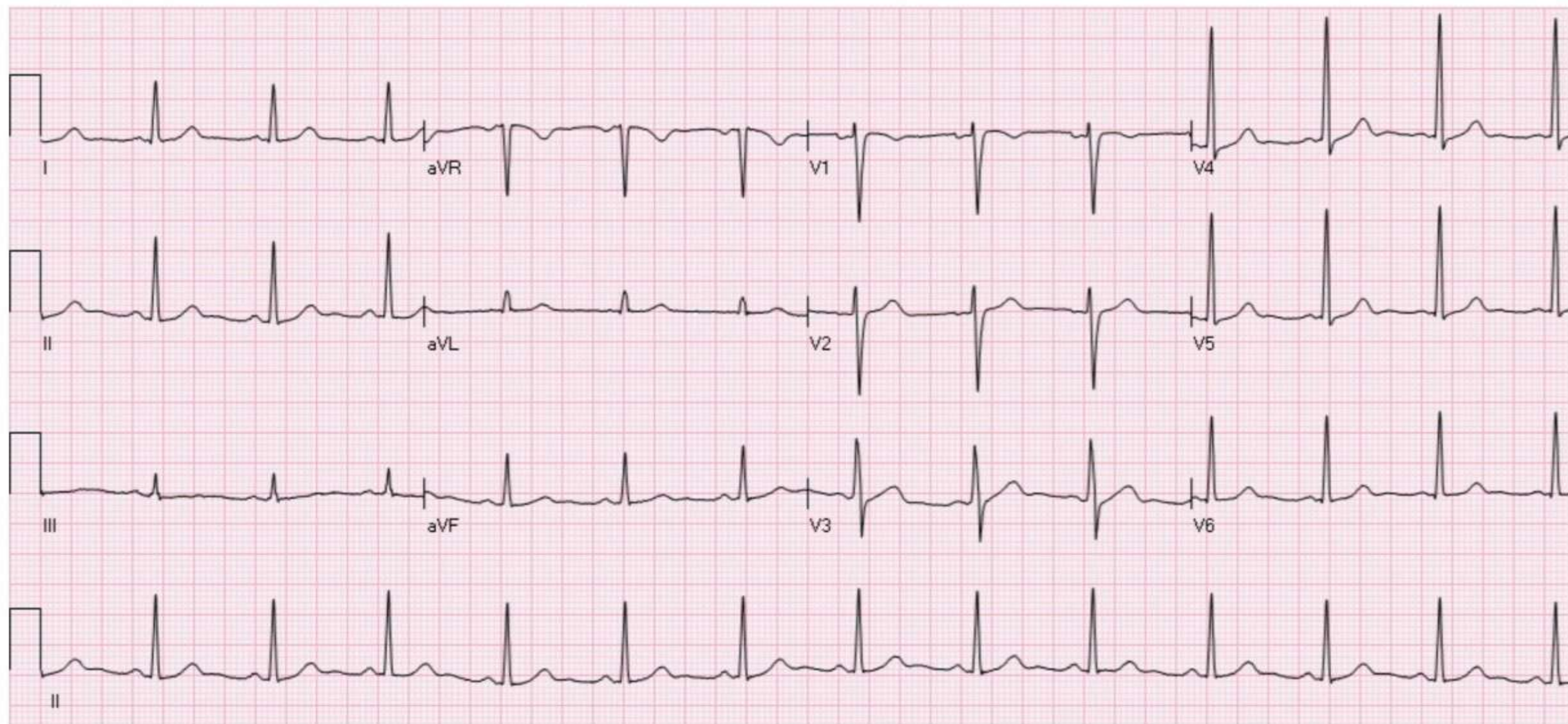


Figure 1. Normal ECG. No abnormal Q waves. ST is isoelectric in all leads

# اریتمی ها

## • باریک

### منظم

1-تاکیکاردی سینوسی

PSVT-2

3-فلاتر دهلیزی

### نامنظم

AF-1

MAT-2



پہن

منظم

VT-1

SVT with aberrancy-2

نامنظم

AF+WPW

AF+BBB

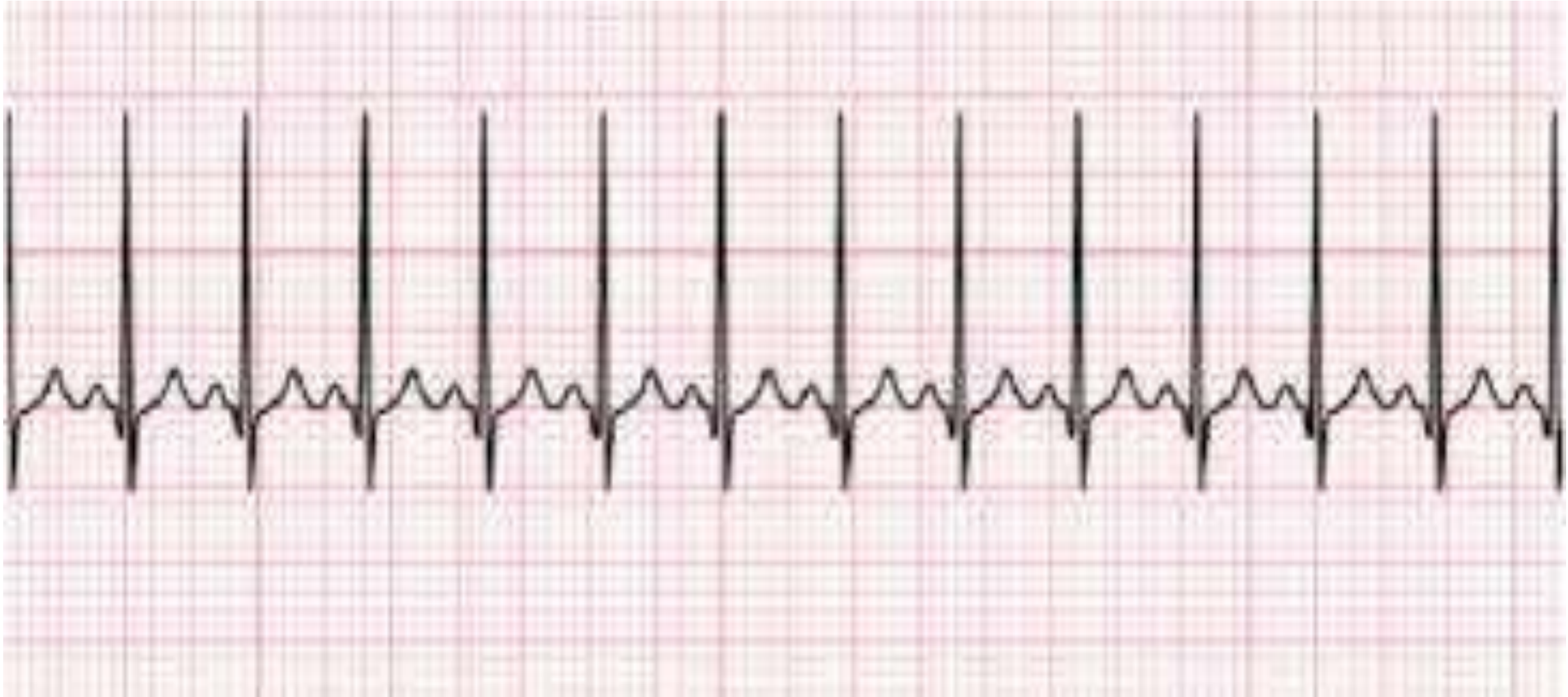
# باریک منظم

1- تاکیکاردی سینوسی

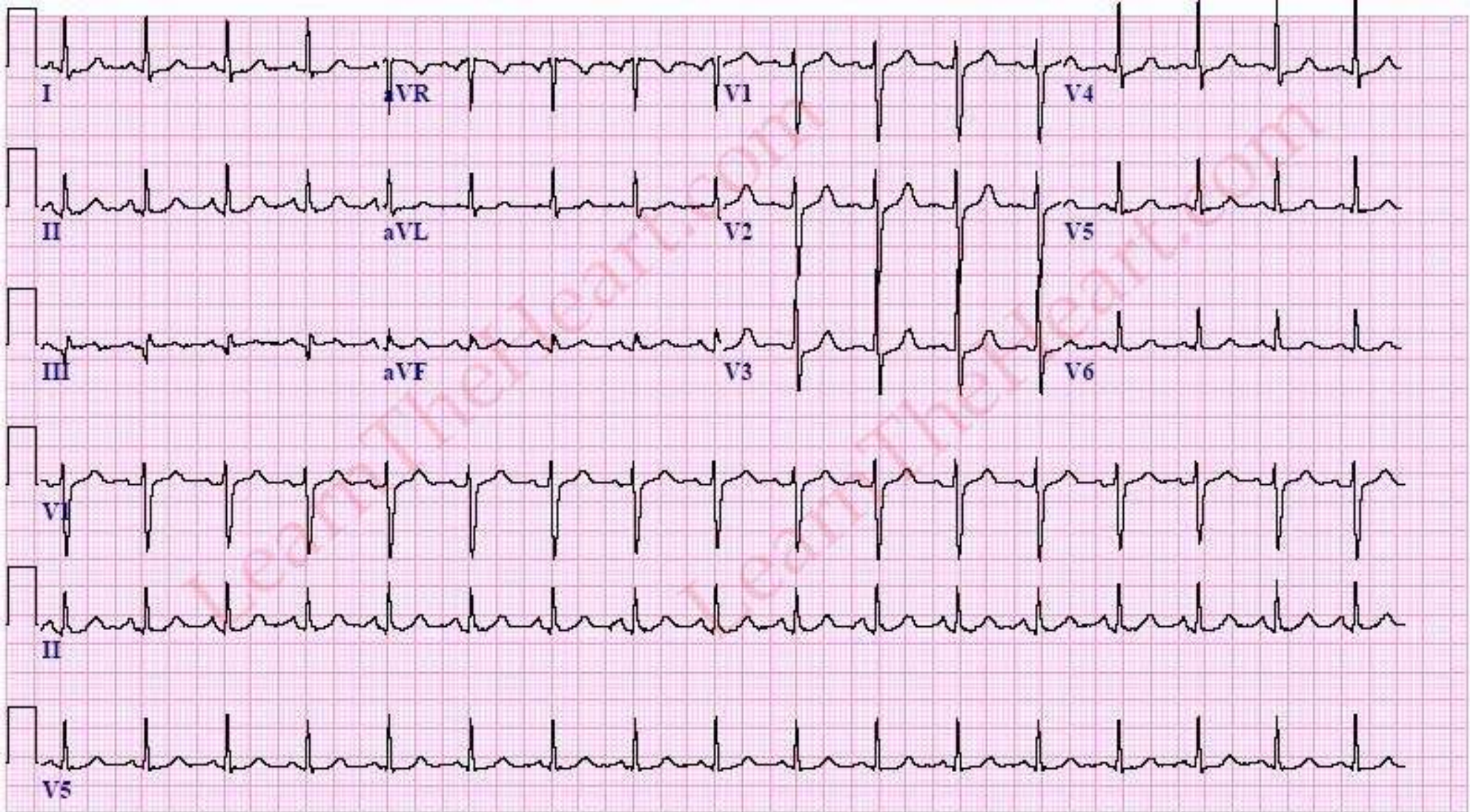
PSVT-2

3- فلاتر دهلیزی

# تاکیکاردی سینوسی

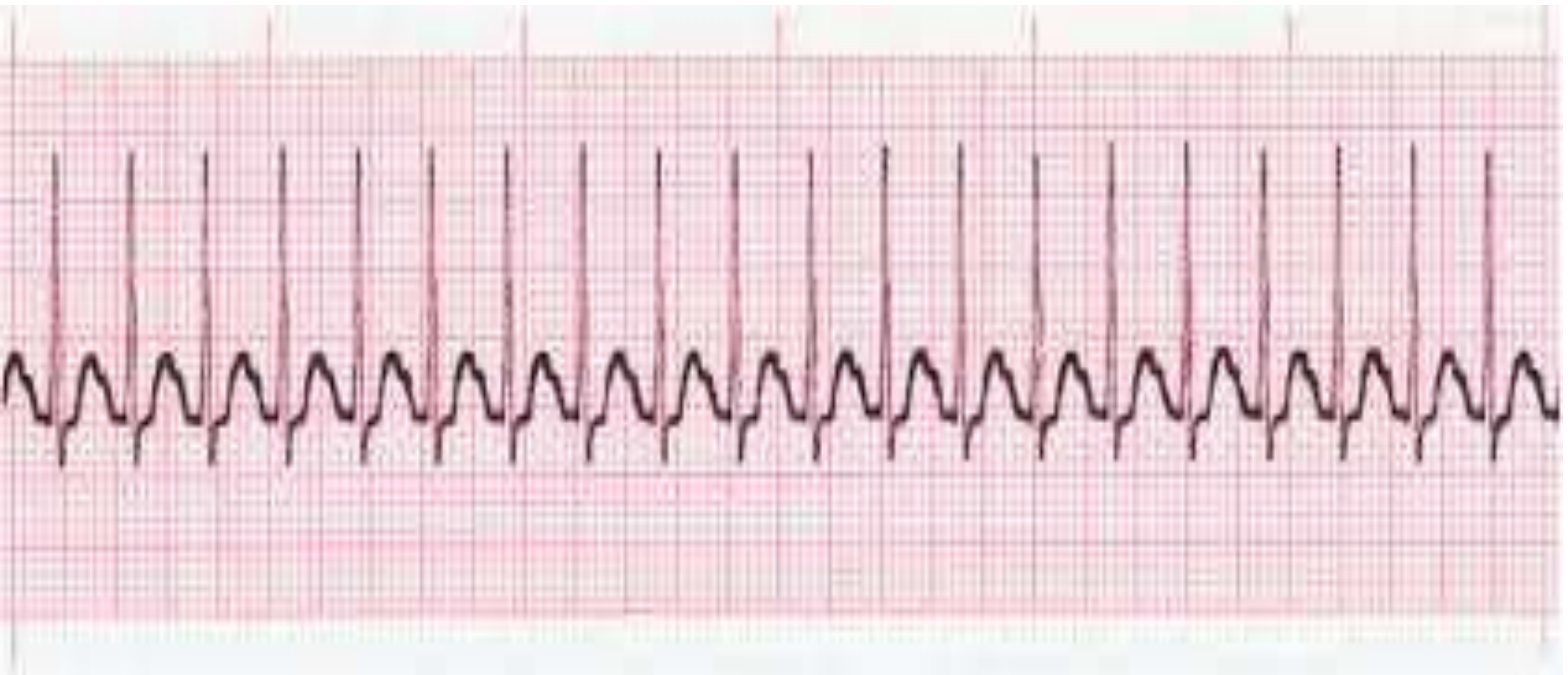




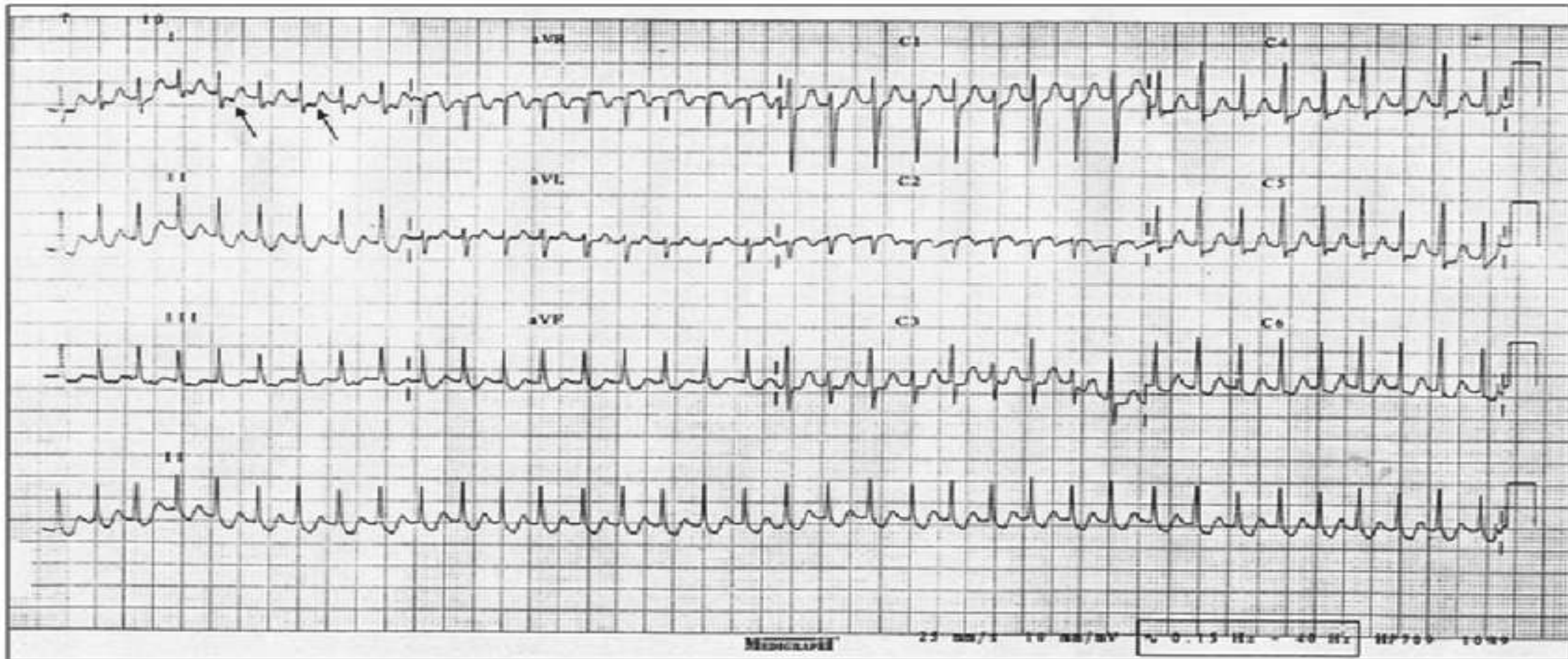




# PSVT



# PSVT





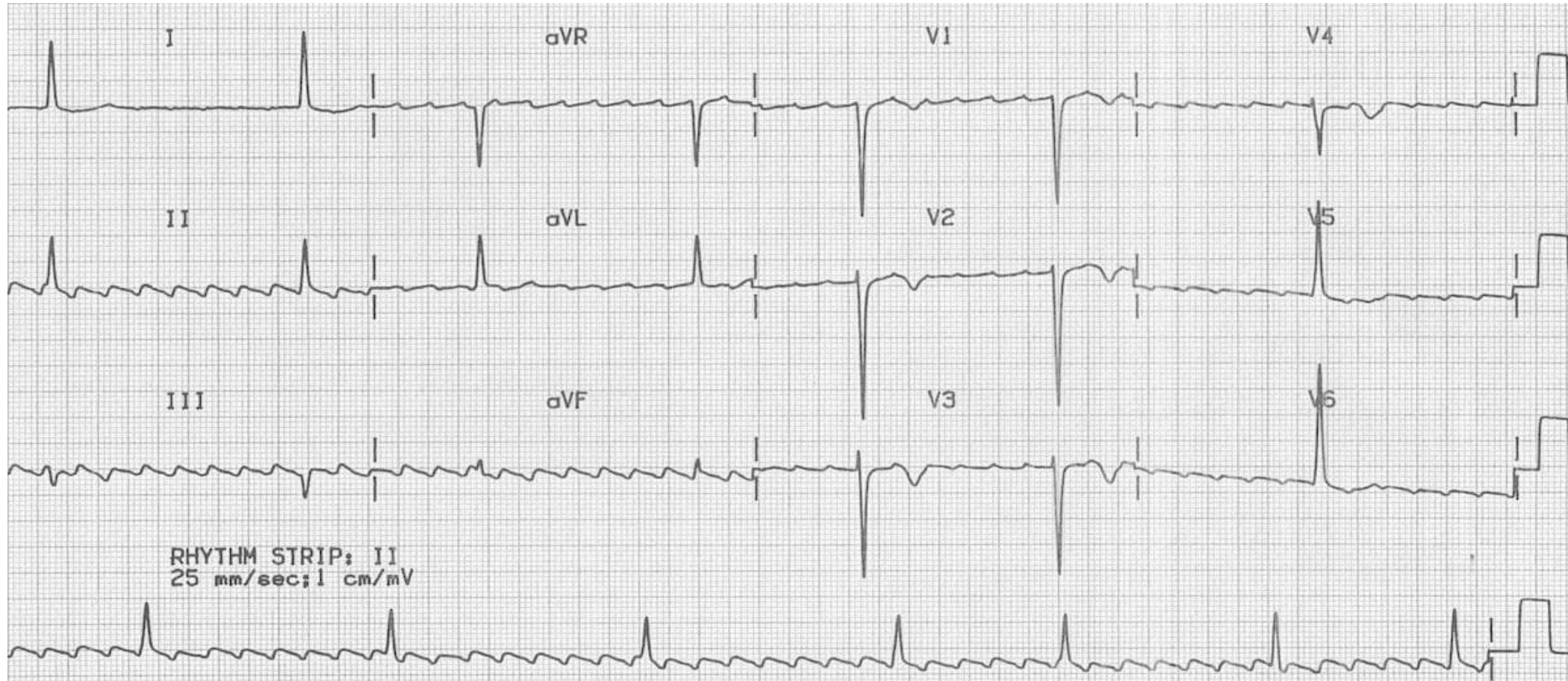
# Atrial Flutter

Lead II



25 mm/sec 10 mm/mV

# فلتر دهلیزی



# باریک نامنظم

- AF
- MAT

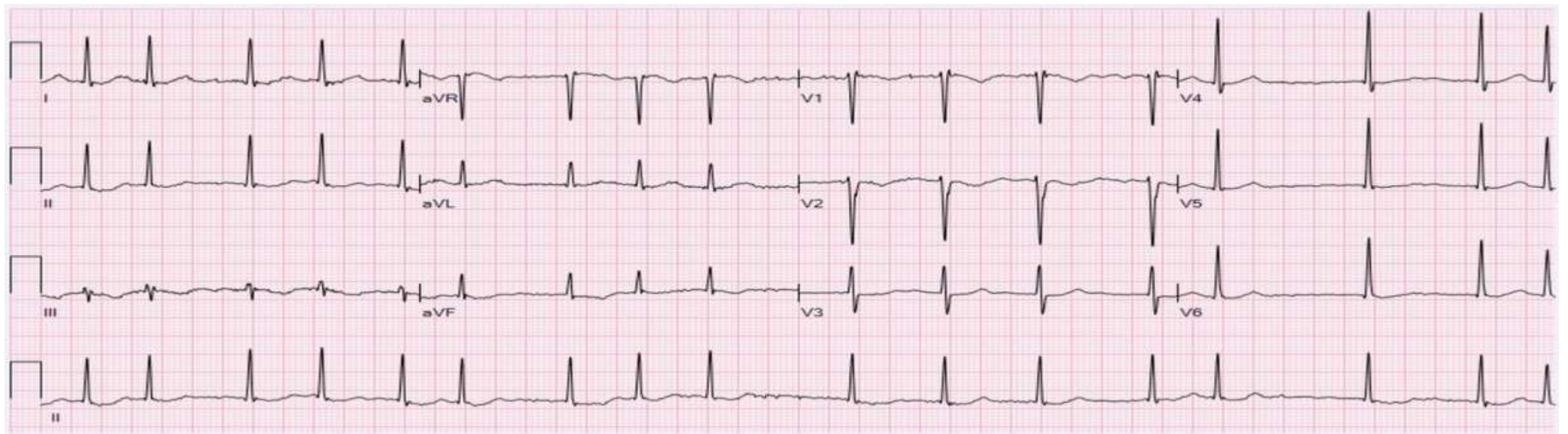


## Atrial Fibrillation (AF)



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# AF



MAT





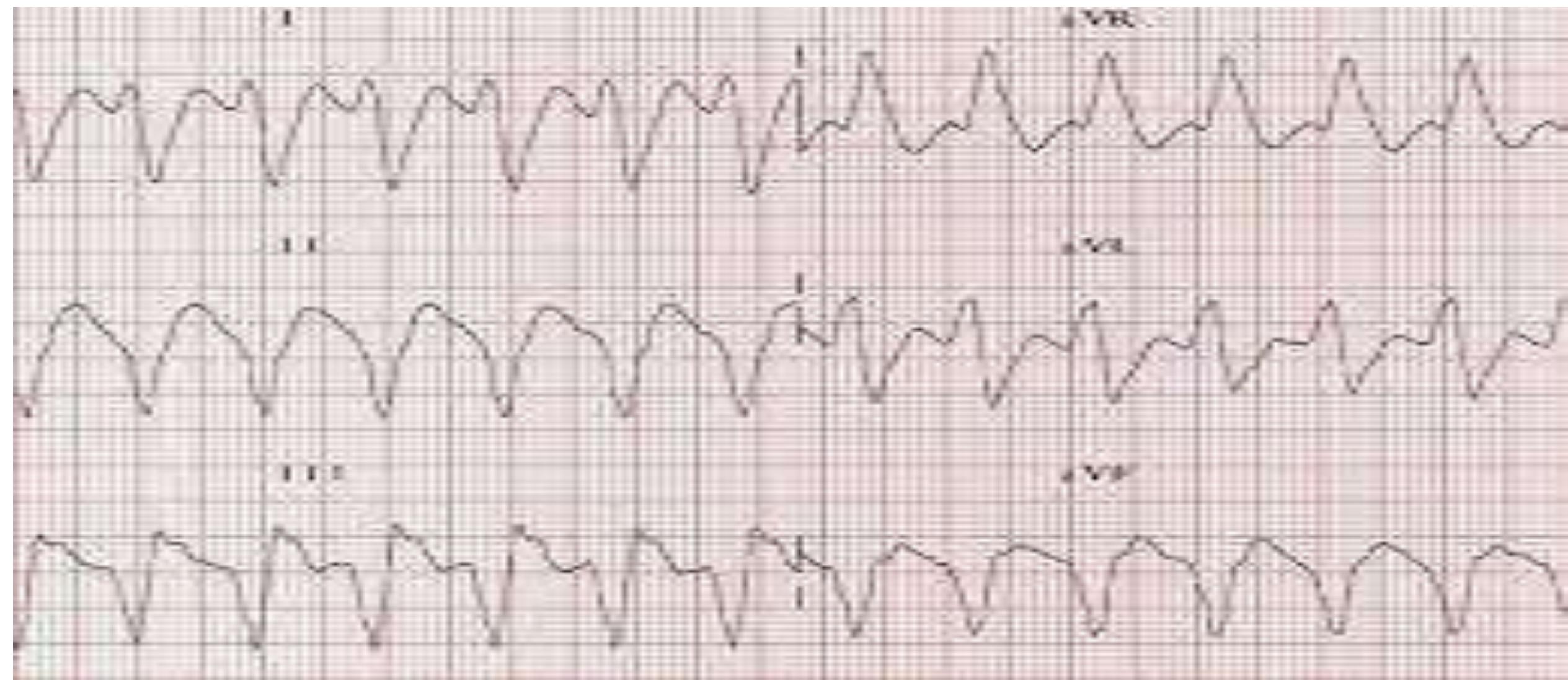
خسته نباشید



# پہن منظم

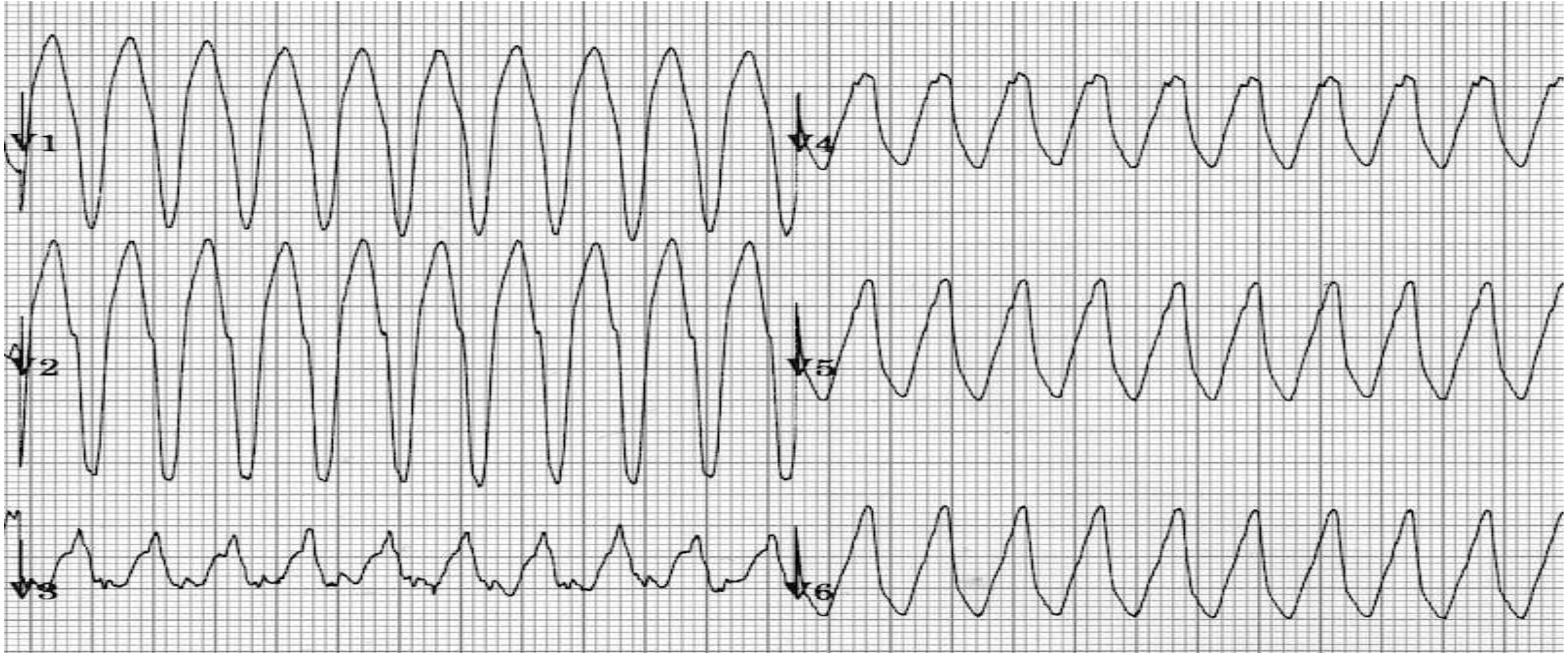
- VT
- SVT with aberrancy

انحراف شدید به راست = VT

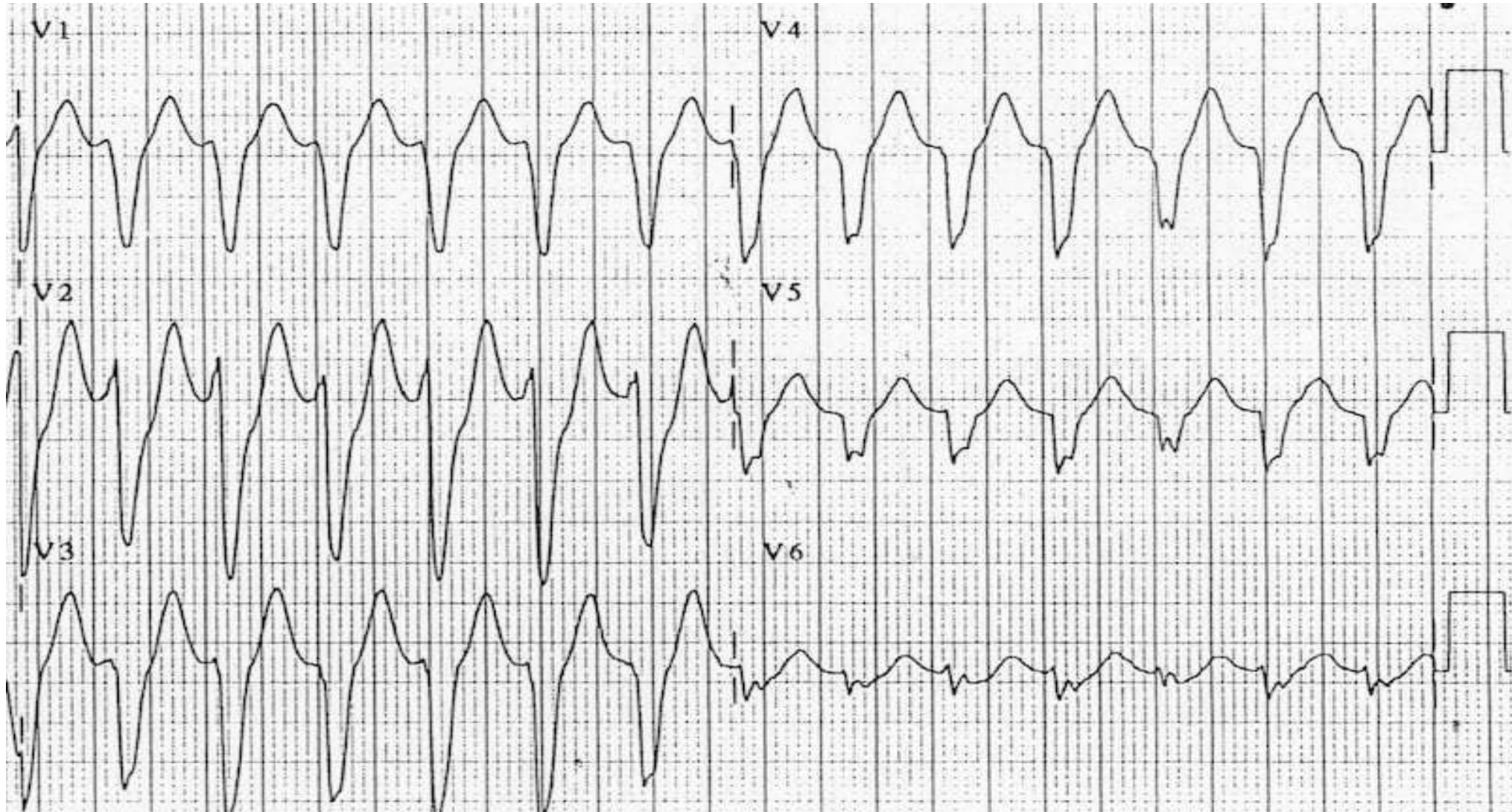




Positive concordance= $VT$



# Negative concordance=VT







**Capture beat:**

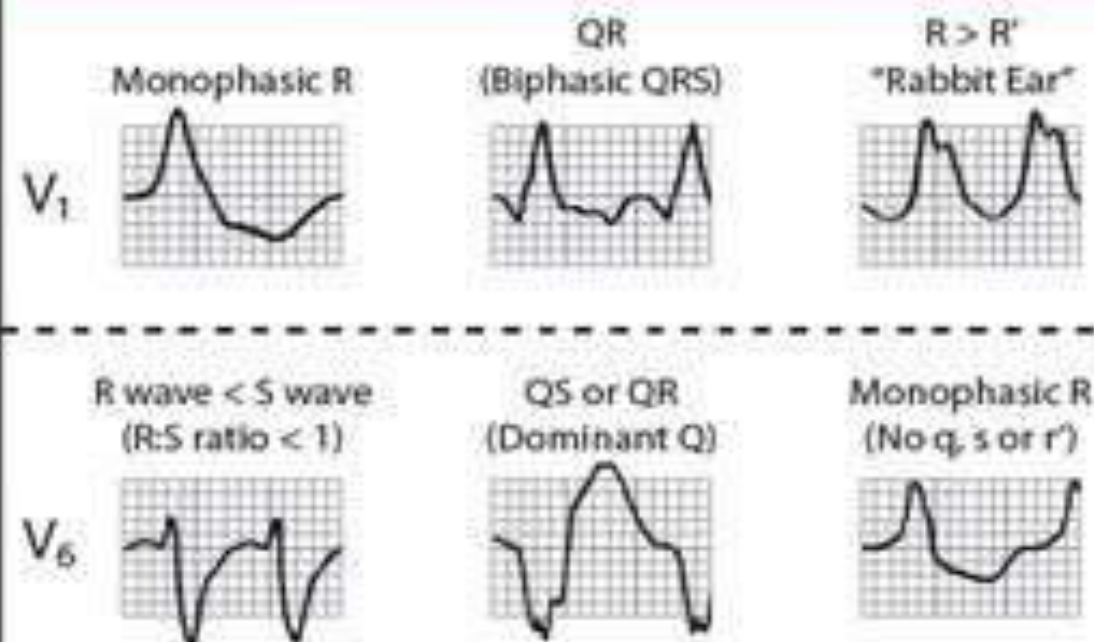


**Fusion beat:**

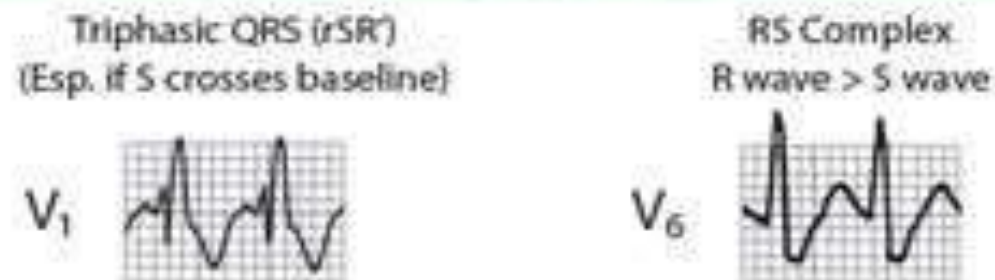




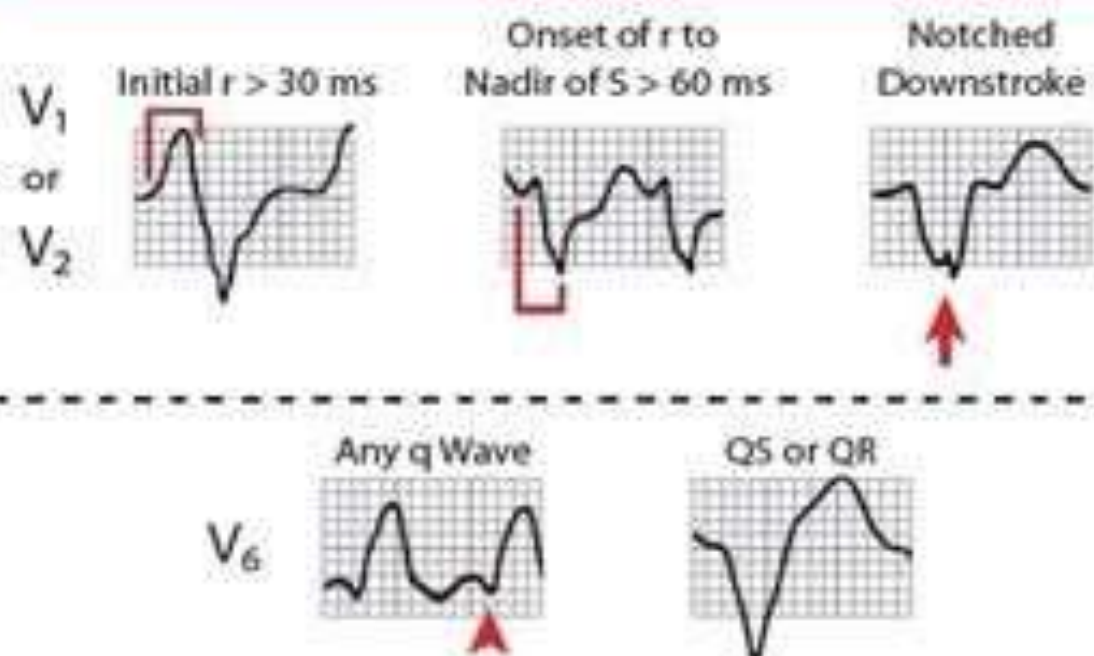
## RBBB Morph. Criteria for VT



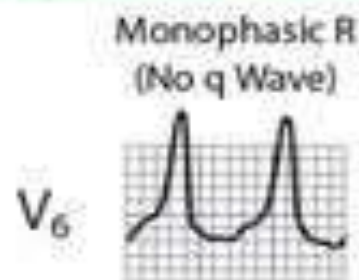
## RBBB Morph. Criteria for SVT

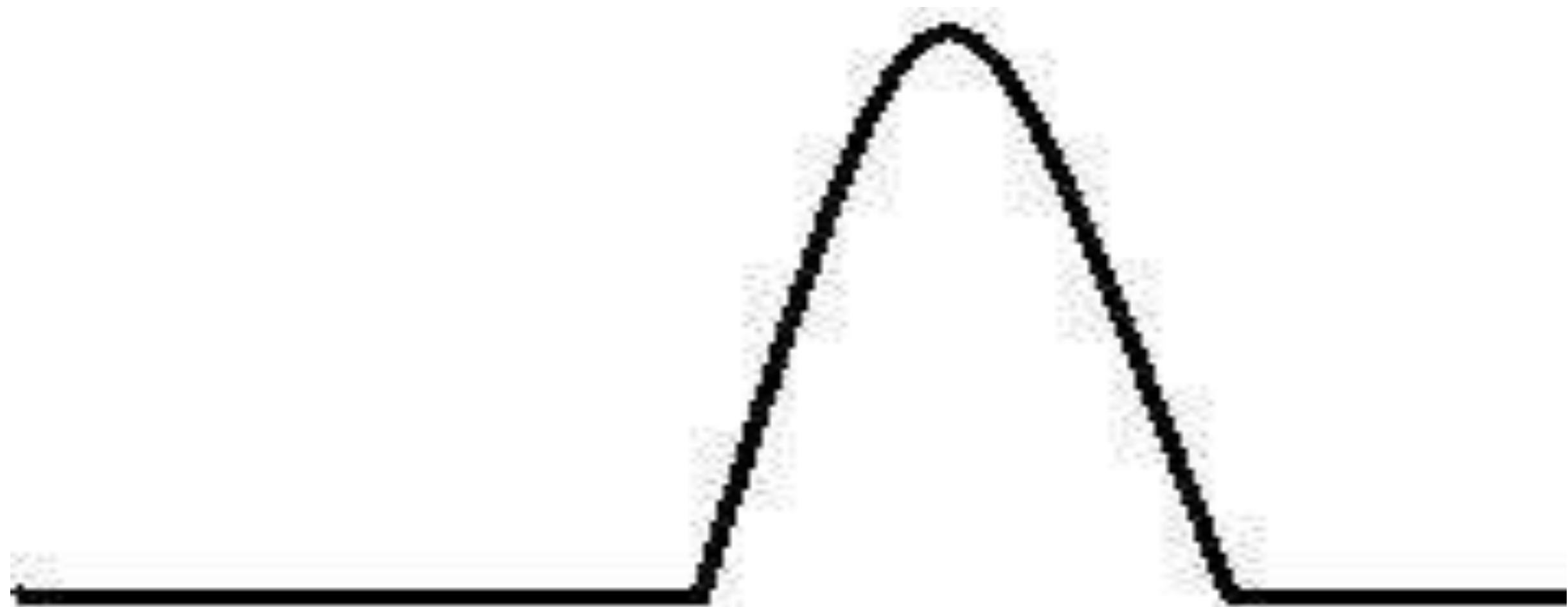


## LBBB Morph. Criteria for VT



## LBBB Morph. Criteria for SVT

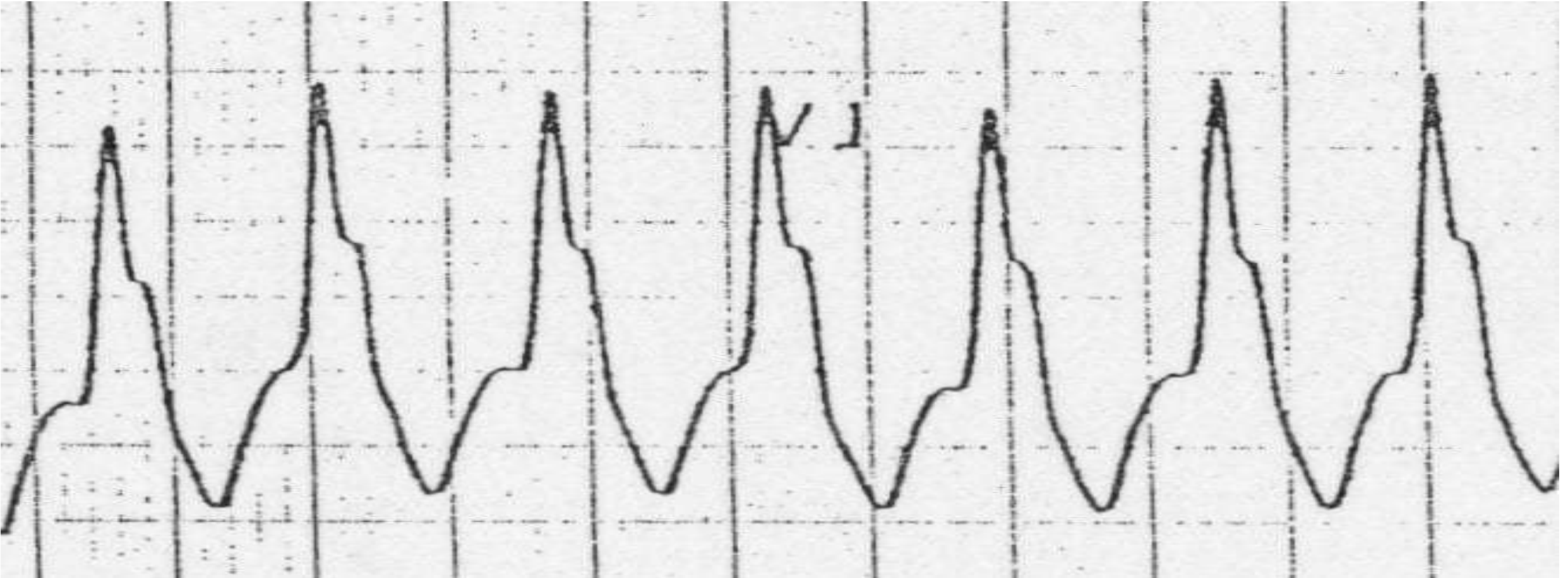


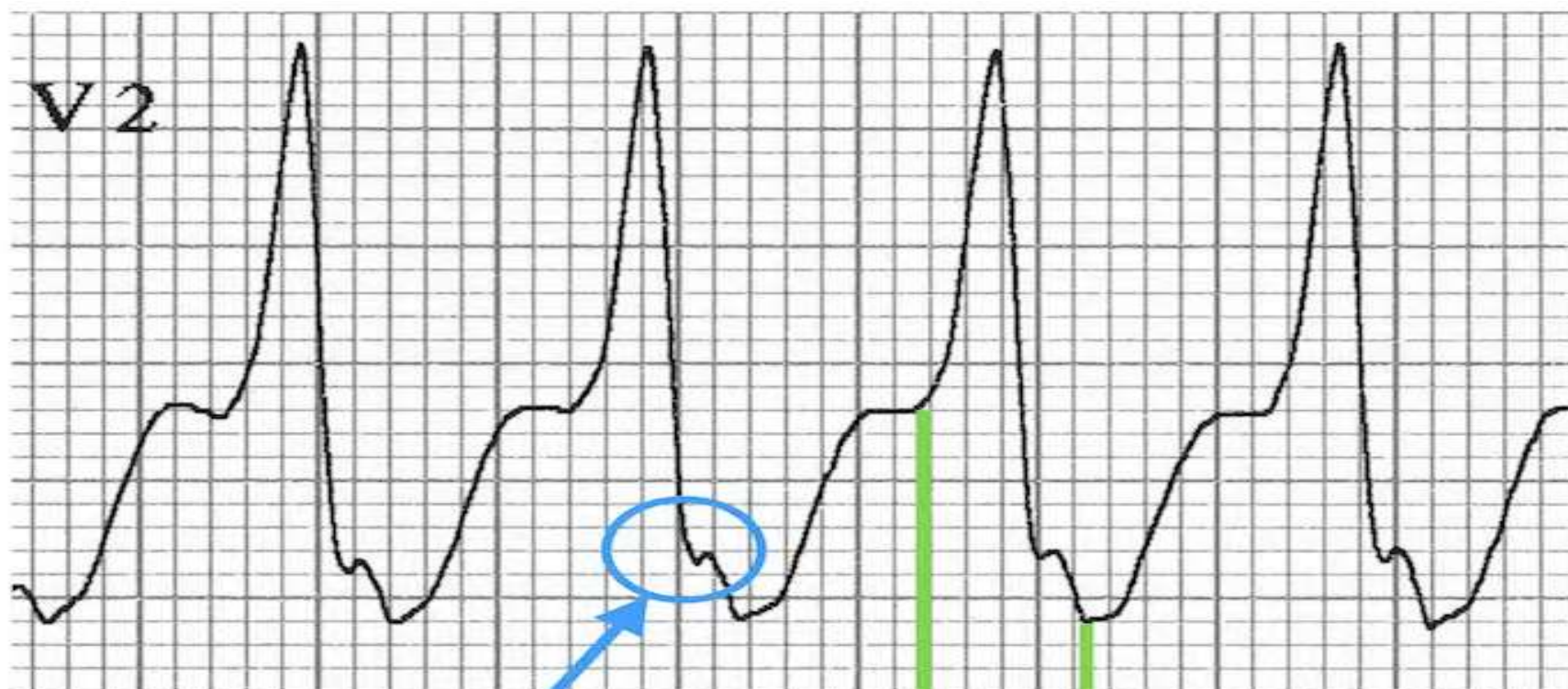


**Monophasic R**



RSR' complexes with a taller left rabbit ear





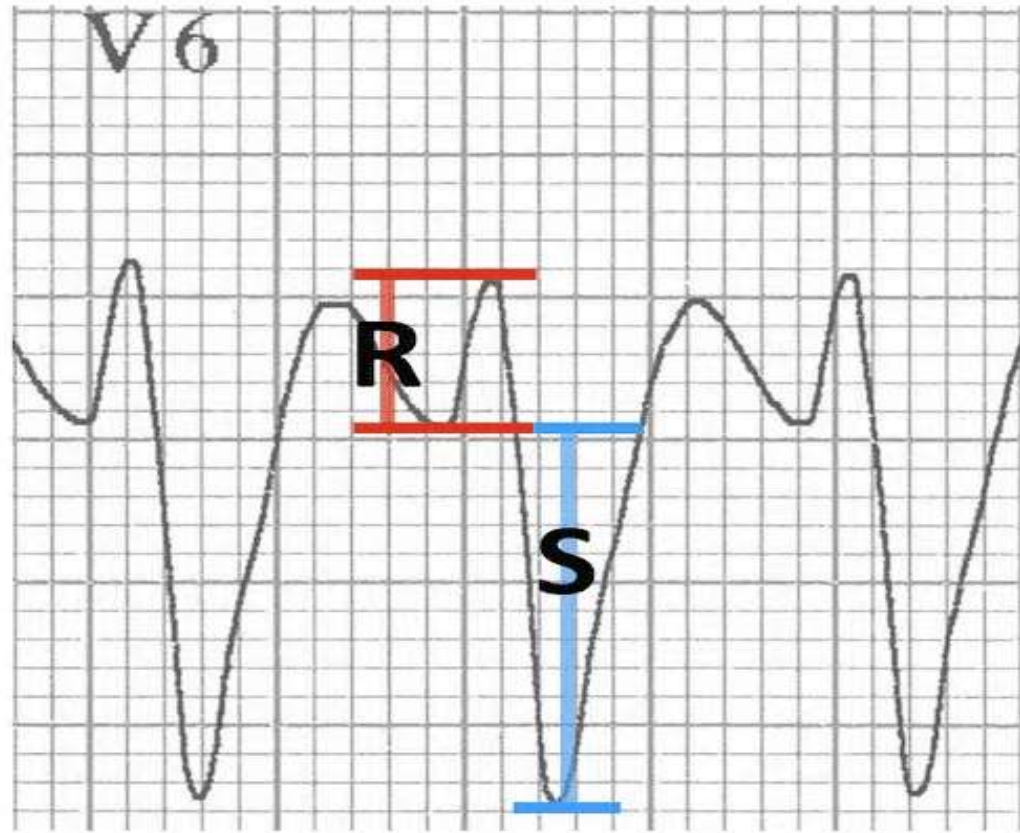
**S wave**

Notched /  
Slurred

**R-S interval**

> 100 ms  
> 2.5 squares

V6 در لید R/S ratio < 1



**R/S Ratio**

R/S < 1



**Narrow R wave**

**Wide R wave**

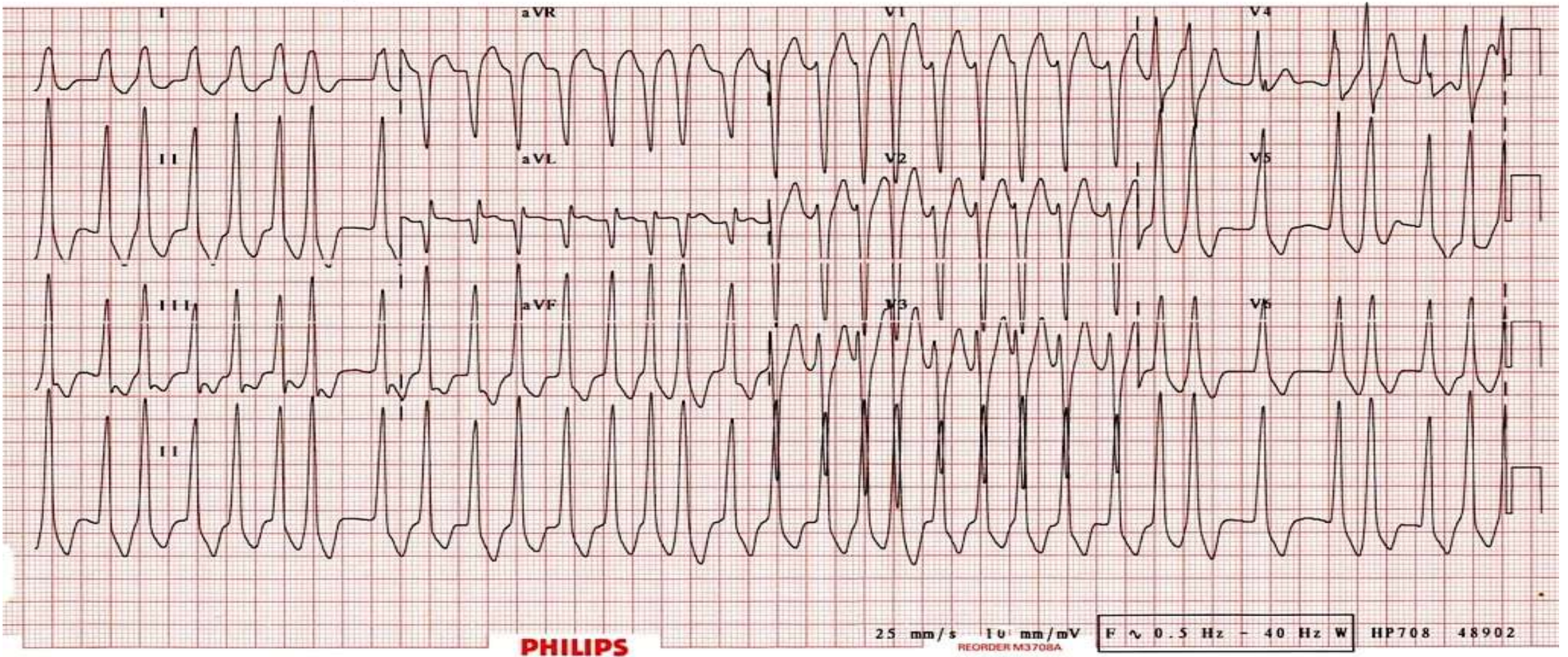


# پہن نامنظم

- **AF+ WPW**
- **AF+BBB**

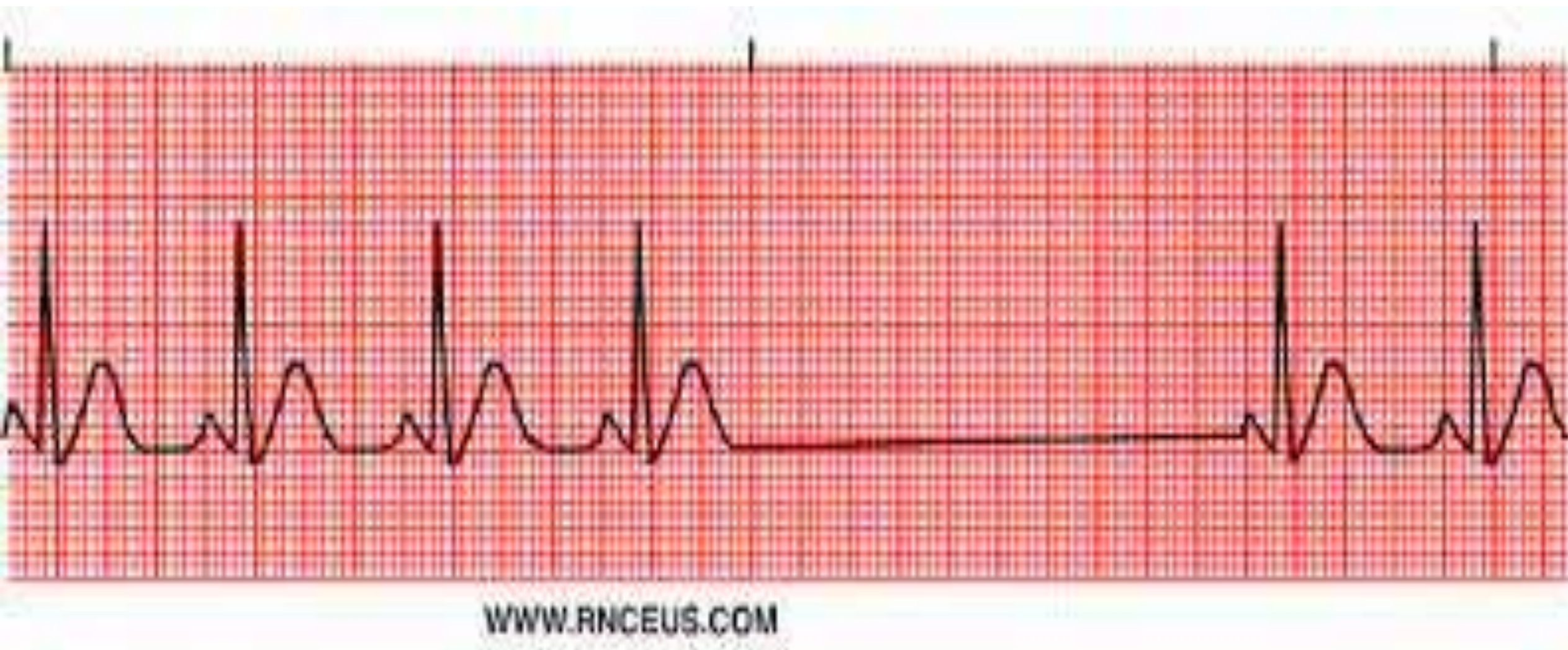


# AF + WPW





sinus pause



# Sinus pause

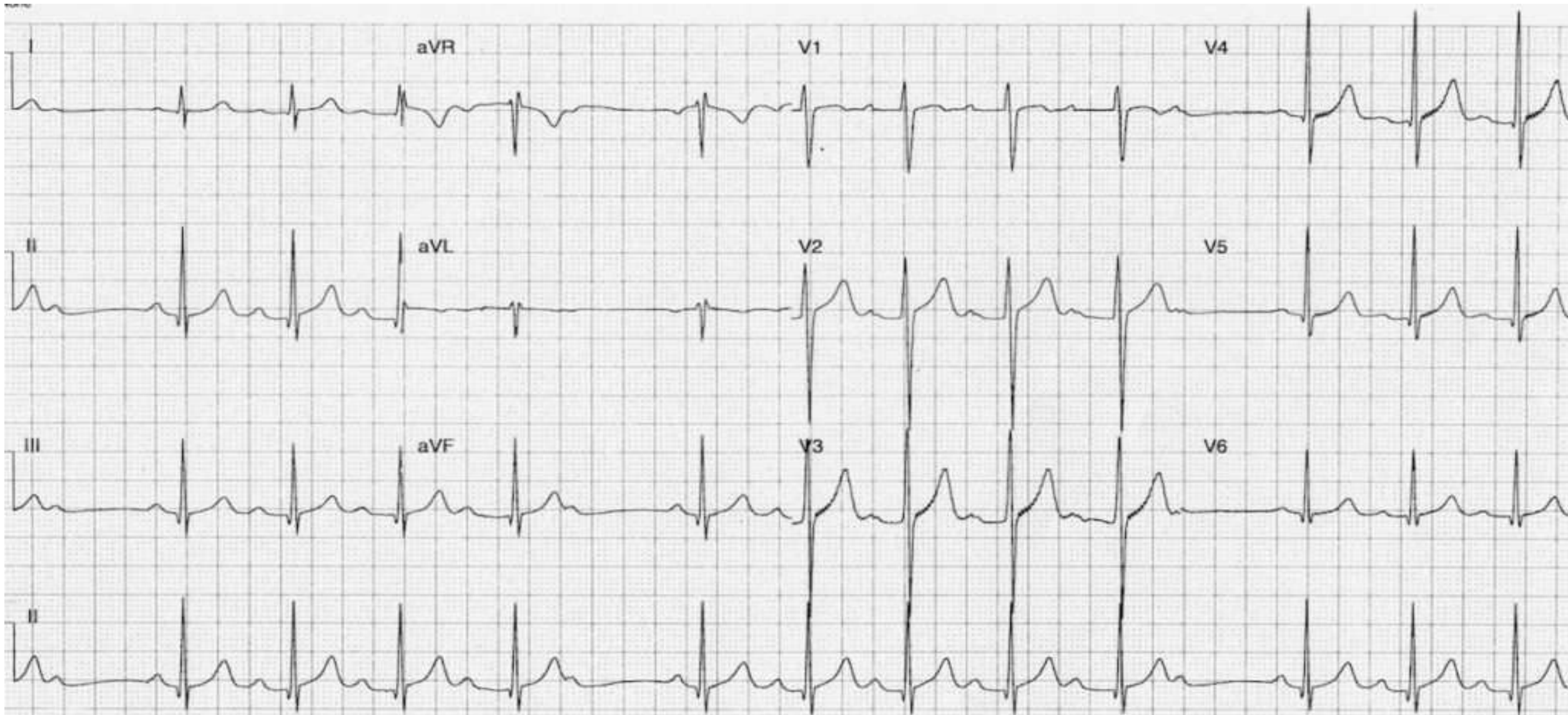
- Sinus arrest
- **SA BLOCK (SINUS EXIT BLOCK)**

# AV block

- First degree AV block
- Wenkebach
- Mobitz type 2
- CHB



# ونکباخ



# Mobitz type 2

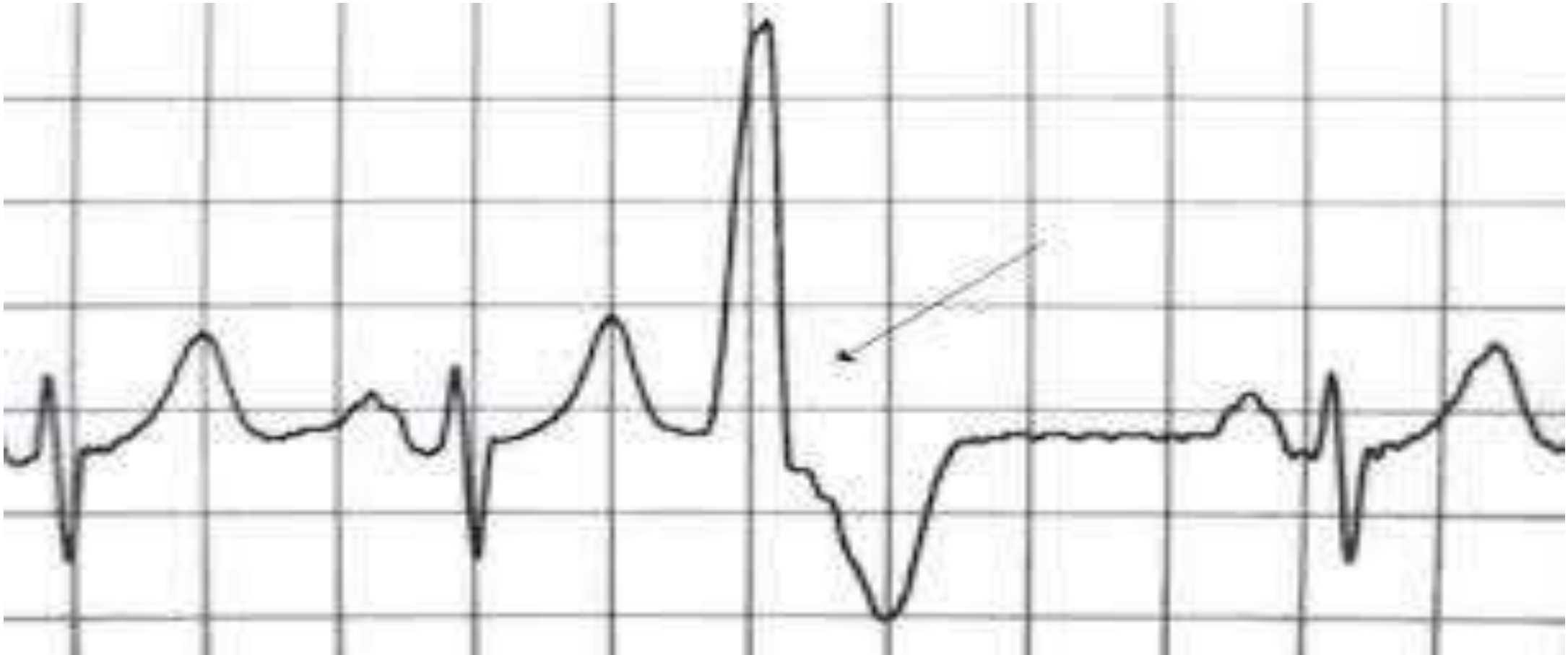


# CHB

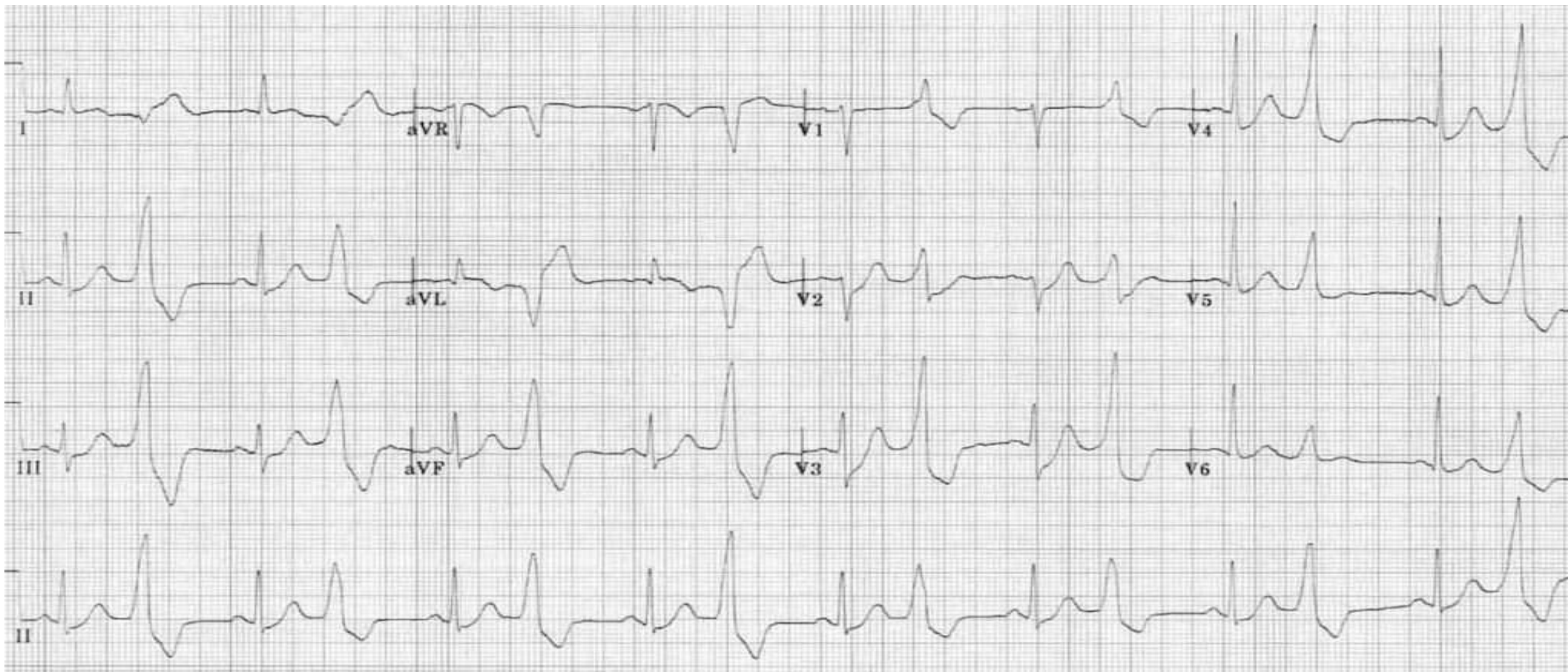




PVC



# PVC بای ژمینی



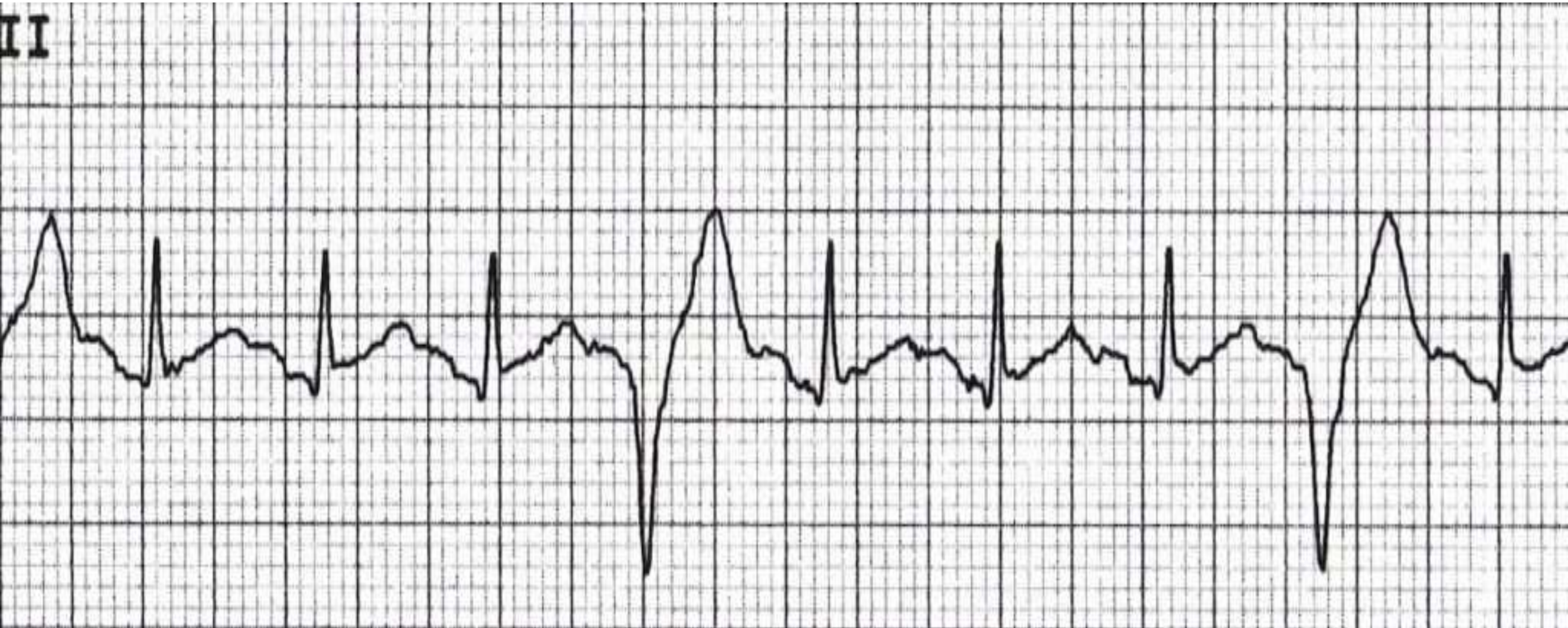
# Trigeminy PVC

Lead II

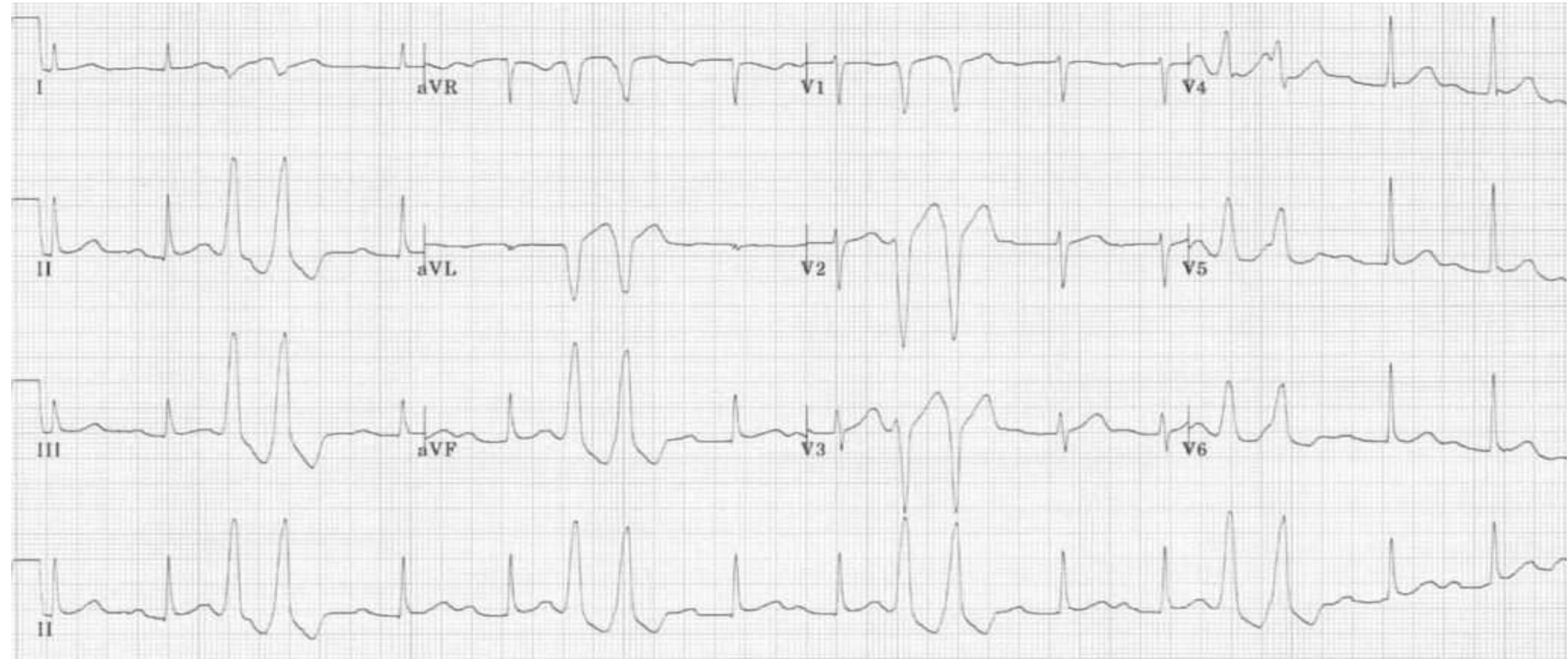




# PVC کوادری ژمینی



# PVC couplet

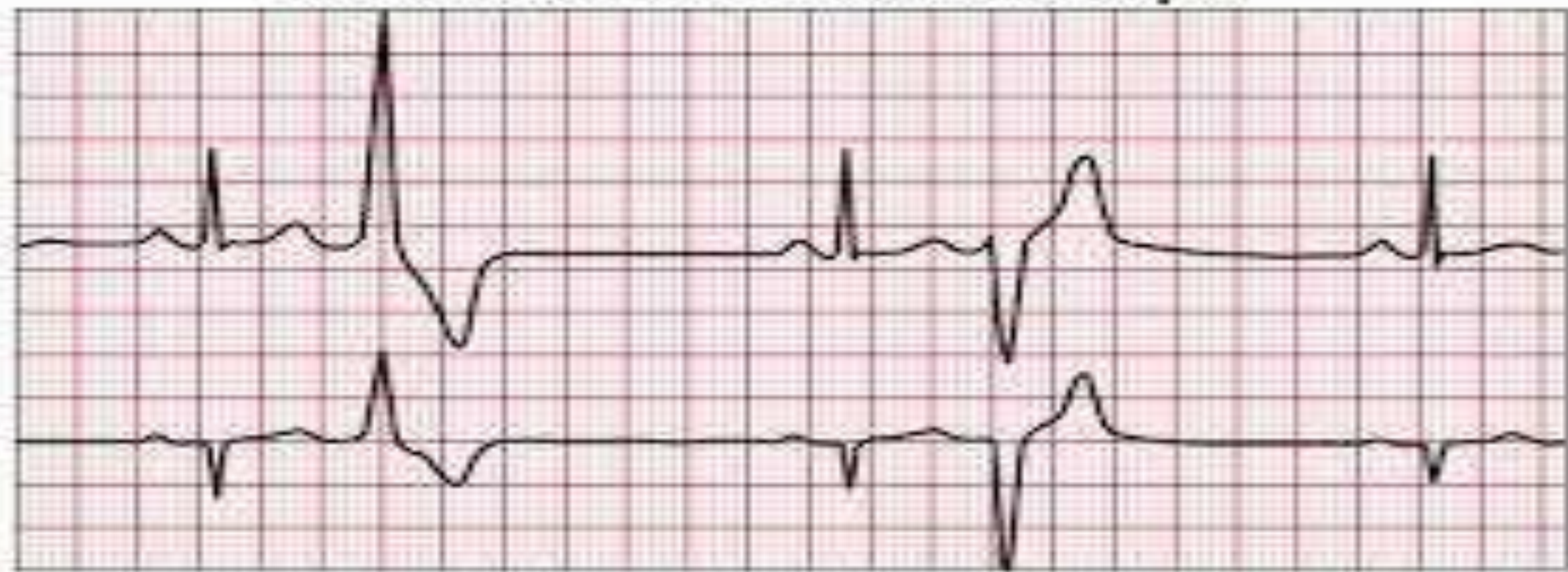


# Non sustained VT





### Multifocal PVC's: more than one shape

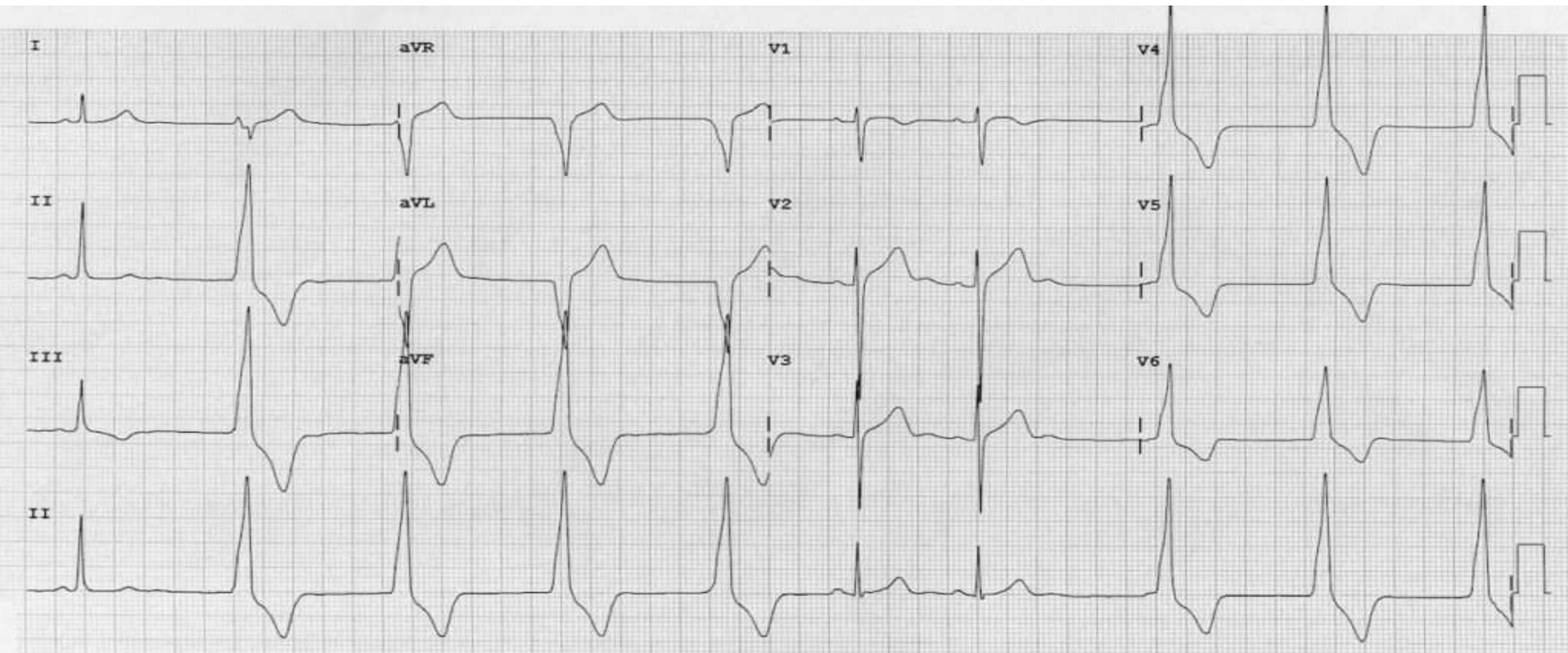




## PVC with R on T phenomenon



# ریتم ایدیوونتریکو لار تسریع شده

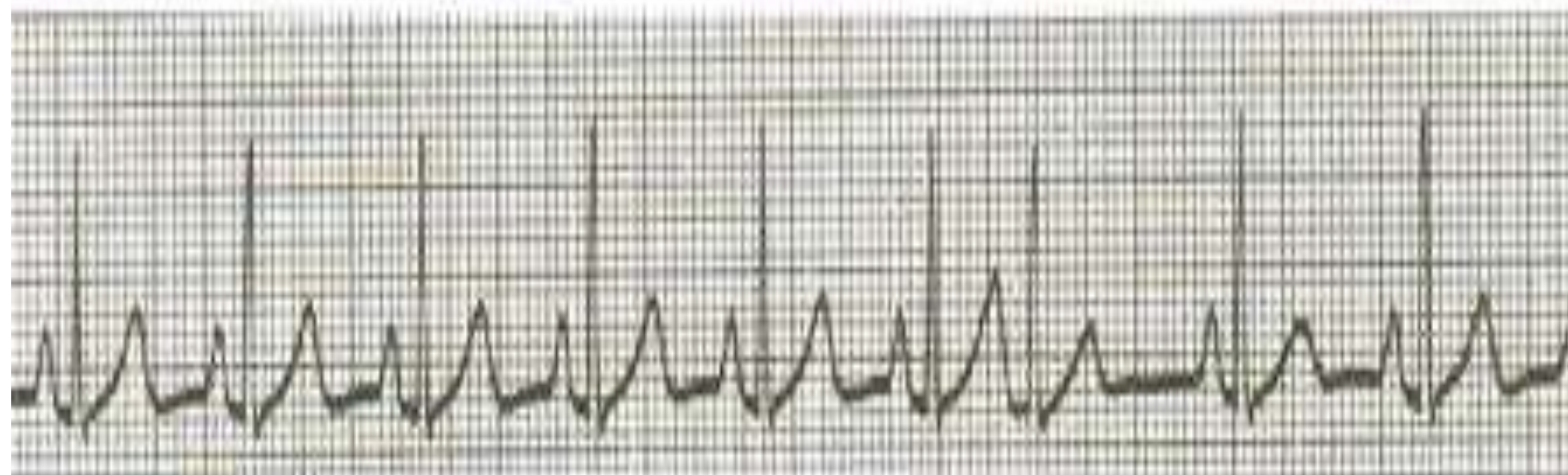




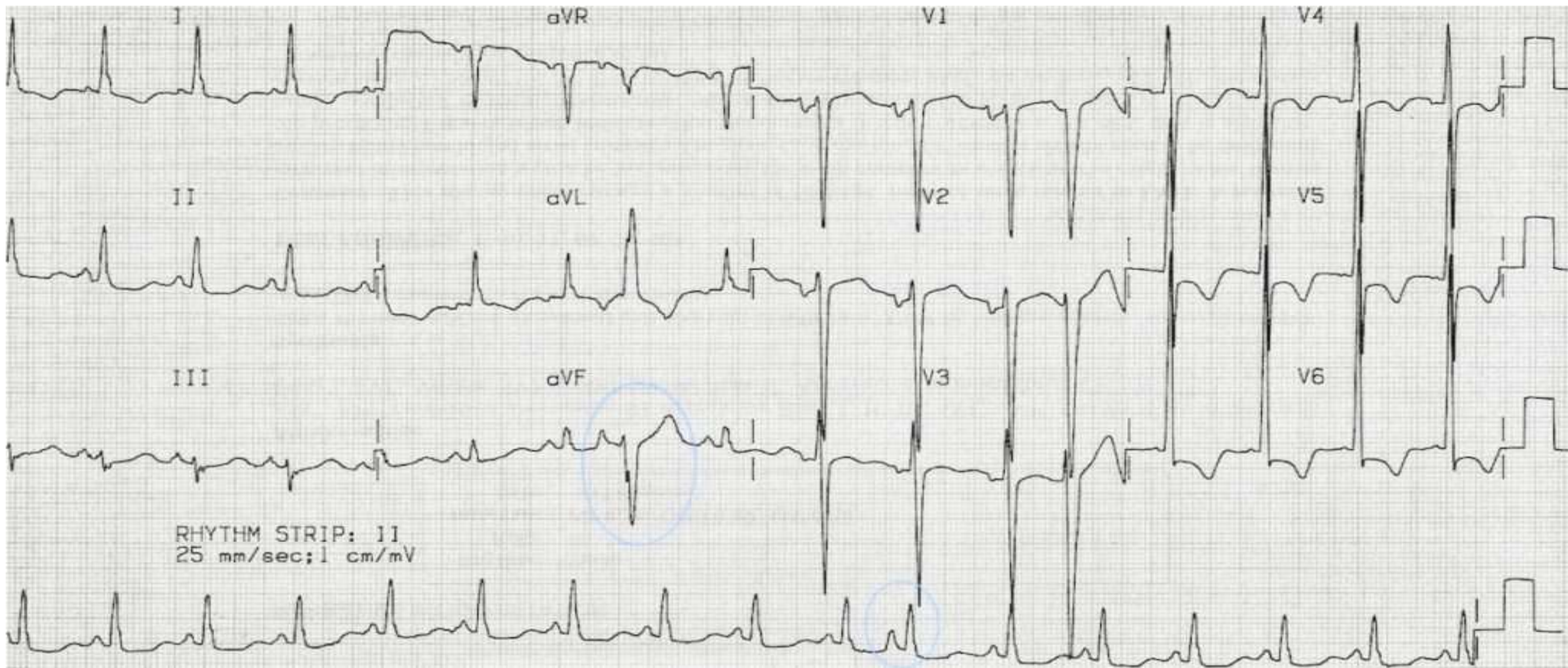
# PVC پشت سر هم

- ریت زیر 50 = ریتم ایدیونتریکولار
- ریت 50 تا 110 = ریتم ایدیونتریکولار تسریع شده
- ریت بالای 110 = تاکیکاردی بطنی

## NSR with a PAC (7th complex)



# PAC





# اریتمی سینوسی



I

aVR

V1

V4

II

aVL

V2

V5

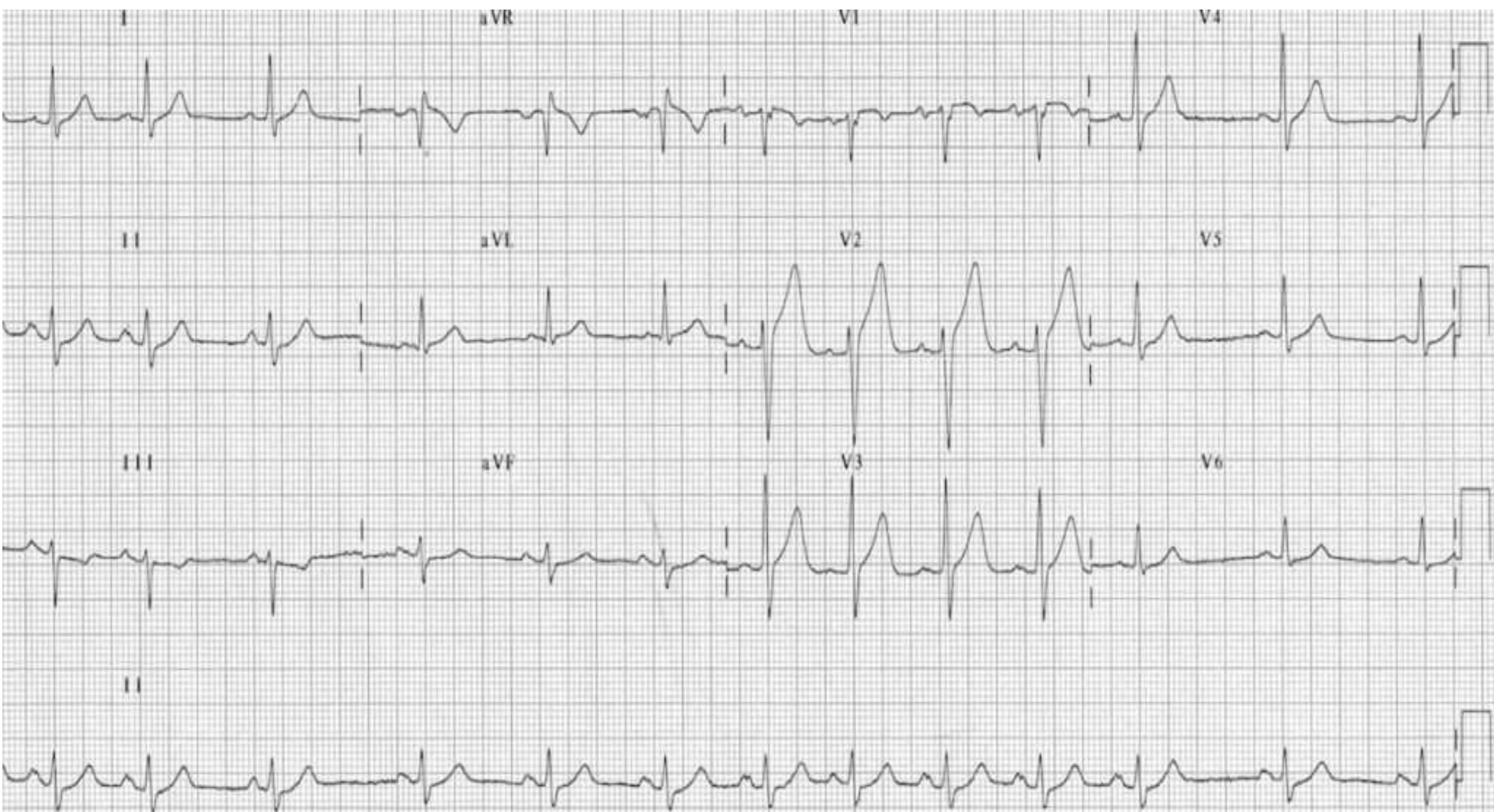
III

aVF

V3

V6

II



## آمبولی ریه

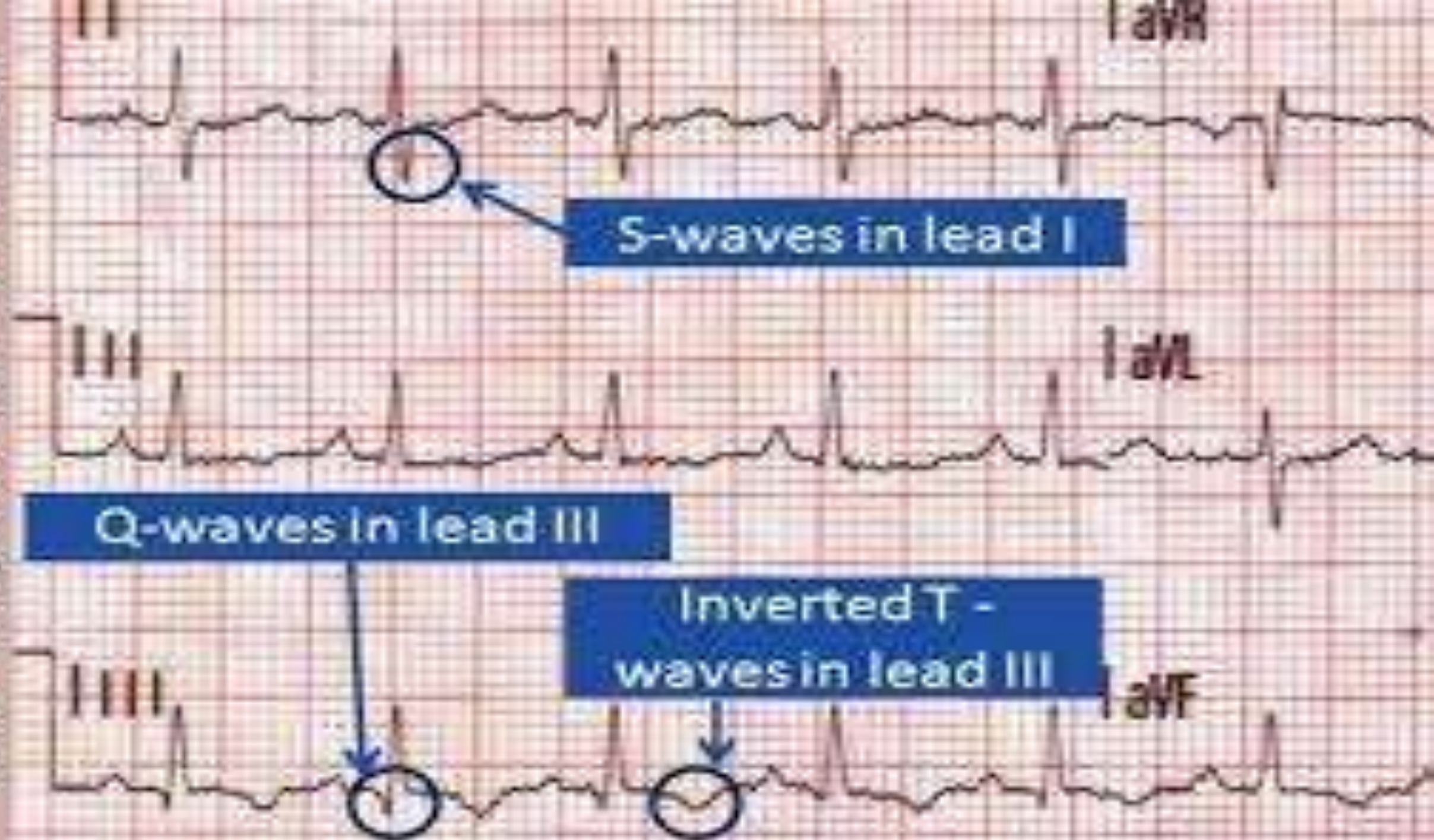


The  $S_1Q_3T_3$  pattern

LearnTheHeart.com



# ECG S1Q3T3 Classic Pattern



# VF

## Ventricular Fibrillation (VF)



shutterstock.com · 1800602845



# VF

Courtesy of Jason E. Roediger, CCT, CRAT





آسیستول



# Cardiac Asystole

Lead II

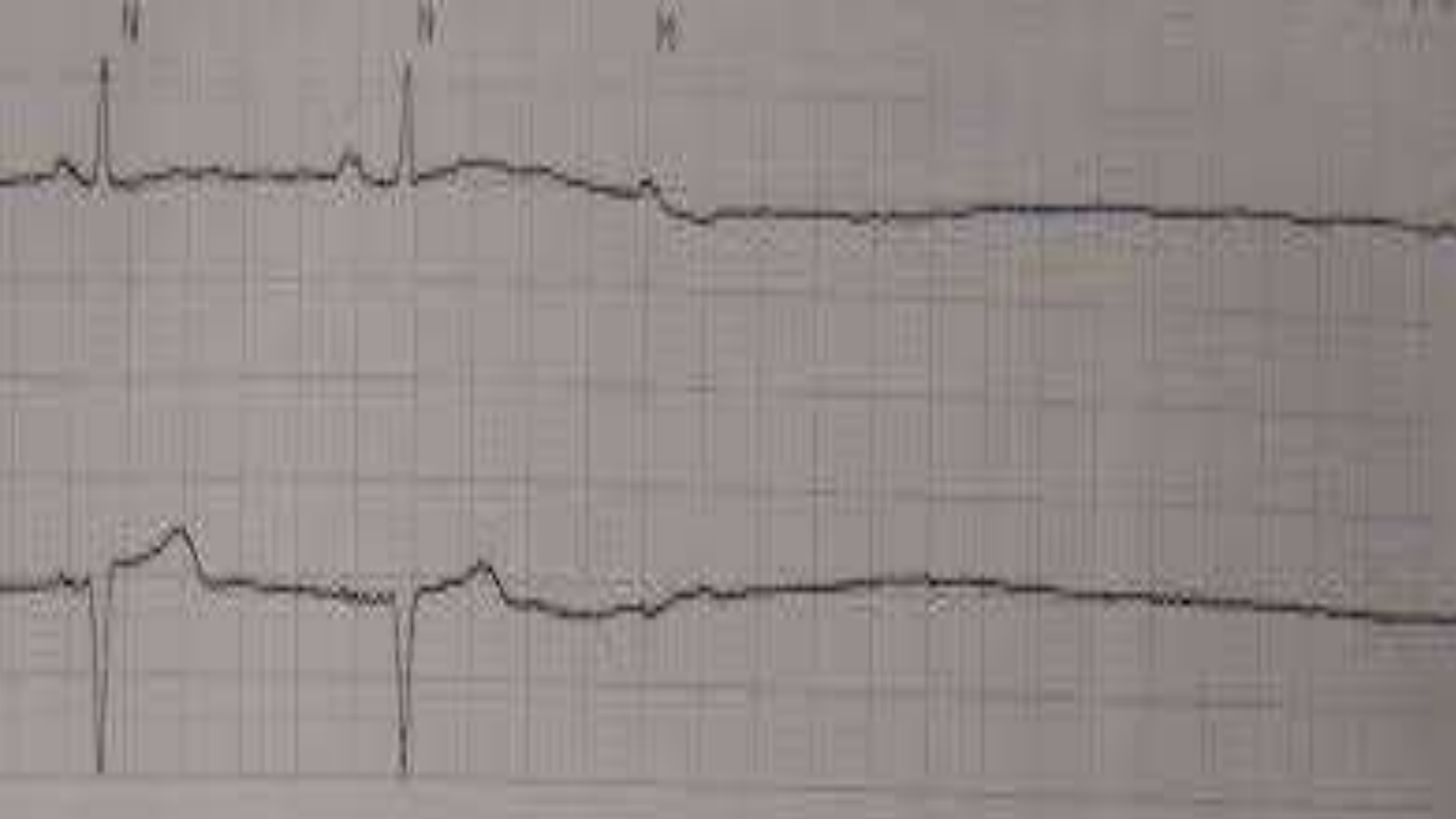


25 mm/sec 10 mm/mV









# Agonal Rhythm

Agonal rhythm is when the Idioventricular rhythm is 20 beats or less per minute. Frequently is seen as the last-ordered semblance of a heart rhythm when resuscitation efforts are unsuccessful.

