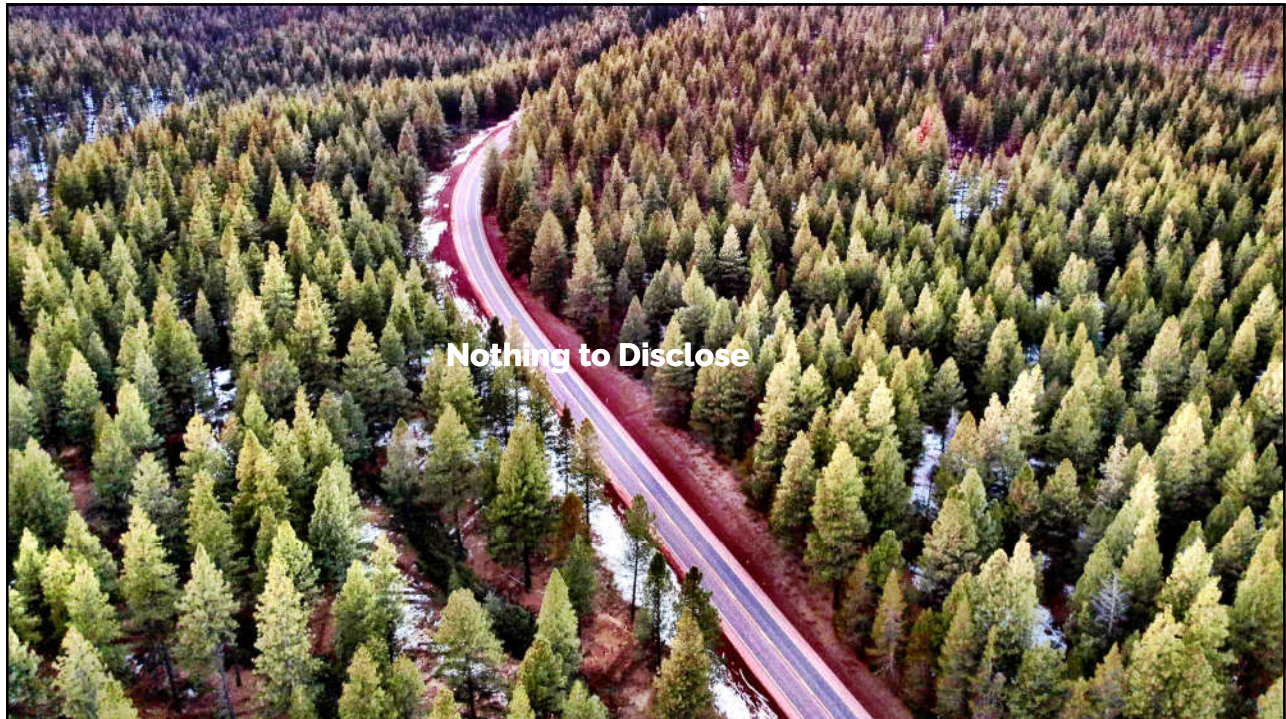




1

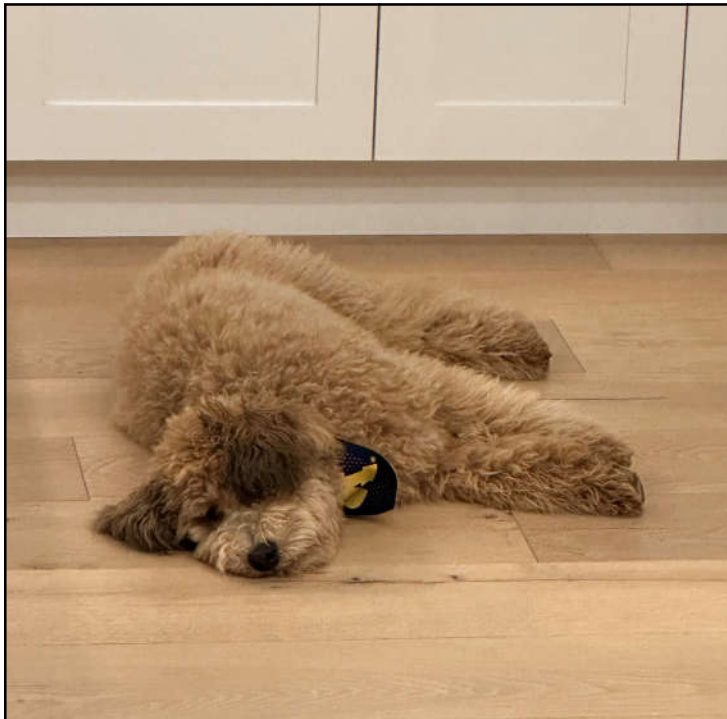


2

## Define It

- Syncope is a *transient* loss of consciousness and postural tone characterized by relatively rapid onset, usually short duration, and *spontaneous recovery* and is due to global cerebral hypoperfusion.

3



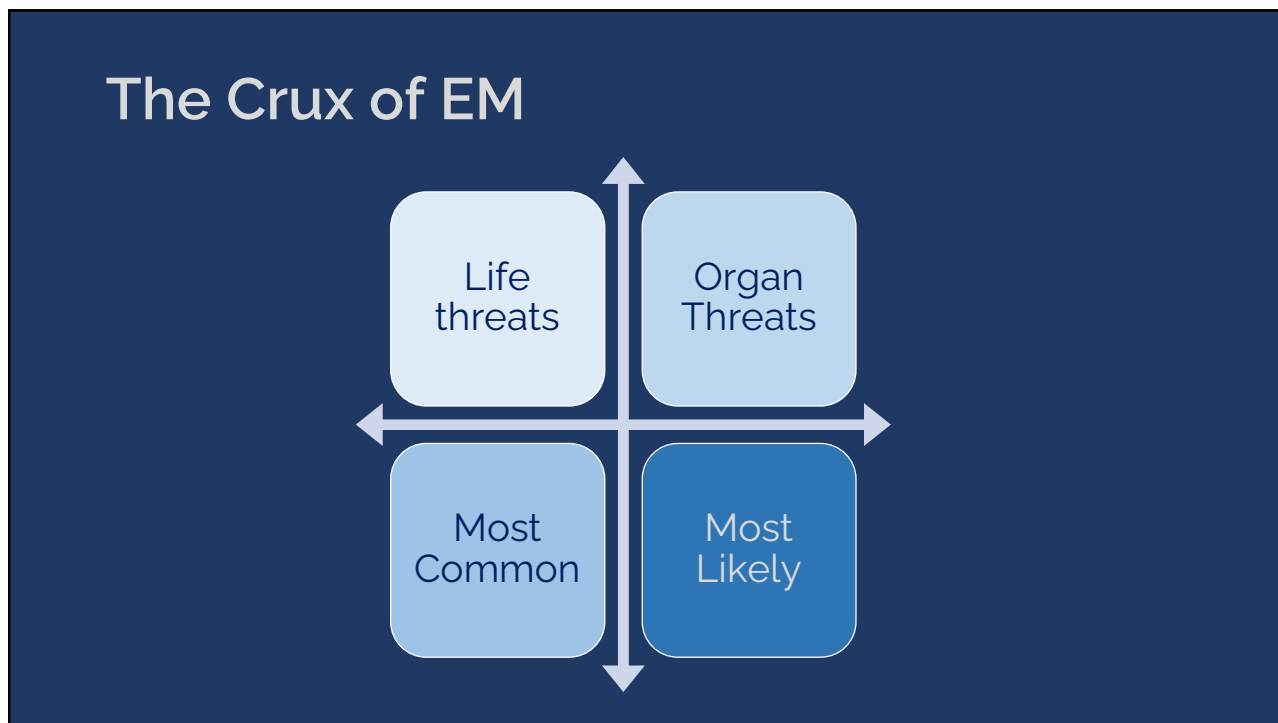
## Not Syncope

- Hypoglycemia
- Tox
- 'Dizzy'
- Seizure

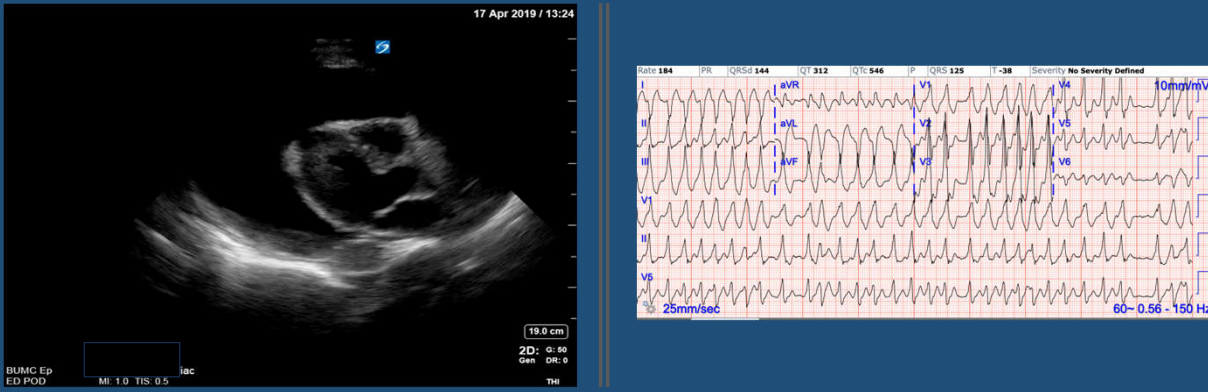
4



5



6



The image displays two medical diagnostic tools. On the left is an echocardiogram showing a cross-section of the heart with a scale of 19.0 cm and technical details: BUMC Ep ED POD, MI: 1.0 TIS: 0.5, iac, 2D: 0: 60 Gen, DR: 0, TH. On the right is an ECG strip with a rate of 184, PR interval of 144, QRS duration of 112, QT interval of 312, QTc of 546, P wave duration of 125, and T wave duration of 38. The severity is noted as 'No Severity Defined'. The ECG shows leads I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6. The scale is 25mm/sec and 60-0.56-150 Hz.

# The Heart of the Matter

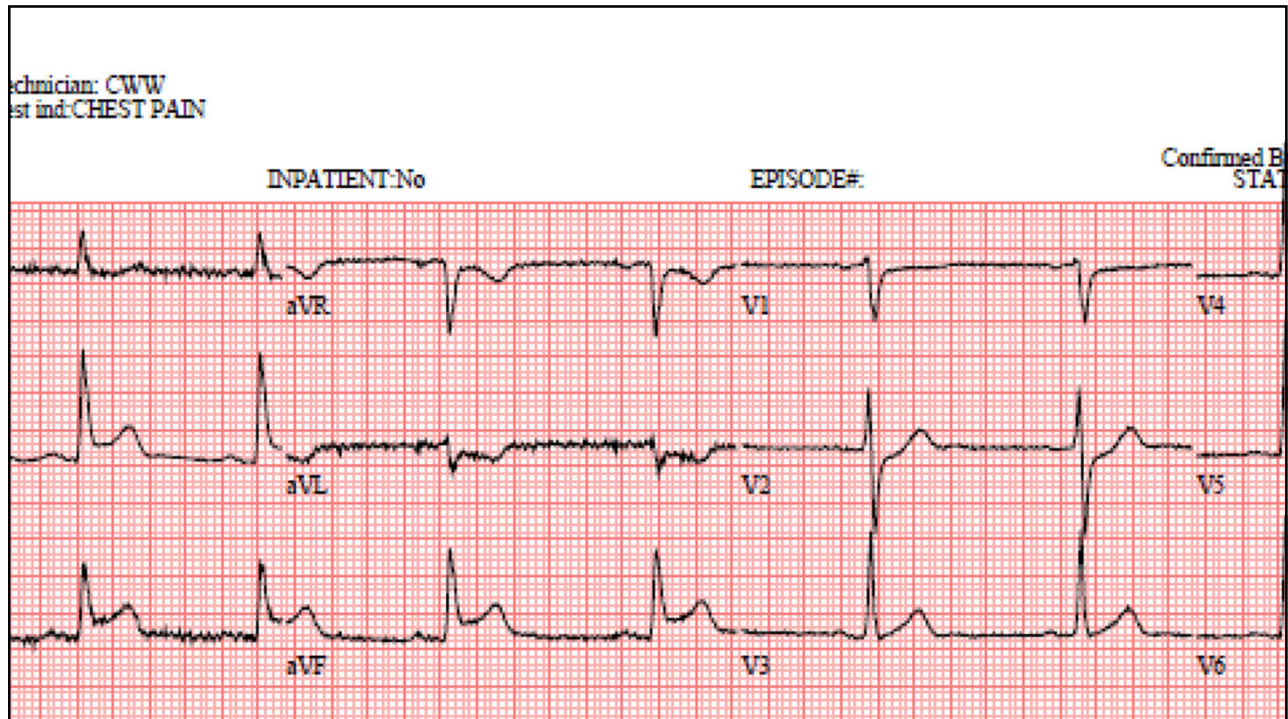
7




8



9



10



Rarely cause syncope

- AFib
- SVT
- MAT
- Sinus tachycardia

11

## The Fatal Five

- ✓ WPW
- ✓ Prolonged QT
- ✓ Brugada
- ✓ HOCM
- ✓ ARVC

*MDM:*

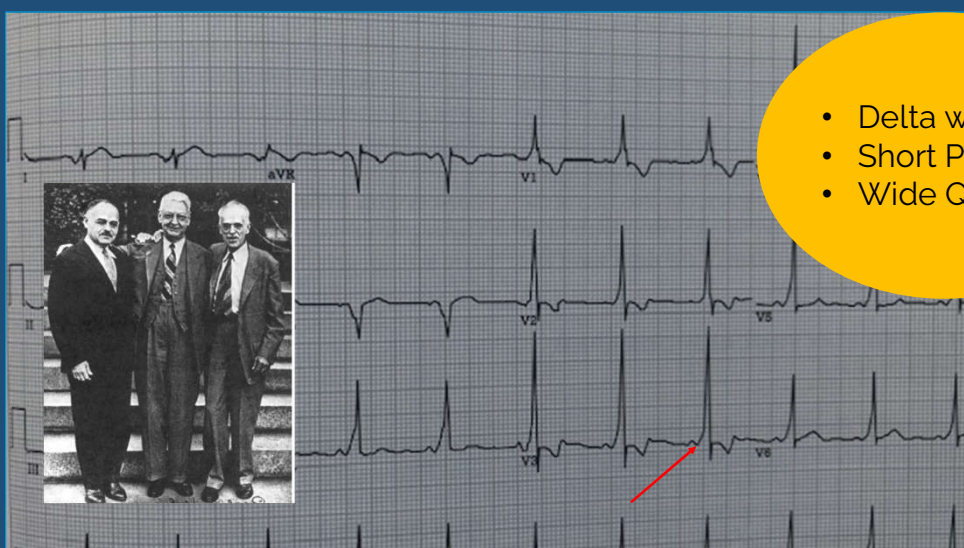
*ECG without signs of acute ischemia, dysrhythmia, WPW, Prolonged QT, Brugada, HOCM, ARVC.*

12



13

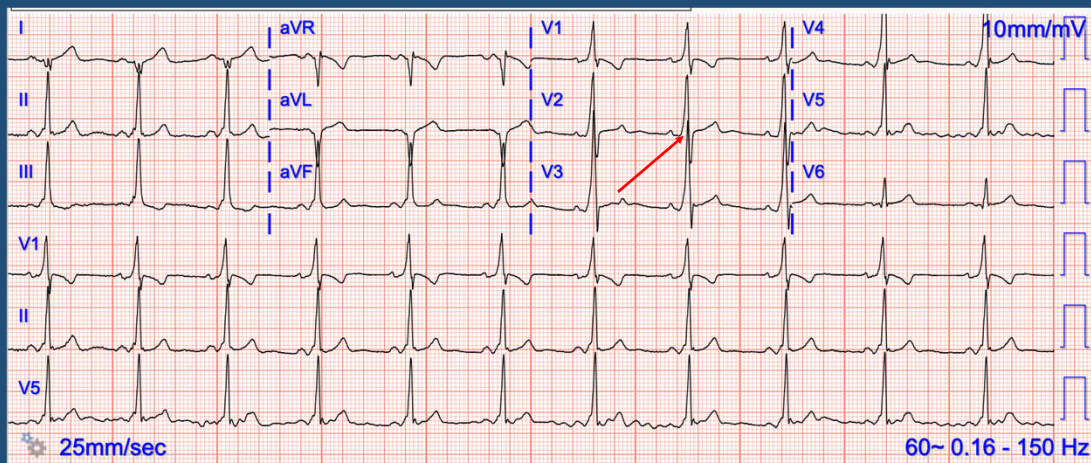
## Wolff-Parkinson-White (WPW)



- Delta wave
- Short PR
- Wide QRS

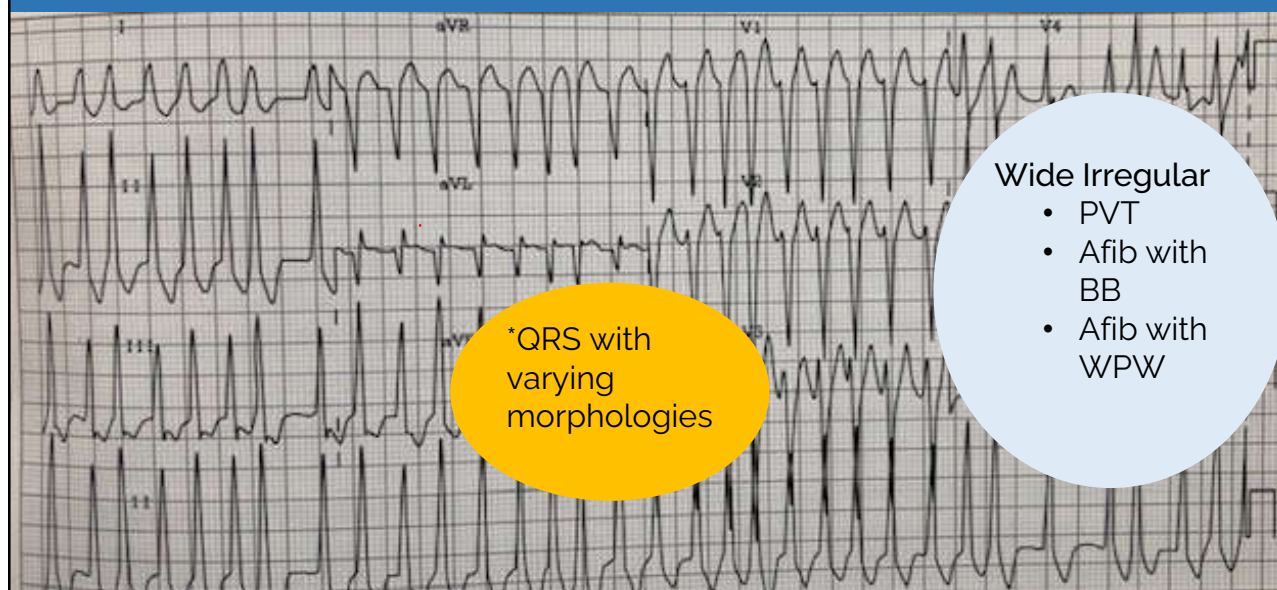
14

## WPW



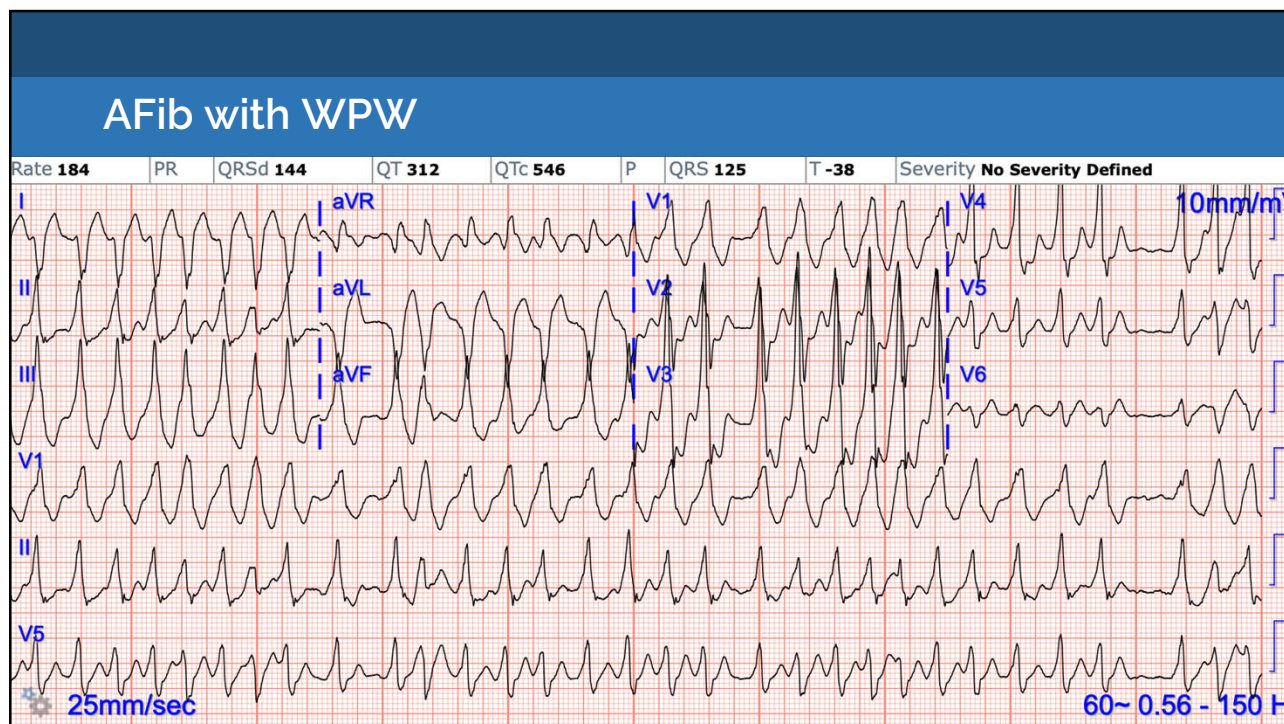
15

## AFib with WPW



16





17

## Treatment?

---

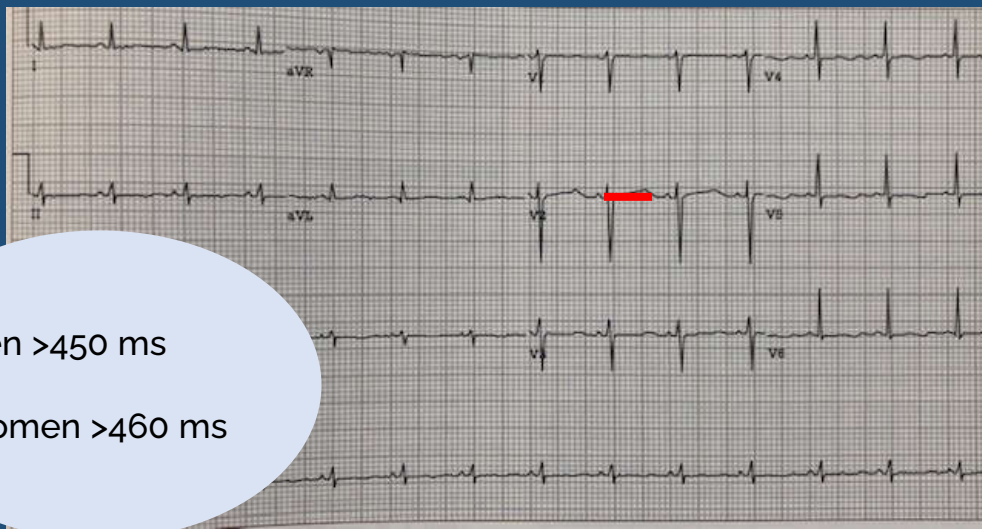
- AVOID AV NODAL BLOCKERS
  - BB
  - CCB
  - Amio
- Use
  - Procainamide
  - Electricity

18



19

## Prolonged QT

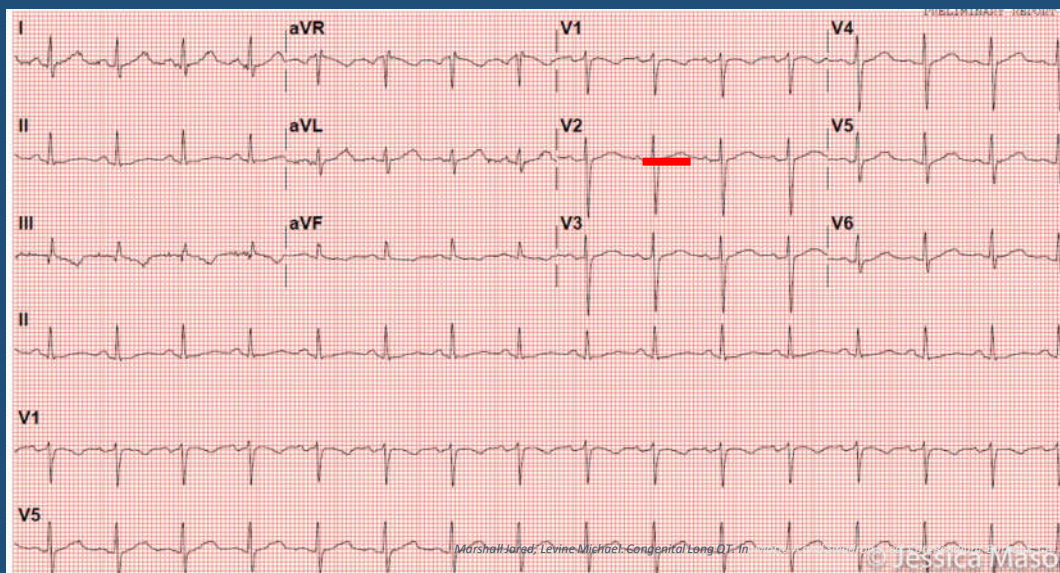


Men >450 ms

Women >460 ms

20

## Prolonged QTc



21

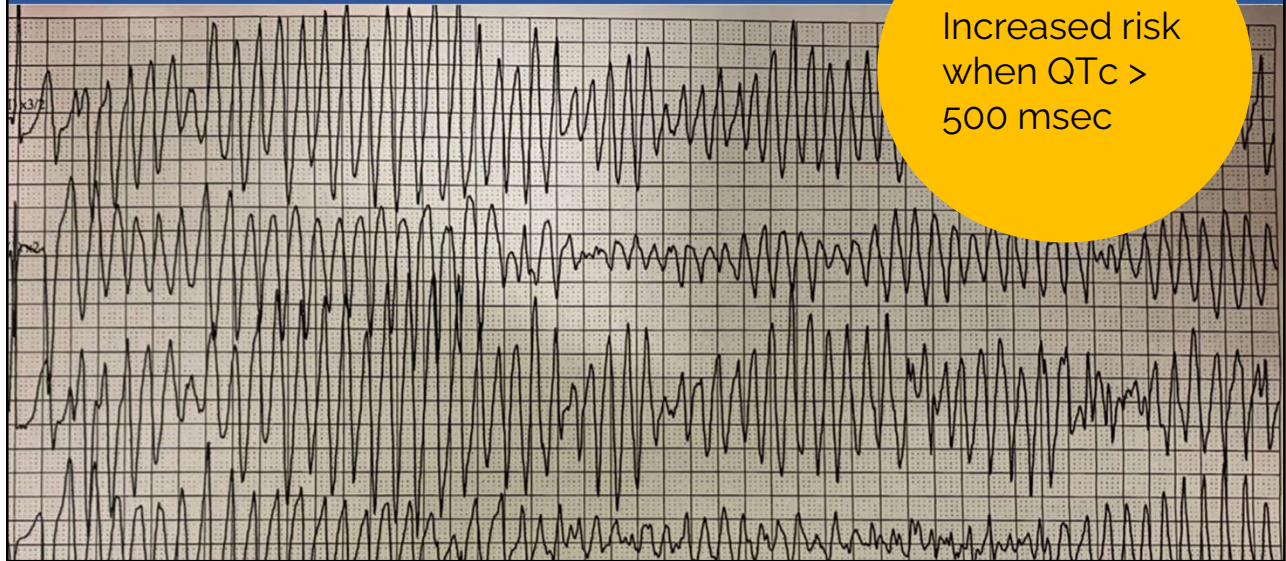
## Prolonged QT: Etiology

- Congenital
- Meds
- Lytes



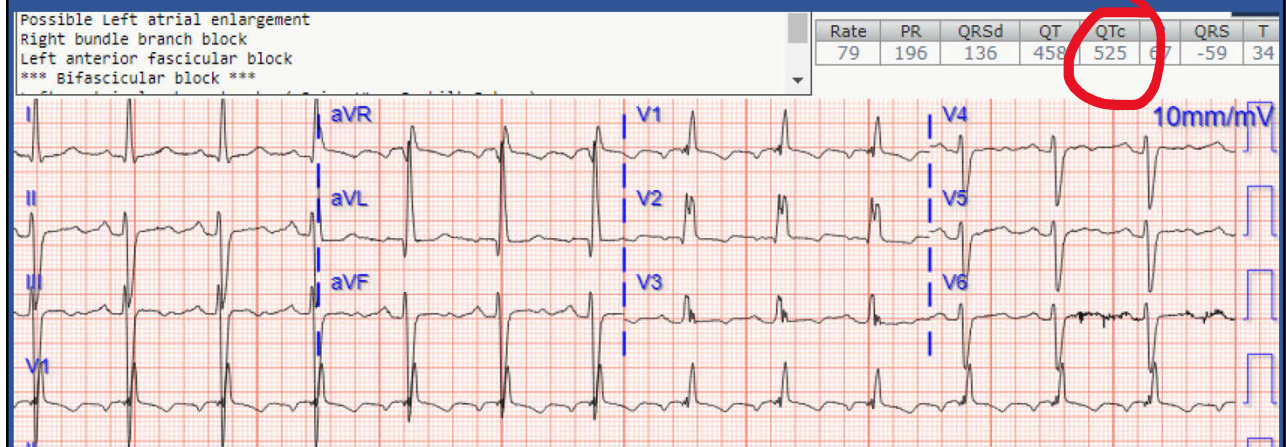
22

## Torsade



23

## Prolonged QTc & the Wide QRS



24

## QTc & the Wide QRS

- **Simple method**

- Subtract half QRS duration from QTc

- **JTc**

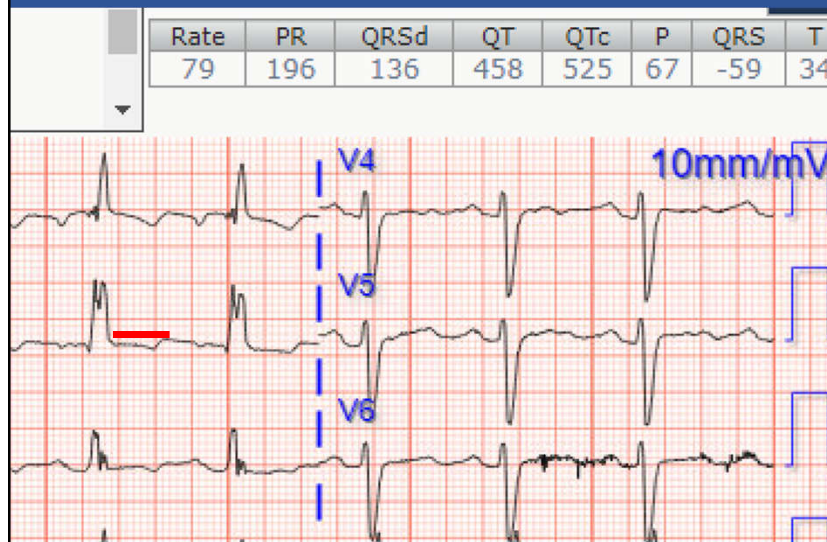
- QTc-QRS
- Unique intervals

>420 ms



25

## Calculating Modified QTc



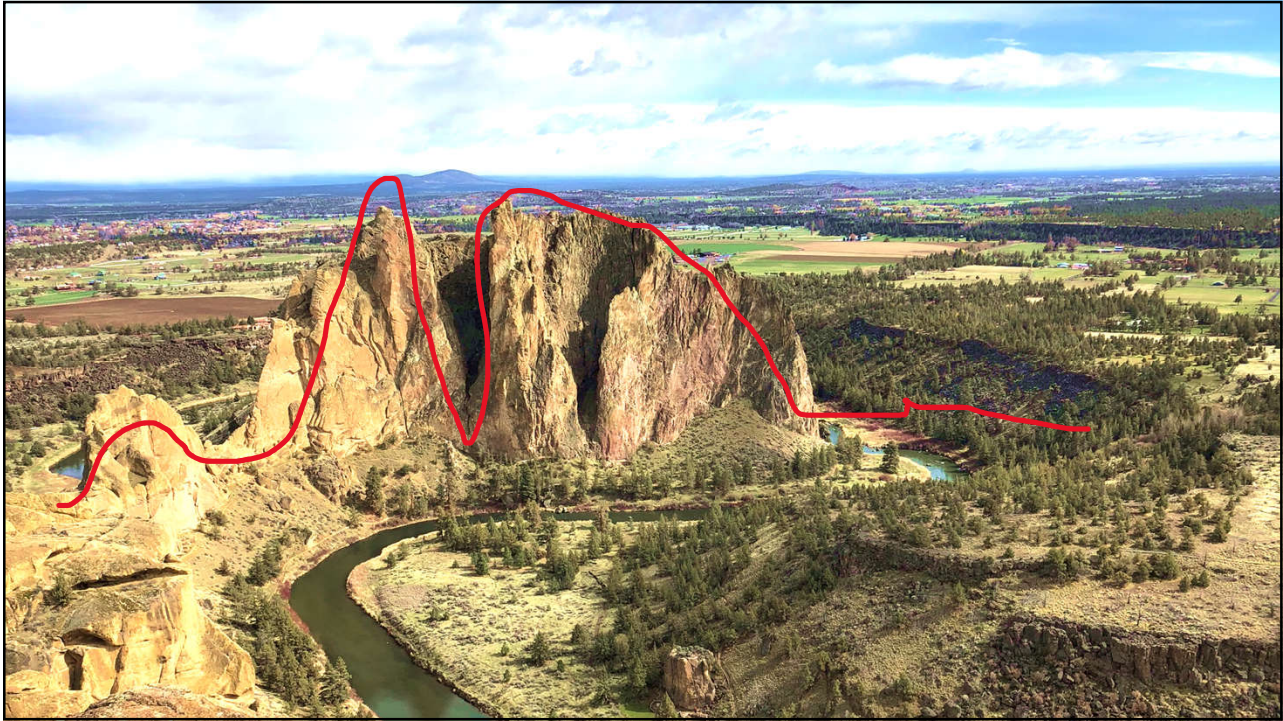
- **Simplified**

- QTc- 1/2 (QRS)
- $525 - \frac{1}{2}(136) = 457$  msec

- **JTc**

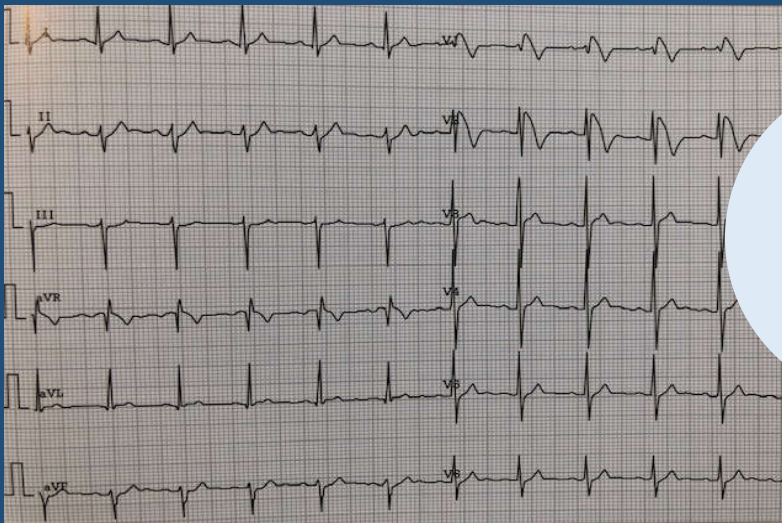
- QTc-QRS
- $525 - 136 = 389$  msec
- <420 msec

26



27

## Brugada



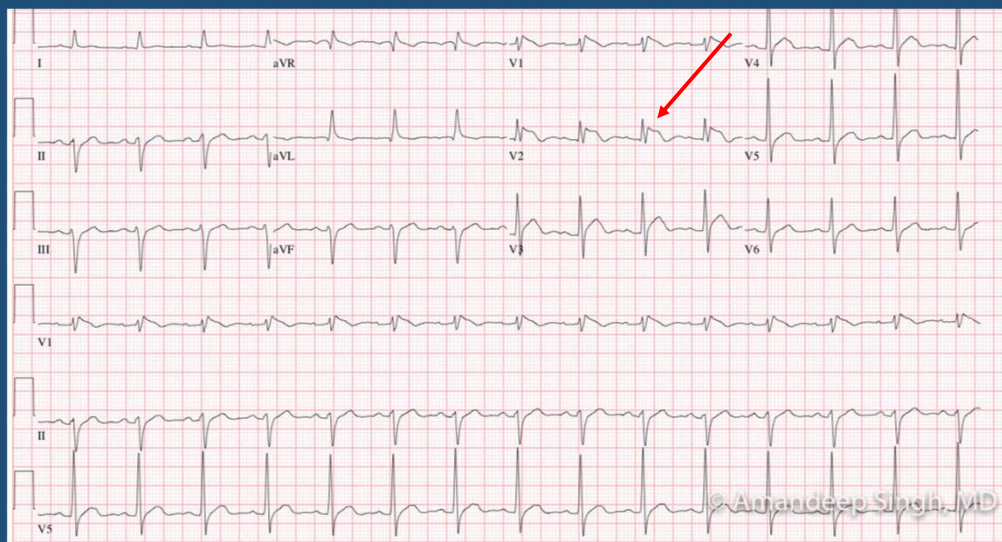
- RBBB
- STE in V1, V2

28

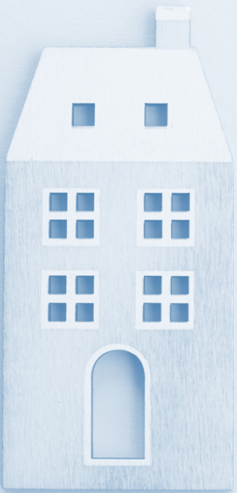


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## Brugada



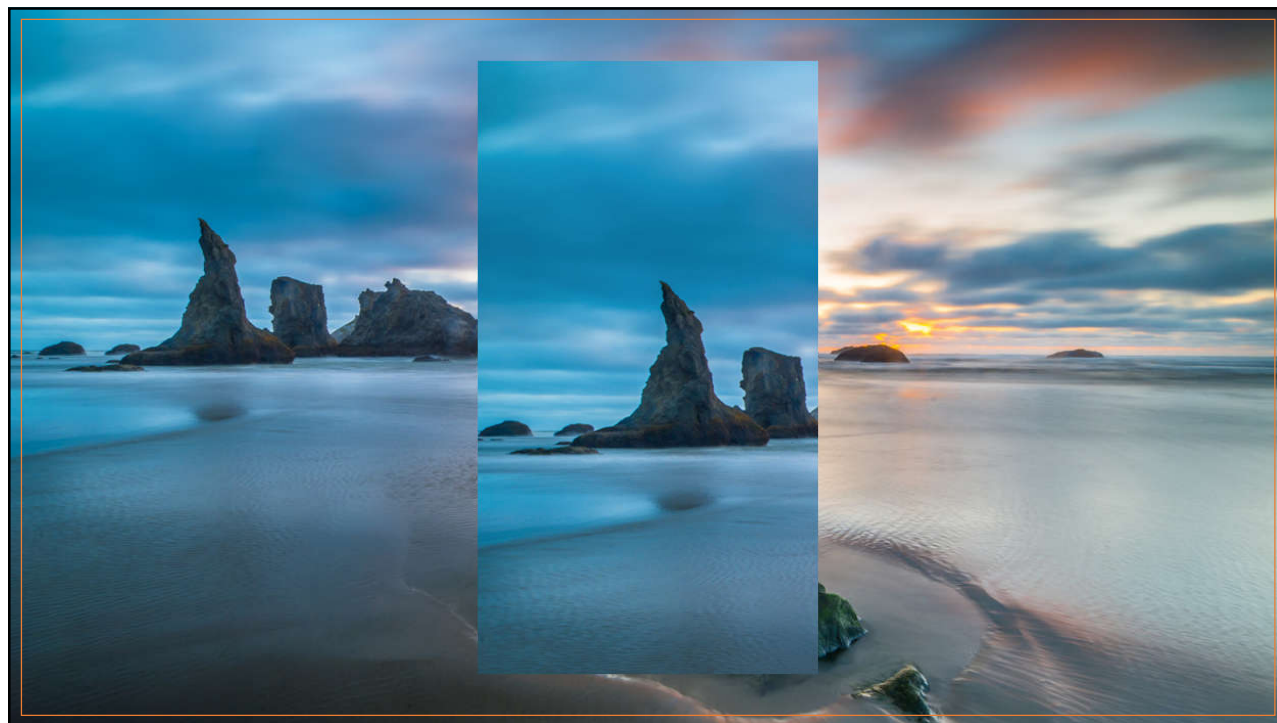
30



## Brugada Pearls

- Unmasked by stressors
- Refer to cardiology
- Specify 'Brugada' when ordering an outpatient monitor,

31



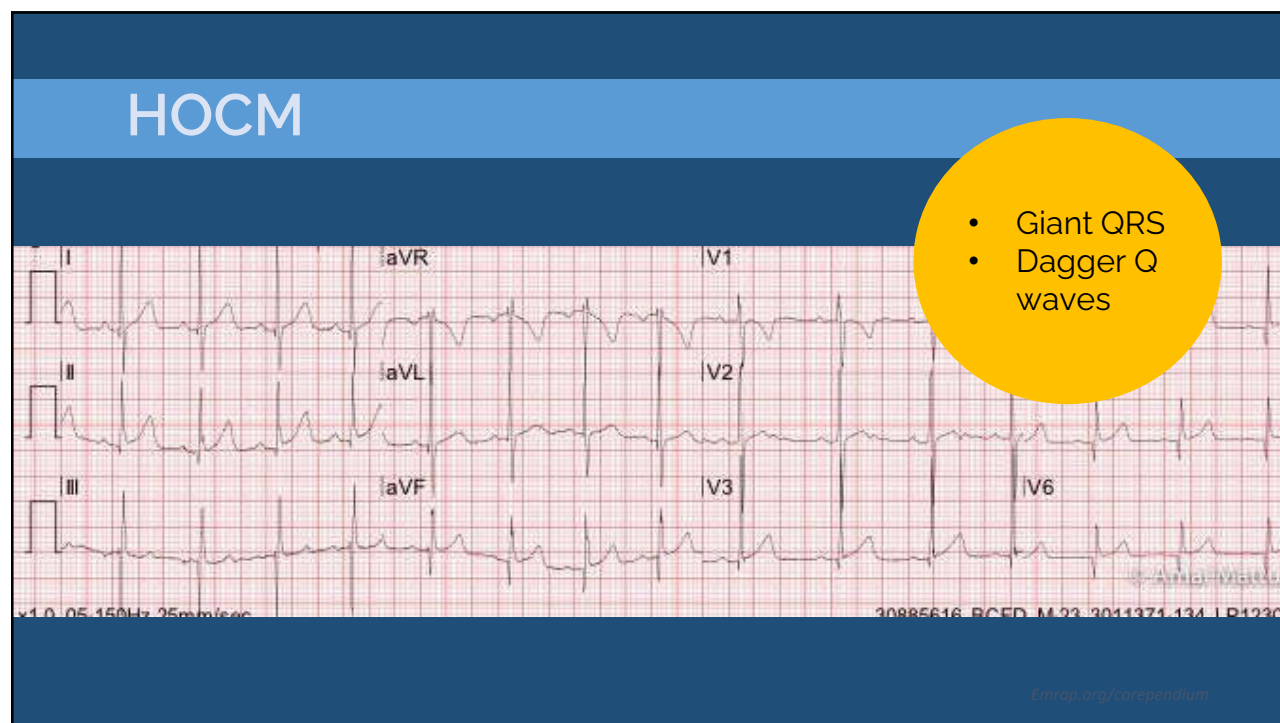
32



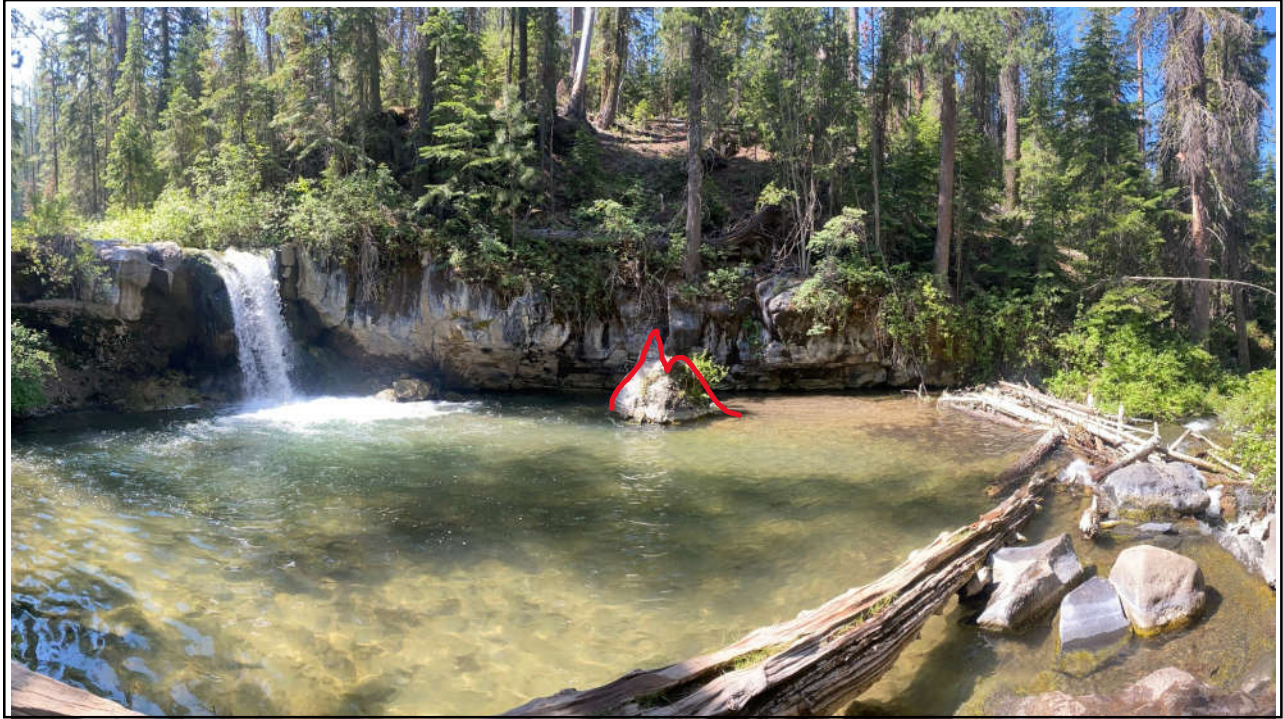
## Hypertrophic Obstructive Cardiomyopathy (HOCM)

- Leading cause of SCD in younger patients
  - 50% without family history
- Both structural and electrical abnormalities
- Most commonly present with dyspnea on exertion

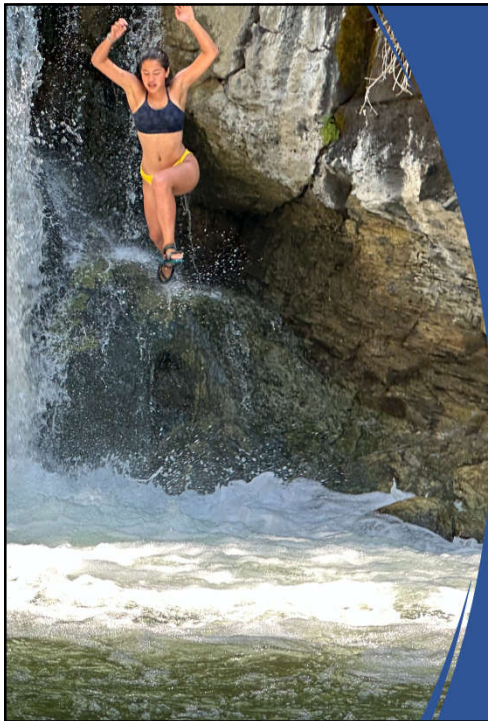
33



34



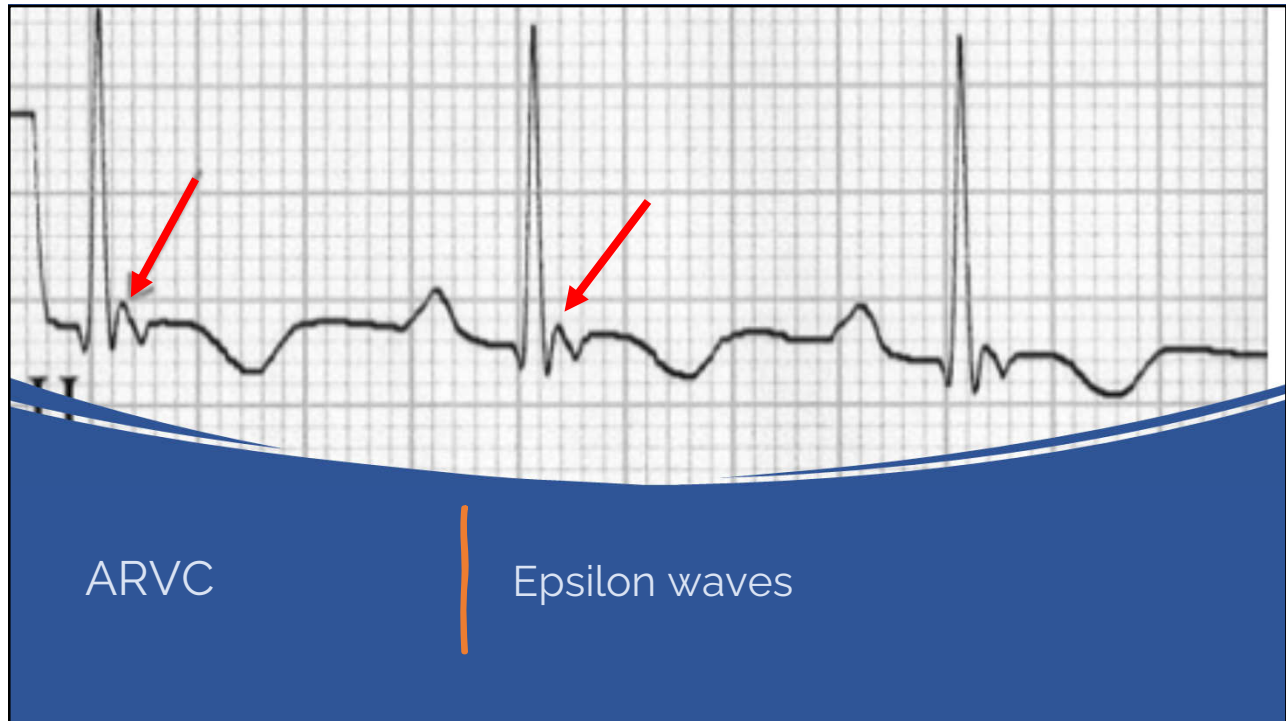
35



## Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC)

- Autosomal dominant
- Second most common cause of SCD in young patients after HOCM
- Often involves LV

36



37

## Diagnosis

- ECG
  - Fontaine leads
- Biopsy
- MRI

**F-ECG**

I CLB FIA++ 2N 25

II

III

Click on image to zoom

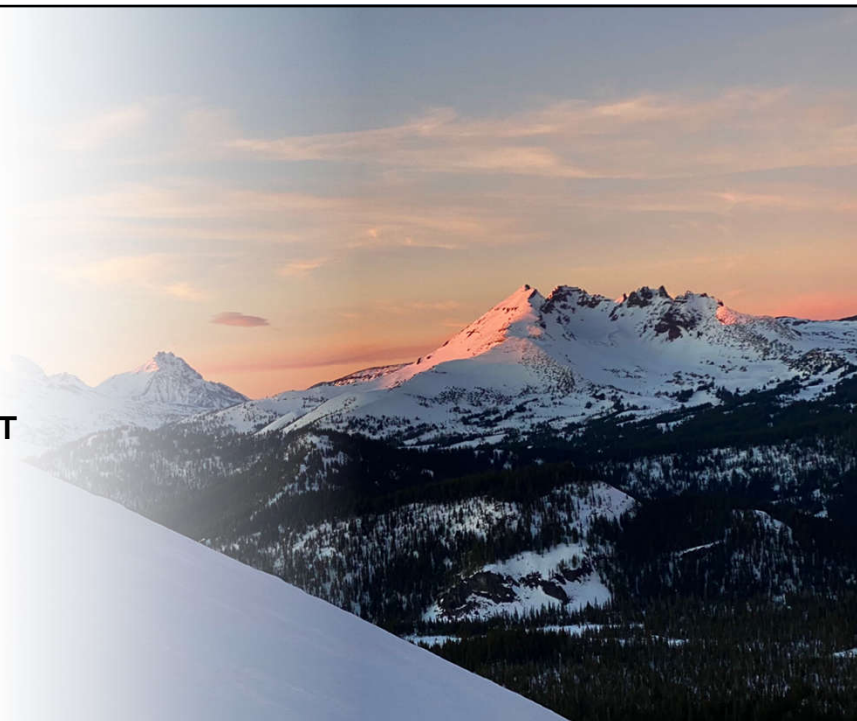
**S-ECG**

Pérez-Riera et

38

## Après

- Life threats first
- History & ECG
- Fatal 5
  - **WPW**
  - **Prolonged QT**
  - **Brugada**
  - **HOCM**
  - **ARVC**
- Don't wait



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