

Se trata de un adolescente de 14 años sin antecedentes clínicos de importancia y sin antecedentes de miocardiopatías o muerte súbita en familiares de primer grado.

Consulta por síncope de esfuerzo según referencia de colega por lo que realicé una prueba de esfuerzo, previo a esta interrogué por su episodio sincopal el cual tenía características más bien reflejas, si bien fue durante la actividad física previamente presentó pródromos (mareos, náuseas; visión borrosa) lo que obligó a parar y posteriormente la pérdida de conciencia. No refirió palpitaciones previas y es el único episodio presentado.

El ECG basal lo adjunto y lo dejo a su interpretación, de antemano aclaro que las derivaciones están bien colocadas. El ecocardiograma transtorácico no informó cardiopatía estructural, adjunto los trazados del Holter, finalmente en la prueba de esfuerzo no hubo modificaciones del ECG basal (por lo cual no adjuntó sus trazados).

Saludos Cordiales.

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Adolescente (14 anos)

Motivo da consulta síncope de esforço único

Antecedentes pessoais e familiares nada digno de nota.

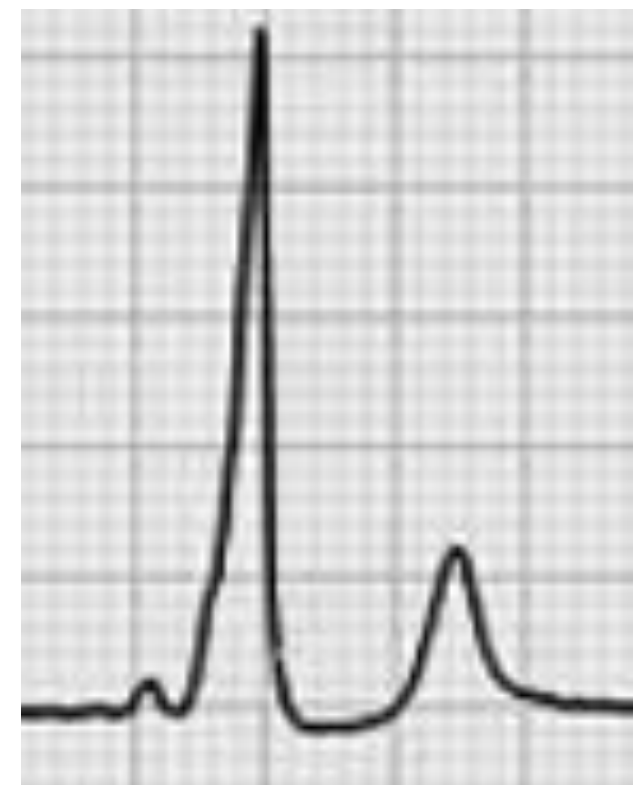
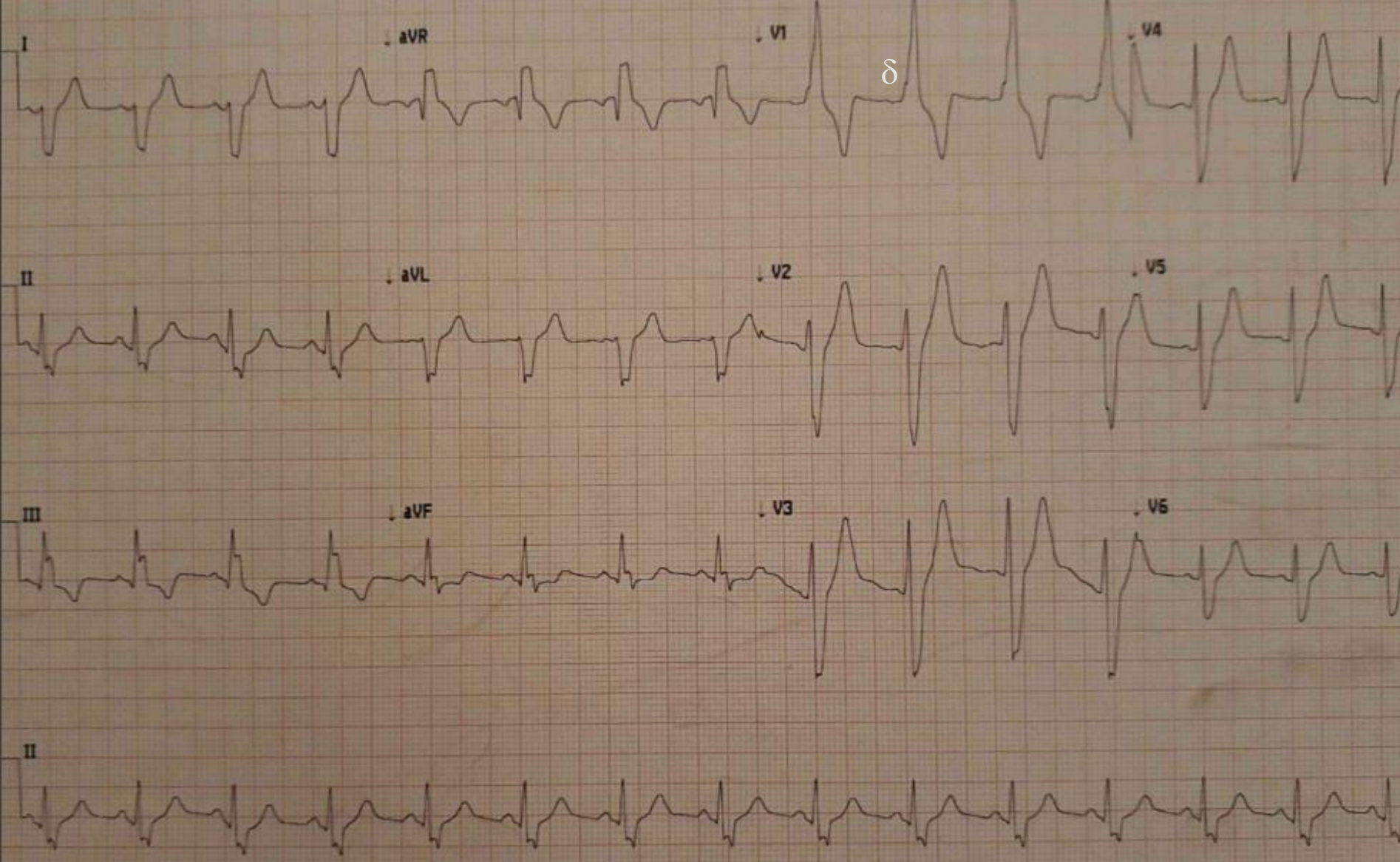
Ecocardiograma: normal

Teenager (14 years old)

Reason for consultation: syncope at effort

Personal and family history nothing worth noting.

Trasthoracic Echocardiogram: normal



Ventricular pré-excitation: short PR interval (110ms), delta wave (V1) broad QRS interval (QRSd:120ms), QRS shape “pseudo bifascicular block”: (pseudo LPFB+RBBB), accessory pathway at left side, superior(because inferior leads are predominantly positive), and superiorparaseptal



## Current Nomenclature and Proposed Terminology

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Current  
(Attitudinally Incorrect)

Proposed  
(Attitudinally Correct)

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Right

anterior

superior

antero-lateral

supero-anterior

lateral

anterior

postero-lateral

infero-anterior

posterior

inferior

Left

anterior

superior

antero-lateral

supero-posterior

lateral

posterior

postero-lateral

infero-posterior

posterior

inferior

Septal paraseptal

anteroseptal

superoparaseptal

posteroseptal

inferoparaseptal

midseptal

septal

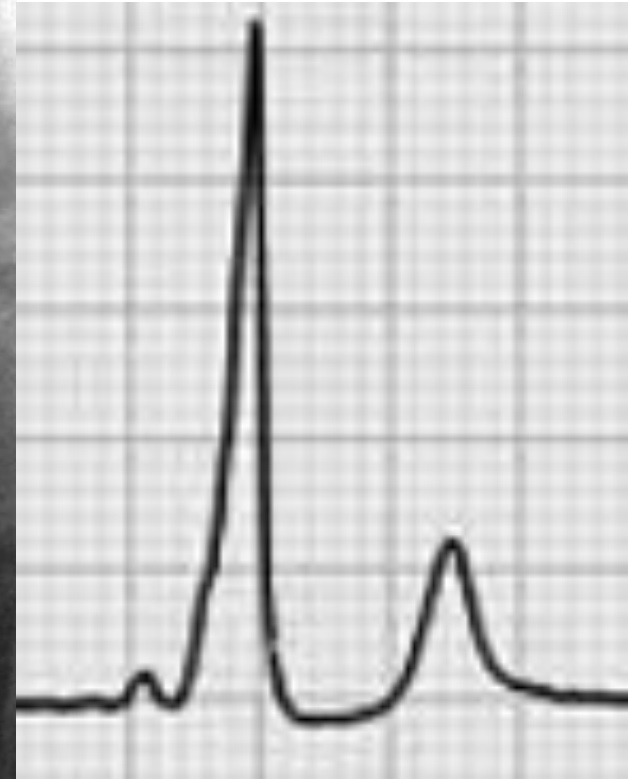
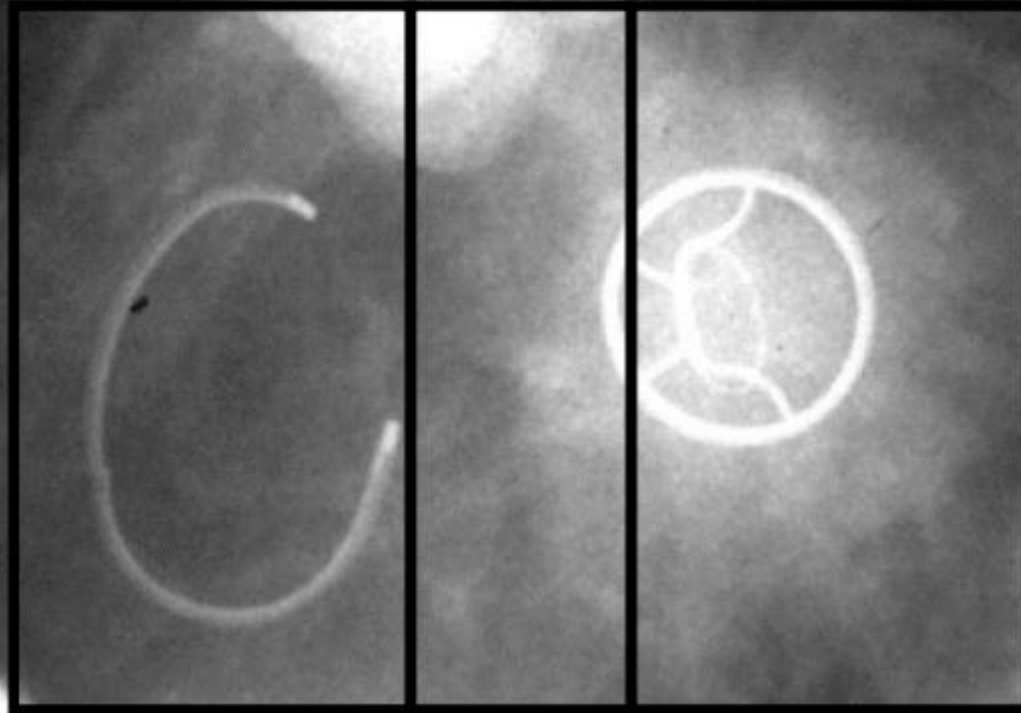
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Proposed terminology is based on anatomic positions.

**First step: QRS with  $\Delta$  wave and wide?**

**1. Sufficient  
pre-excitation?**

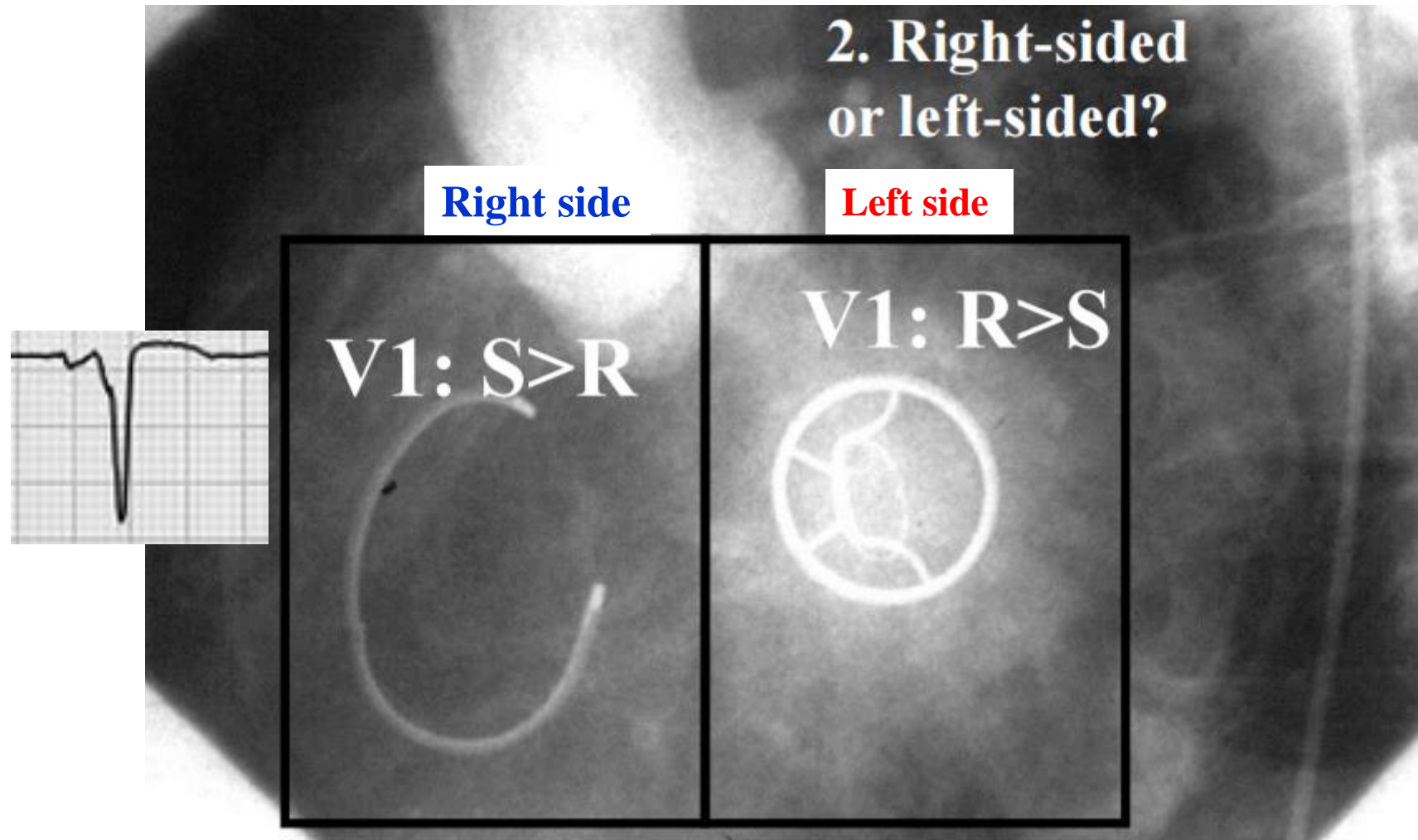
**( $\Delta$ QRS 120 ms)**



Answer: sufficient for pre-excitation criteria: short PR interval,  $\Delta$  at the beginning of QRS, prolonged QRS.

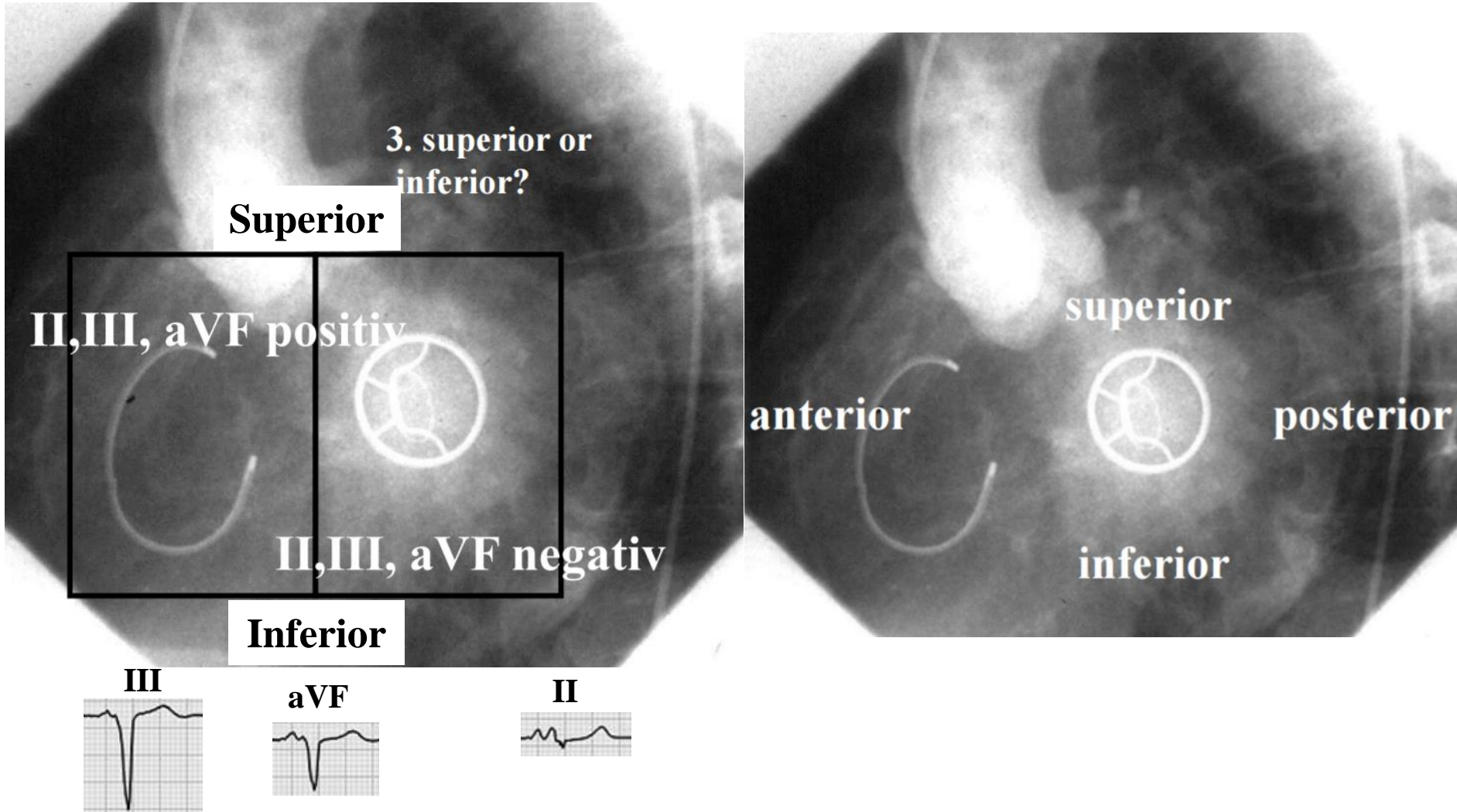


## Second step: right side or left side?



Answer: right side, because  $S > R$  in V1.

# Third step: superior or inferior?



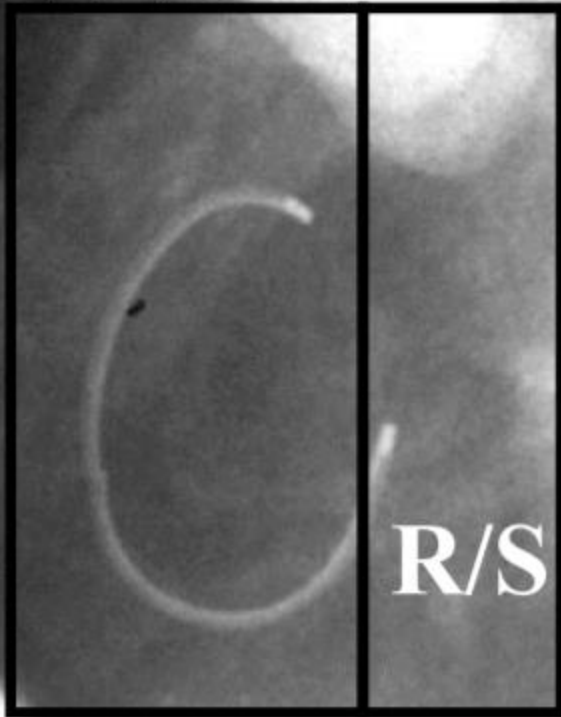
Inferior, when inferior leads are predominantly negative and superior when these leads are predominantly positive

4. Right free wall  
or septal/paraseptal?

Right  
free wall

Septal/  
paraseptal

$R/S \geq V3$



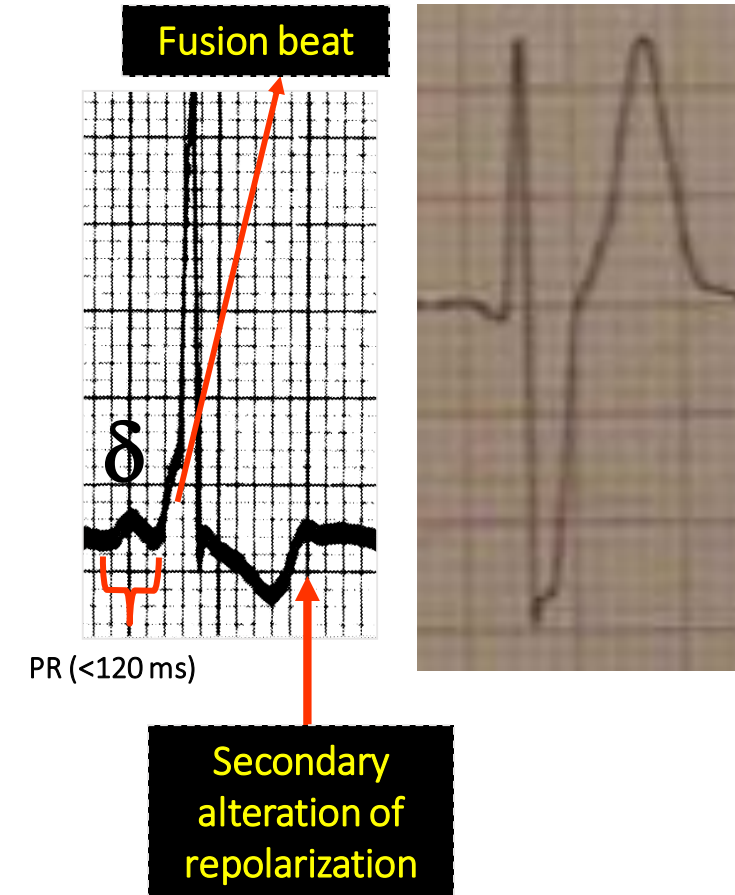
$R/S \leq V3$





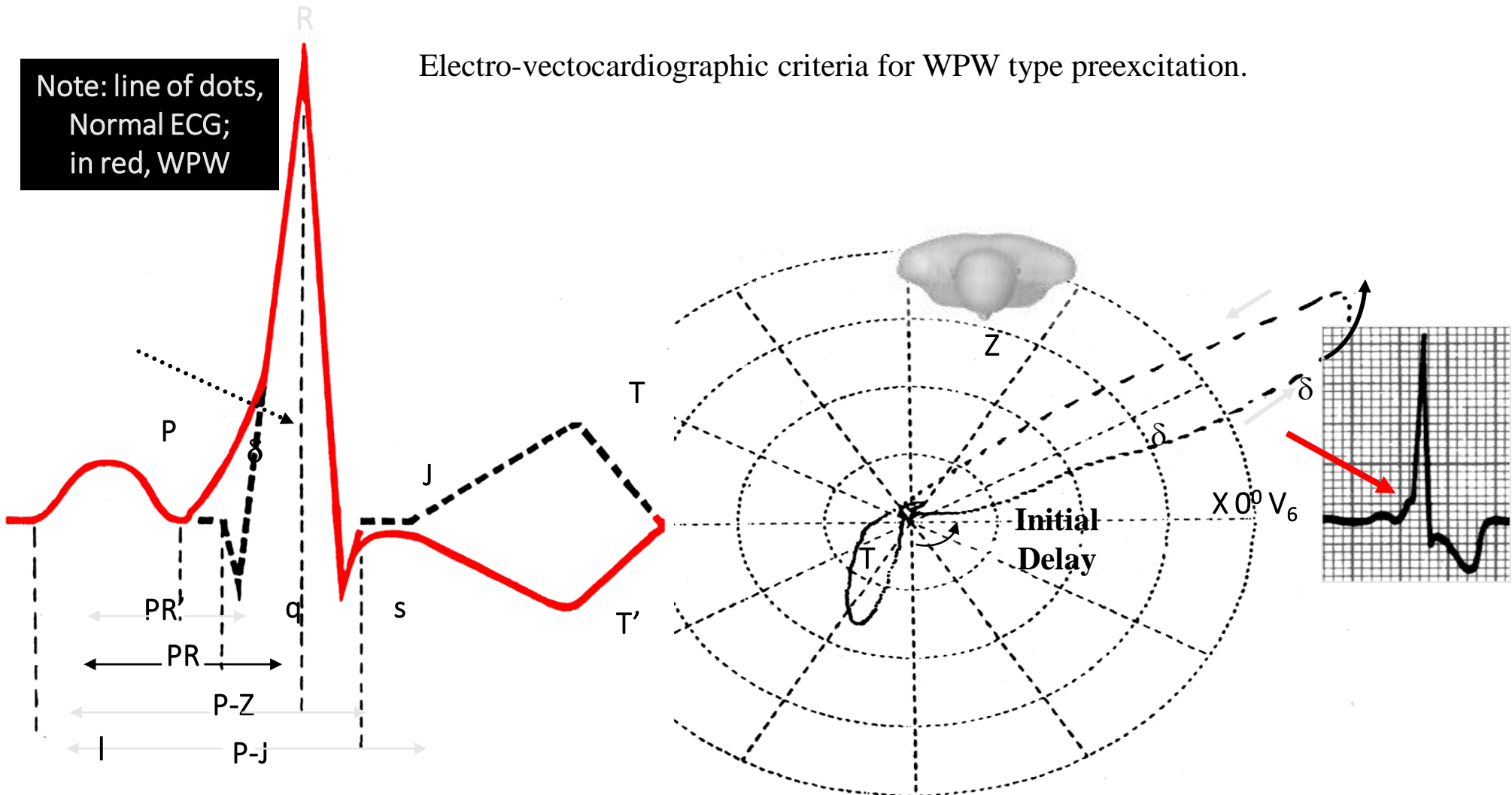
## Preexcitation by Kent accessory pathway, classical or WPW type: electro-vegetocardiographic criteria

- 1) Short PRi interval: <120 ms in adults and 90 ms in children;
- 2) Wider QRS complex:  $\geq 100$  ms 70% of the cases. 30% < 100 ms;
- 3) A slurring and slow rise of the initial upstroke of the QRS complex (delta wave). In another words, thickening or notch at the onset of QRS complex: DELTA  $\delta$  wave, duration 30 ms to 60 ms and voltage of up to 5 mm, which corresponds to early depolarization by ventricular mass.
  - Unaltered P-J interval (normal): 180 to 260 ms (slide 18);
  - Unaltered P-Z interval (normal): 230 ms (150 to 230 ms);
  - Alterations secondary to ventricular repolarization (ST-T): depending on aberrant depolarization;
- 4) ST segment–T wave changes, generally directed opposite the major delta wave and QRS complex
- 5) Frequent association with tachyarrhythmias (40% to 80% of cases): if they are absent, “WPW pattern;” if they are present, WPW syndrome: PSVT either orthodromic (90%), antidromic (10%), AF (20%), atrial flutter, or ventricular fibrillation.
- 6) Characteristic initial delay of QRS loop in the three VCG planes (Delta loop).
- 7) Pseudo-infarction pattern can be seen in up to 70% of patients – due to negatively deflected delta waves in the inferior / anterior leads (“pseudo-Q waves”), or as a prominent R wave in V1-3 (mimicking lateral infarction (ancient dorsal)).



# WPW ECG/VCG correlation

Electro-vectocardiographic criteria for WPW type preexcitation.



- **PR<sub>i</sub> or PQ:** since the onset of P up to the onset of QRS. It represents the time the stimulus takes to go from the SA node until reaching the ventricles: 120 ms to 200 ms.
- **PZ:** distance between P wave onset until R apex: 150 to 230 ms.
- **PJ:** distance between P wave onset until j point: 180 to 260 ms.

- Initial delay of QRS loop: delta wave.
- T-loop opposite to QRS loop

